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PROFESSIONAL AUDIO AND MUSIC PRODUCTION

DESKTOP PRODUCTION

Loops in the Mix

Virtual Drum Kits

Review: Ableton Live 4

Radical Recording

Venturing Off the Beaten Track



Avril Lavigne
LIVE!

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22/18



Nostalgia TV Comes to DVD

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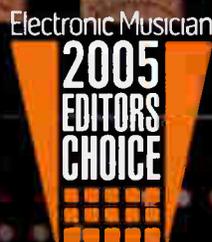
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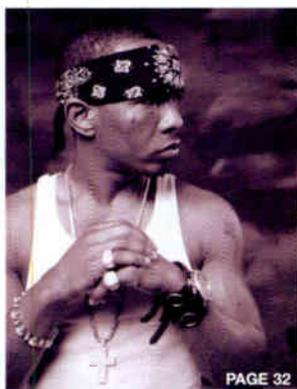
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MIX

PROFESSIONAL AUDIO AND MUSIC PRODUCTION

February 2005, VOLUME 29, NUMBER 3



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On the Cover: In Miami, the sleek, ultra modern Supersonic Studios' (Miami) hybrid design integrates a Digidesign ICON, Pro Tools|HD Accel, Genelec monitoring, with classic and contemporary outboard gear. **Photo:** Ken Nelson. **Inset Photo:** Steve Jennings.



features

32 In the Loop

Incorporating loops into a production, whether from one of the many loop libraries or built from scratch, has become commonplace in music recording. But while the latest sequencing software and other tools can make an engineer's life easier, there is the risk of sounding prefab, stale or otherwise uninspired. *Mix* chats with a few engineers and producers who share their tips to keep your tracks full of endlessly fresh grooves.

39 The Beat Goes Virtual

Just as music production is increasingly staying "inside the box," musical instruments are being pipelined straight into workstations. Virtual drum machines have grown up since musicians created with drum and percussion samples, now incorporating features such as velocity switching among samples and groove agents. *Mix* peruses today's offering of audiophile-grade drum machines

48 Radical Recording

No more cookie-cutting production styles! John Vanderslice, Alex Newport and Matt Wallace experiment with odd uses of vocalists, gear and just about anything they can find to create their own pieces of sonic nirvana.

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62 Tune In, Stream On, Get It Out

Bonnaroo 2004, out in the wilds of Tennessee, was host to one of the most powerful portable production packages anywhere. *Mix* L.A. editor Maureen Droney finds out how the Webcast, simulcast, on-site CD mix and later DVD mix came together.

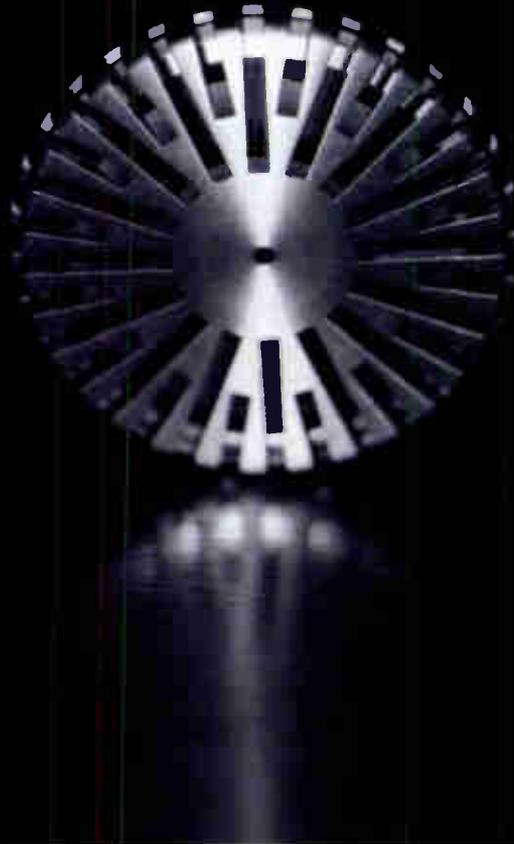
63 TV Comes to DVD

Last year, it was music specials on DVD. This year, it's your favorite TV shows from days gone by. Find out how these nostalgia packages come together.

Check Out Mix Online! <http://www.mixonline.com>

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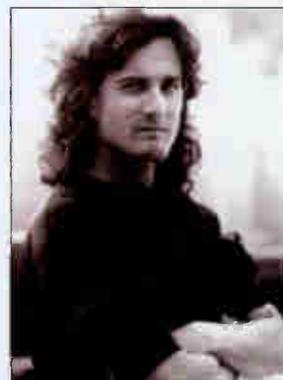
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New School, Old School...Same Old School

The focus of this month's *Mix* is on "Desktop Production." Beyond the value of this phrase as a cool marketing hook, there's a whole lot going on in this area. PCs keep on their rocketing trend toward mo betta/mo fasta—and much cheaper: Last month, I plunked down a whopping \$75 at a local retailer for a 200GB Seagate Barracuda hard drive; it wasn't all too long ago that 20MB drives cost \$200. And as hardware costs plummet, the power and functionality of today's software studio tools keep advancing to make sure that we're never quite caught up with enough RAM or CPU power. Upgrading is definitely part of the desktop studio scene.

It would be too easy to pigeonhole desktop production into the image of a solo engineer/producer/artist slaving away on a laptop with a set of headphones, creating the next dance hit. But PCs are hardly a new addition to the studio milieu, whether they were built into SSLs or running Flying Faders automation, MIDI sequencing or DAWs. The main difference these days is that many of today's software programs make the production process so easy that anyone becomes an instant hit-maker. If only it were so simple.

In the quest for that hit, there are a number of other factors to consider—the right song, the right artist, the right players, the right arrangement, the right mix and maybe even distribution and promotion—but none of these are likely to be found in a software application. Dealing with such intangibles is tough enough, but at least armed with a groove box and/or great collection of loops, your production can have a solid foundation.

At the same time, there's a great convergence where bands that were once oh-so-traditionally rock/jazz/etc. are incorporating more looped elements. As *Mix* assistant editor Heather Johnson shows in our "In the Loop" feature, looping in the studio is nothing new: Roger Nichols was compiling Steely Dan drums on huge endless tape loops back in the '70s, often drafting anyone in the studio to stand by with a pencil and tape roller to help support the long, unwieldy tape as it made its way around the control room and back to the multitrack. Things are so much easier these days!

Of course, looping, sampling and beat boxes aren't for everyone. For a look at the other side, we visited with David Chesky, producer/pianist/recording engineer/owner of audiophile label Chesky Records. Anyone who's never seriously listened to a Chesky release has missed out on a lesson about how records should sound. Audiophile? Yes, but sweet and soulful with an absolute purity of sound that's simply remarkable.

These days, affordable digital has opened the doors of production to everyone, and more often than not, production is a hybrid of techniques and technologies. The only new rules? There are no rules. Find your own style that works for you and go bend some rules of your own.

George Petersen
Editorial Director

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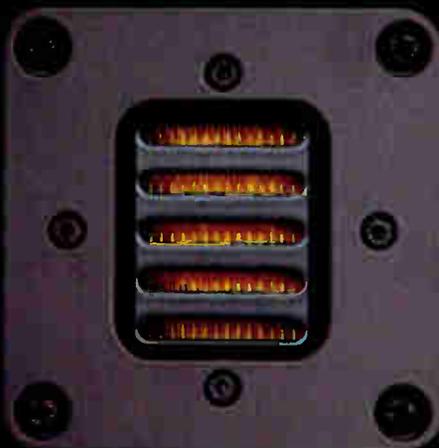
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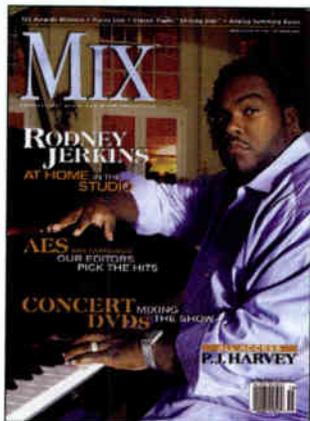
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Letters to Mix



TAKING PROGRESS IN STRIDE

I received the December 2004 issue of *Mix* today and thought I'd drop you a line to express my disappointment in what seems to be the dumbing down of the magazine.

The picture on the front cover of Rodney Jerkins looks like it belongs on a musician or groupie magazine. Where is the nice studio shot you usually have? To me, the true indicator of a magazine's value is the "Letters to the Editors" section. Where was yours this month? Surely there was somebody who wrote you about something you printed last month. You are not being progressive in your editorial policy if you cannot incite your readers to respond through the mail. The "Power Tools" feature seems more like a review than the advanced user tips you usually have there.

Mix has been the leading force in pro audio journalism for almost 25 years. Please don't let such a valuable resource dissipate.

A *Mix* reader since 1979,
Christopher D. Gately

MACKIE HDR24/96 DEMYSTIFIED

I was pleased to read Paul Lehrman's "Virtual Stuff" article ["Insider Audio"] in the December issue. He addresses a number of issues that I've been bringing up for several years now. When it comes to media, I like to refer people to the short story *Time Shards* by Gregory Benford, a tale about a museum scientist who, upon observing a spiral groove on a piece of ancient pottery, speculates that there may be sounds of the potter's shop recorded in that groove. Now that's an archive.

I wanted to clarify a couple of statements that Paul made about the Mackie 24-track hard disk recorders. I worked at Mackie around the time the HDR24/96 was introduced.

Paul suggests that the removable drive, carrier

and data format are proprietary to Mackie. This is not entirely true. A Lian Li RH-58 or RH-40 carrier, available from several retail outlets for \$20 or less, is fully compatible with the external drive bay on the Mackie recorders and is what Mackie uses in its complete package.

For the first year or so of the HDR24/96's life, some disk drives did not have the throughput to work for real-time recording, but any of today's garden-variety ATA100 (IDE) drives work just fine. While the standard motherboard's BIOS only supports drives up to 32 GB, a replacement BIOS from Mackie extends this to 120 GB. Drives in the 40 to 120GB range are regularly available for \$75 or less, and can be easily removed from the carrier for "shelf" storage. No addition to the house needed.

The original release of the software for the Mackie recorder wrote standard .WAV files. The current version writes time-stamped broadcast .WAV files. While, like every workstation, edits are proprietary, the Mackie recorders can render recorded tracks to create one contiguous file per track with all edits and punches, as recommended in the AES document "Recommendation for Delivery of Recorded Music Projects AESTD1002.1.03-10."

Further, it's not necessary to have a Mackie recorder to play back a disk from one, as Paul implies. It is only necessary to have a computer with a matching hard disk interface and the ability to play .WAV files.

In closing, I'd like to put in a good word about analog tape. While it takes a machinist with a pretty good shop and sophisticated electronics to build a good tape playback deck, once you know what a piece of recording tape is, it takes very little reverse-engineering to build something to get some sound off of it. Can you imagine constructing a CD player 200 years from now, having only a CD to work from?

Mike Rivers

[Eds. note: Mike Rivers has written a book that documents Mackie's HDR24/96 and MDR24/96. The Last Mackie Hard Disk Recorder Manual is available from www.cafepress.com/mikerivers/.]

MORE ON MACKIE

While browsing the latest issue of *Mix*, I came across Paul Lehrman's article, "Virtual Stuff," and thought I'd drop you a note to enlighten you about a product that works with the Mackie hard disk recorders. It's called The Amazing Firedock (www.firedock.com). This device allows the Mackie Media M-90 drives, Firedock drives (which are 100-percent compatible with all Mackie recorders) or D.I.Y. drive carriers to be connected

via FireWire 400, 800 or USB 2 to virtually any computer to transfer the files, which are standard .WAV files, into a DAW for editing, archiving or backup. Inversely, one can also transfer files from a DAW to a Mackie recorder, although for the MDR and SDR, which have no GUI, this can be awkward.

Nick Joyce and Busta Drule

Amazing Firedock and NP Recording Studios

COPY-PROTECTION PUNISHMENT

I just purchased Velvet Revolver's *Contraband* CD and can't believe the crap the record industry is now releasing to the public. No, I am not talking about the music content or the music production. I'm referring to the MediaMax CD3 copy-protection software created by SunnComm Inc. that is on this disc. At the time I purchased the CD, I had no idea it was any different from any other CD I had in my collection. There were no obvious labels or warnings on the cover.

I put the CD in my car player and it functioned as it should. The next day, I thought I would simply load my new CD onto my iPod as I had done many times in the past. That's when everything changed. As soon as I popped the disc in my laptop, I was greeted by a message saying, "One moment please, valuable music licenses are now being transferred to your computer from the CD. This process will be completed in a few moments."

Well, I waited and waited and waited for more than an hour and the message never went away. I tried to open the CD in iTunes and the file was garbled due to the copy protection. The more I thought about this, the higher my blood pressure went. I have mastered the most complicated consoles, workstations and actually have a U.S. patent for a mixer design, but I can't get this damned CD (that I paid for!) to copy to my iPod.

How stupid can the record industry get? Not only is it punishing paying customers, but it is loading unknown software onto my computer without my permission and without a warning prompt before doing so. This sounds like class-action material to me.

After doing a little online research on SunnComm and its history, I felt the best solution was to return the CD and get my money back. I hope the record industry gets the message. Sorry Slash, it was a good CD.

Kip Williams, president, Abaya Inc.
Kernersville, N.C.

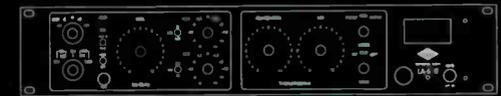
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Front



Rear



Tube Complement: (1)6072A, (1)6AQ5, (3)12AX7A

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The LA-610 brings UA's legendary vintage "all tube" luxury sound into a modern channel strip format by combining the 610 Mic-Pre/EQ/DI section and a T4 Opto-compressor into a single 2U unit with a groundbreaking price. In collaboration with Dennis Fink, one of the original UREI® analog design engineers, the LA-610 was carefully designed to deliver the essence of the "LA" sound but without the costs of being an exact LA-2A component clone. After the preamp section, the LA-610 offers a new T4 optical compressor. The electro-optical detector or "T4 cell", is the very heart and soul of the Teletronix LA-2A. The unique combination of electroluminescent panel and photo-resistors inside the T4 cell are the crucial circuit components that give both these compressors their signature sound.

Technical Specifications

Input Impedance: Selectable
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2.2M Ω or 47K Ω (Hi-Z Input)
Frequency Response: 20 Hz to 20 kHz \pm 0.5dB
Maximum Gain: 40 dB (Line), +77dB (Mic)
Tube Complement: (3)12AX7, (1)6072, (1)6AQ5



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YAMAHA PURCHASES STEINBERG FOR \$28.5 MILLION

Yamaha Corporation had a big present under its Christmas tree: Steinberg Media Technologies GmbH, a former division of Pinnacle; the company was purchased by Pinnacle in January 2003. On December 21, 2004, Yamaha announced that it had acquired 100 percent of Steinberg's common stock and U.S. sales operations, which will be overseen by Yamaha's U.S. sales subsidiary, for a grand total of \$28.5 million.

In the mid-'90s, Yamaha began working with Steinberg by using its computer products and bundled software. In April 2004, Yamaha and Steinberg's cooperative relationship deepened with the Studio Connections initiative, a joint-development project to integrate Yamaha's hardware products with Steinberg's software developments. Future plans for the U.S. market have yet to be determined.

According to Athan Billias, director of technology products for the company's newly formed Pro Audio and Combo Division (see "Current," December 2004), "Yamaha Corporation of America is looking forward to the opportunity to distribute the complete line of Steinberg's cross-platform products in the U.S. market. We believe that the integration of hardware and software, not only at the technical level, but now at the business level, as well creates a unique synergy unprecedented in the industry. In the coming months, with input from Yamaha Corporation of Japan, Steinberg GmbH and the existing U.S. dealer base for Yamaha and Steinberg products, we will be finalizing our future plans for the U.S. market."



Yamaha PACD's Athan Billias

PAD, WSDG ARE HIGH ON EACH OTHER'S LIST



John Storyk (left) and Dave Malekpour in Timbaland's studio located in Virginia Beach, Va.

"recommendationship" at AES, the two firms have worked together on architectural, acoustic, equipment and systems development for Talking House, a high-end, 9,000-square-foot music creation, development and production center in San Francisco, which will feature multiple control rooms surrounding a common tracking room and a custom "hybrid" large-format analog mixing console, as well as projects for New Orleans-based producer David Fortman (Evanescence) and a private studio for Alicia Keys.

Call it fate: When Professional Audio Design was retained by Platinum hip hop producer Tim Mosley and his engineer, Jimmy Douglass, to provide the gear for their new Virginia Beach, Va., Timbaland Studio, PAD founder Dave Malekpour found out that the facility was being designed and built by Walters-Storyk Design Group.

Later, the two companies found themselves working together on Studio Metronome in Brookline, N.H., and then on a private studio for Aerosmith. Since their formal declaration of a strategic alliance of

2005 TEC AWARDS CALL FOR ENTRIES

The Technical Excellence & Creativity Awards nominating panel is accepting product nominations for the 21st Annual



TEC Awards, to be held October 8, 2005, in New York City. To be eligible, products must have been released and in commercial use during the period from April 1, 2004, to March 31, 2005.

Categories are Ancillary Equipment, Digital Converters, Amplifier Technology, Mic Preamplifier Technology, Microphone Technology/Sound Reinforcement, Microphone Technology/Studio, Wireless Technology, Sound Reinforcement Loudspeaker Technology, Studio Monitor Technology, Musical Instrument Technology, Signal Processing Technology (Hardware), Signal Processing Technology (Software), Recording Devices, Workstation Technology, Sound Reinforcement Console Technology, Small Format Console Technology and Large Format Console Technology.

Companies that wish to nominate products should send complete product name and qualifying category, date first commercially available (proof of shipment may be required; beta test sites do not qualify), and a contact name and telephone number.

For Outstanding Studio Design Project, entries must be new studios or rooms, or major renovations completed and in use during the eligibility year of April 1, 2004, to March 31, 2005. Those wishing to nominate studios should send the studio name and location, date completed and name/phone number of the architect(s) or studio designer(s), the acoustician(s) and the studio owner(s).

All entries must be returned by Saturday, February 26, 2005. Send all information to TEC Awards, 1547 Palos Verdes Mall #294, Walnut Creek, CA 94597; fax 925/939-4022; Karen@tecawards.org. Forms can also be downloaded from www.mixfoundation.org.

BERKLEEMUSIC.COM NAMES FIRST SCHOLARSHIP RECIPIENTS

Berkleemusic.com, the online extension of Berklee College of Music, awarded five musicians with its first online music scholarship program, which offers six music courses and required textbooks for up to two years of study.

Arooj Aftab (Steve Vai Scholarship) was born and raised in Pakistan and is a self-taught guitarist in a culture where opportunities for music study, especially for women, are severely limited. She is planning to use her education to develop her songwriting skills and ultimately change the way that female musicians are perceived in her native country.

Monica Orth (Patty Larkin Scholarship)—a resident of Lowell, Mass.—aspires to write and produce electronic dance music. She began working on her first music project in October 2002 with no training. Soon after, Orth began taking drum lessons to learn about rhythm and

enrolled in piano lessons to gain a more complete understanding of melody and harmony.

Jose Luis Revelo (Alf Clausen Scholarship), a native of Colombia, hails from Jersey City, N.J., and creates jingles and scores for top music production houses in New York City. He hopes to open his own music house in New York, where he will create music for commercials, scores for television and film, and songwriting and production for Latin artists.

Actively involved in the South African music industry for many years, 19-year-old Timothy Kroon (Steven Tyler Scholarship) is finalizing his first solo project and plans to incorporate engineering into his repertoire.

Brett Richard Keintz (Tom Snow Scholarship) plans to use such online courses as "Record Business 101" and "The Future of Music and the Music Industry" to help develop a future music industry business model: a record label, an online music company or an up-and-coming music technology company.



Arooj Aftab



Monica Orth



Jose Luis Revelo

CIDER MOUNTAIN OPENS IN IDAHO



Chris Phillips (standing front right) with The Explosion

Recording engineer/producer Chris Phillips fled L.A. to build his dream recording facility, Cider Mountain Recorders, located just north of Coeur d'Alene, Idaho. Designed by Chris Pelonis, the recording retreat offers two control rooms (Studio A: recently installed API Legacy Plus analog console; Studio B: Trident TSM console; both offer Pelonis Signature monitoring systems), an editing suite, multiple ultraflexible recording spaces, a large selection of vintage recording gear and instruments, a healthy stock of mics, Pro Tools|HD, Studer recorders and a 1901 Steinway 9-foot concert grand piano.

According to Pelonis, "At Cider Mountain, we were able to create a generous, spacious tracking room with very high ceilings and a really involved trapping and diffusion system."

Cider Mountain recently hosted Virgin recording artists The Explosion, whose producer, Jason Carmer, is also a fan of Pelonis-designed rooms and speakers. "[Carmer] said that our live room was by far the best-sounding room he's ever tracked in, and he's been in a lot of studios," Phillips enthused.

ON THE MOVE

Who. Tom Roalkvam, BSW VP of sales
Main Responsibilities: all aspects of sales and marketing

Previous Lives:

- February 1996-present, numerous sales positions at Broadcast Supply Worldwide, with most recent as VP sales
- November '93-February '96, Fairpoint Audio distributive marketing director
- January 1984-November 1993, general manager of Puget Sound Audio

On making the leap from musician to the business world: I was gigging and working odd jobs. I was fortunate to land a job at Puget Sound Audio and found that while I loved playing, I also really enjoyed the business world. The one thing in my office that is most like my personality is... my laptop computer—there were compelling arguments for the tape dispenser and my paper clip holder.

Currently in my CD changer is...Mozart's *Don Giovanni* and *Coronation Mass*, Orff's *Carmina Burana*, Cannonball Adderley's *Somethin' Else*, Dvorak's "Ninth Symphony," and Bill Evans' *Waltz for Debbie*.

When I'm not in the office, you can find me...Home with my wife and daughter or mountaineering in the Cascades or Olympic mountains.



SOUNDLAB GETS A FACELIFT

Disc Makers recently upgraded its in-house mastering facility, The SoundLab at Disc Makers (www.discmakers.com/music/soundlab), to include SADIe and Sonic Studio workstations and loads of digital and analog outboard gear. Disc Makers' Jon Marc, who has designed and consulted on studios for DJ Jazzy Jeff, NBA player Rasheed Wallace (Direct Hits Studio) and former NFL player Blair Thomas (Excalibur Productions), chose Dynaudio M3 monitors and placed them on 1,000-pound concrete blocks coupled to

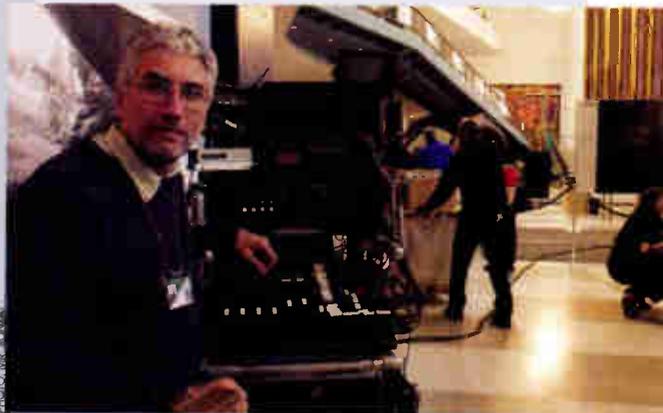


the building's foundation for accurate bass reproduction.

"The outer walls contain three completely sealed layers of drywall with a middle resilient channel for optimum sound isolation and bass absorption," Marc explained. "We designed a custom absorptive interior skin for the room with soffitt-integrated bass traps that removed any parallel surfaces, eliminating flutter echo and other unwanted artifacts. The walls were then outfitted with custom-designed curved-wood diffusion panels that were added to the sides and back of the room to produce desired reflections to the sweet spots and improve spatial imaging."

According to Disc Makers' audio engineering manager, Paul Elliott, "The atmosphere and acoustics definitely went up a notch. With a flat frequency response down to 50 Hz, the new room and equipment allow us to be just that much more effective during our mastering sessions. We can trust our speakers and ears a little bit more and make better decisions on how to effectively convey the project's message."

SANKEN HELPS OUT 'THE INTERPRETER'



For production sound mixer Danny Michael, who recently completed work for *The Interpreter*—due out this month—filming at the United Nations was quite an undertaking. "We filmed in the General Assembly and were even allowed into The Security Council for half a day. We had to work quickly and didn't have much of a margin for error, so everything had to work flawlessly."

Michael used a combination of Sanken microphones for the project, including the CS-3e short shotgun, which he first encountered while working on *The Stepford Wives*. "The beauty of the mic is that it rejects the low-frequency rumble of the surroundings, while maintaining a pleasing tonal quality when recording the human voice." Other Sanken mics employed included the COS-11s lavalier and the CUB-01 boundary mic.

INDUSTRY NEWS

Bringing in experience from audioEngine and Photomag, mixer **John Grant** joined **Headroom Digital Audio** (NYC)...Focusing in on **Digidesign's** (Daly City, CA) new VENUE live sound console are **Ken DeLoria**, worldwide director of live sound sales, and **Mike Case**, European live sound sales manager, who will be based out of Pinewood, UK...**Lexicon Pro** (Sandy, Utah) appointed **Randy Neiman** to market manager, recording and broadcast...**Alejandro (Alex) Gomez** joined **Telex Communications'** (Burnsville, MN) export sales team as sales manager for Latin America and the Caribbean...**Meyer Sound** (Berkeley, CA) promoted **Rachel Archibald** to director of marketing and added touring sound vet **Don Pearson** to its staff of education trainers as a technical seminar instructor...New distribution deals: **Fault Line** (Berkeley, CA) is now representing **Architectural Acoustics** (Meridian, MS) and **MediaMatrix** in Northern California; **TransAudio Group** (Las Vegas) is handling sales, marketing and distribution in the U.S. for **Mercury Recording Equipment Co.** (Hayward, CA); **Sennheiser USA** (Old Lyme, CT) is the exclusive distributor for the **Australian Monitor** (Sydney) Installation Series; **M-Audio** (Los Angeles) announced its worldwide distribution for **Wizoo** (Bremen, Germany) and **GlareSoft** (Pittsfield, MA); **Inter-M Americas** (Chester, PA) appointed **Joe Desmond** and **Associates** (Rohnert Park, CA) to oversee pro, commercial, retail and A/V products in Northern California and northern Nevada, while **Shaeer Media Solutions** (Pikesville, MD) will handle sales in southern New Jersey, Delaware, Maryland, Virginia, Washington, D.C. and portions of Pennsylvania; and **Jansen Professional Audio and Lighting** (Auckland, New Zealand) will distribute **SLS Loudspeakers** (Springfield, MO) in that country.



John Grant

Splash



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Music Awards

2004

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Sound On Sound review July 2004

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NOTES FROM THE NET

HE'S BACK!

Founders Shawn Fanning—yes, *the* Shawn Fanning of Napster fame—Jordan Mendelson and Ron Conway have launched SNOCAP (www.snocap.com), which provides a database platform that can be licensed by record labels, musicians or other copyright holders to manage the sale and distribution of their music. The company recently struck a deal with Universal Music and is in talks with other major labels.

"There are some good authorized online music services, but they have limited content and a comparatively small number of users," commented Fanning. "There are unauthorized services that have content and users orders of magnitude higher, but the service they provide is inferior and they are at odds with rights holders. SNOCAP is the means to bridge that divide for the consumer."

www.RolandUS.com/musiceducation: Music technology educators can search for fundraising tips, tricks and tools to help locate and obtain funding for their programs, as well as peruse school spotlights and curriculums.

EX'PRESSION SUITE DEDICATED TO HENDRIX



From left: Peter Laanen (Ex'pression Center for New Media CEO), Narada Michael Walden, Jim Rietzal, Eddie Kramer and Vernon "Ice" Black

On Friday, December 10, 2004, Ex'pression College for Digital Arts (Emeryville, Calif.) hosted a gathering of recording industry notables—including producer Jack Douglas, NARAS S.F. executive director Merl Saunders Jr., engineer Eddie Kramer, Narada Michael Walden and bassist Jim Rietzal, among others—to dedicate The Jimi Hendrix Studio, the school's former Neve room.

Kramer cut the red ribbon, and the aubergine-hued room was packed with guests who enjoyed a Hendrix-inspired jam featuring Rietzal, Walden on drums and Vernon "Ice" Black on guitar. The room features a 48-channel Neve VR with Martinsound Flying Faders and recall, an Otari MTR-90, a Meyer Sound monitoring system and Yamaha NS-10 near-field monitors.

—Breean Lingle

BOOKSHELF

Behind the Seen: How Walter Murch Edited Cold Mountain Using Apple's Final Cut Pro and What This Means for Cinema by Charles Koppelman is now available from Peachpit (www.pearsoned.com, \$39.99).

In conversations with Koppelman during post for the movie, Murch talks about the transformation of filmmaking from its late-19th-century origins to today's digital world, as well as speculates on the role of digital technology in the future of cinema.



XEPA DIGITAL HAS FIRST BIRTHDAY



In only one year, XEPA Digital (Iron Mountain, Pa.; www.xepadigital.com) restored thousands of projects for Universal Music Group and Bertelsmann Music Group, and has worked with content from artists such as Lena Horne, Harry Belafonte, Public Enemy, Nine Inch Nails and many more. The company was founded by entertainment industry veterans Ken Caillat, Edwin Outwater and Claus Treby (pictured) to preserve and protect historic rich media assets.

"There is no doubt that storing music elements in a secure underground facility makes monumental sense from a security environment and cost analysis point of view, but how do you gain back the speed, accuracy and metadata crucial to having the music assets locally stored?" questions Randy Aronson, senior directory of UMG's Vault Service. "Xepa has been our solution. They have scanned, mastered, created digital backups and sent audio and video files to our clients, consistently beating our old metrics when the sources were stored in the L.A. and N.Y. areas."

This year, Xepa Digital plans to step up video transmission services to assist the newly announced UMG Music TV project and TV broadcast facilities nationwide, as well as develop a grant preservation program that will be specifically tailored to public collections/libraries and other historic rich media collections.

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COMPLETE RECORDING SOLUTION

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Supersonic Studios

By Heather Johnson

Hybrid has become a 2005 buzzword, what with auto manufacturers from Honda to Toyota sending more eco-friendly vehicles into the fast lane. Now, with the opening of forward-thinking facilities such as producer/engineer Gustavo Celis' Supersonic Studios (www.supersonicstudios.com), the recording industry has its own hybrid model: comparably efficient, but with considerably more legroom than a Prius or Insight.

Based in Miami and launched late last year, Supersonic combines the virtually limitless capabilities of a digital console/workstation combo with the unsurpassed sound of vintage and contemporary outboard gear. Celis isn't the first engineer to integrate in- and out-of-the-box equipment, but his studio was born from this idea and is one of the few to take it to such an extreme level.

"I was working out of my house and collecting [analog gear] little by little," says Celis, who has three Grammys and albums by Ricky Martin, Mandy Moore, Shakira and the film *Chicago* (which earned a Best Sound Oscar) to his credit. "I also do a lot of mixing in Pro Tools and found that it was really easy to use both."

Most of his inventory sat dormant while he worked at other studios, so he decided to build "a world-class facility that I could use for myself, but if I weren't there, it could be rented out."

Celis hired Toronto-based Pilchner-Schoustal to design his new 1,350-square-foot space, which began a two-year construction process (built by studio manager Jamie Graf; Geoff Goddard, fabric fitting) that was worth the wait, considering it allowed Celis to acquire two newly released products: the Digidesign ICON and Genelec's new 8000 MDE Series monitors. "The hybrid idea basically was incomplete without a console like the ICON," says Celis. "It seemed like the room was designed for that console from the beginning. But it was actually based around a modified ProControl."

The 32-fader ICON D-Control console (with 7.1 monitoring) resides in Control 1, along with a Pro Tools|HD7 Accel with 64-bit expansion chassis, three 192 and six 96 I/O interfaces, DigiDelivery LT and ample Pro Tools plug-ins and other accessories.

Custom racks to either side of the console



PHOTO: KEN NELSON



Gustavo Celis

Supersonic's Live Room yields tones ranging from sweet to reflective.

house Celis' extensive outboard arsenal, all normaled to the Pro Tools configuration. "It's a super-luxurious setup," he says. "There's a whole 192 interface just for digital reverbs. Everything has a dedicated I/O labeled by name so you don't have to know, for example, that Neve #8 is connected to interface C, track 7. That's too much math when all you need to do is EQ a vocal. If you need a compressor, you call it by name. It's idiot-proof."

Supersonic's inventory includes vintage Neve mic pre/EQs (1073 and 1084s) and other key pieces from SSL, API, Earthworks, Universal Audio, Manley, Focusrite, Chandler, dbx, UREI and Teletronix, among others. The main monitor system employs a pair of Genelec 1034Bs with a 7073A sub, while the surround system features five Genelec 8050As—upgraded from a set of 1031As—and a Genelec 7070A LSE Series Active Subwoofer. The room also contains a pair of Yamaha NS-10s and SLS/Event 20/20, with Bryston 4B SST and Hafler 2500 amps. "The monitoring system, design and acoustics are so well-implemented, it feels like everywhere else the music is in black and white, but here, it's in full color," Celis says.

Though Supersonic was designed with surround mixing in mind, it's amply suited for tracking; mic offerings include a Brauner VM1 Klaus Heyne Edition and numerous classic models. Its 16x25x14-foot Live Room and 6x9x10-foot Iso 1 feature maple floors and sight lines to Control 1 and Control/Iso 2, which is scheduled for a mid-2005 comple-

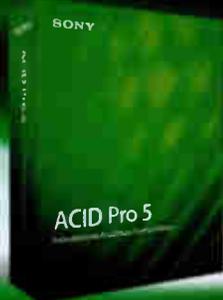
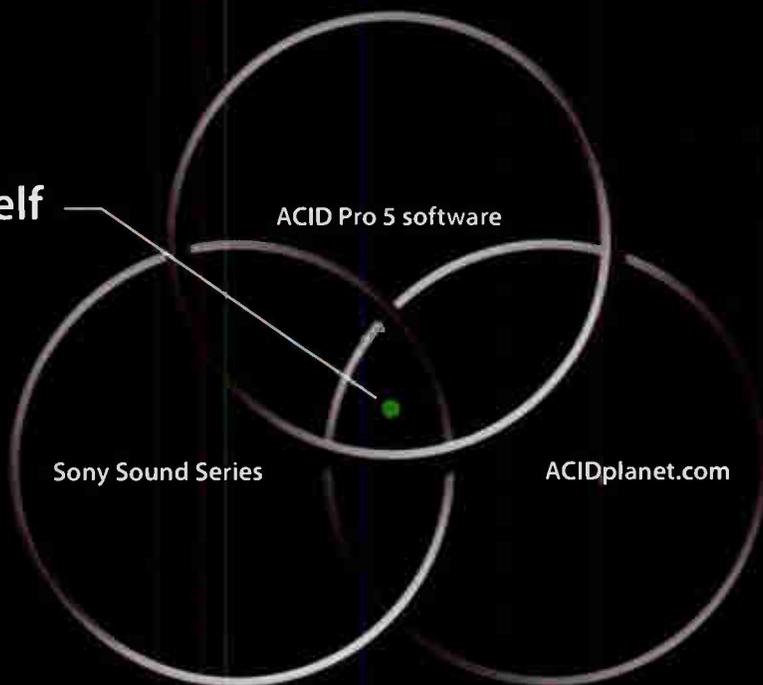
tion. A hybrid within a hybrid, Control/Iso 2 will contain a Pro Tools rig and 5.1 setup identical to Control 1, a digital control surface (to be determined) and various outboard gear, and can serve as either a second control room, edit bay or iso booth.

Lounge/Iso 3 also serves dual purposes: In addition to its comfortable furniture, a fully loaded I/O panel and data port enable clients to plug in a mic, Pro Tools rig or laptop for recording, editing or relaxing. All rooms, lounge included, embody a comfortable yet modern design that's a result of wife Claudia's interior design firm, Modernet Inc., and Pilchner-Schoustal's use of natural materials in their architectural plans. "The space is devoid of artificial surfaces," says Martin Pilchner. "The idea was to use simple planes with subtle horizontal and vertical cues derived by the juxtaposition of surface finishes and lighting."

Just as each room serves multiple purposes, Supersonic will serve Celis' own projects, such as the new acts he's developing for his forthcoming record label, and major-label projects such as Martin's new album and Juvenile's latest, *Reality Check*, which was mixed at Supersonic in stereo and 5.1 by Dave Junco.

"This is the most simple studio I've ever seen, yet it's the most powerful one," Celis concludes. "You can recall a tremendously complex mix in seconds because the I/O interface is normaled to the gear. If that's not the long-term future, at least it's the temporary future of bringing it all together." ■

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Word Radio History

Where Did Digital Go Wrong?

Can We Make It All Right?

A lot of my gear is digital now. Duh. By “a lot,” I mean everything other than a few old analog sweethearts that I can’t let go of.

I like the convenience, the power, the prices...I like what you like. None of it sounds as good as the best of the ancient analog stuff, but it gets closer every year, and it is all totally noiseless. And that leads us directly into the point.

Every bit as much as I like what dancing ones and zeroes can do for me, I dislike conversion (unless it’s a small-block V8 shoved into the hole that a lame 6 used to occupy). We all know that every D/A and A/D conversion our music goes through leaves a signature—some amount of violent scarring. It only takes a few conversions to destroy any feeling of space or air in a digital signal. And given how incredibly difficult it is to even develop a crisp but warm feel in the digital domain, it certainly seems self-defeating to destroy it with careless use of the borderline technology that allows our music to pass between our two fundamentally incompatible worlds.

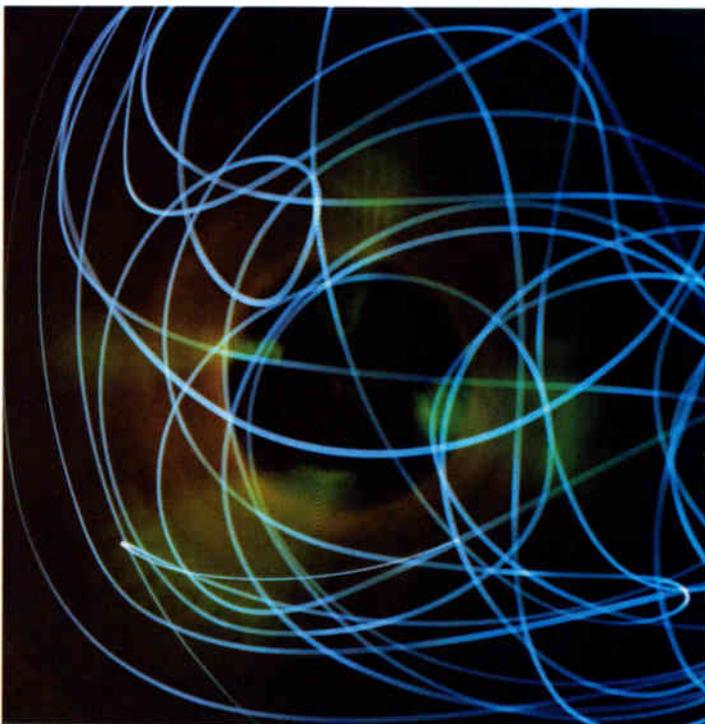
Primarily to avoid conversions in an already digital world, I replace every bit of analog gear as soon as I discover acceptable digital equivalents. And in the interest of controlling Hums ‘N Buzzes, I will always choose gear with optical I/O. The difference is night and day. Example follows.

THE INFINITE WHITE ALBUM

A while ago, I got an Airport Express. If there are any of you that do not know this device, it is a little white box (with the strangest green LED) that receives data on high-speed WiFi and has, among other things, a single mini-jack that outputs both analog and optical—a common trick these days. By the way, if you get a new toy that has this type of jack, you *don’t* need to replace your expensive optical cables. Radio Shack has adapters for a few dollars that convert your existing Toslink cables to this new and most decidedly fragile standard.

So anyway, I hooked the Express up to my living room audio system, opened my laptop and started streaming wireless music. Very nice, but...

I had not discovered the little adapters at that point,



so I was feeding my amp analog. The Express converters are actually respectable, so no real complaints there, but there was a constant faint buzz. Dreaded ground loop. When I did find the adapters, I replaced the analog link with an optical one and instant pristine perfection, such as it is.

Granted, this example sublimates directly from analog to optical, skipping copper digital, but I assure you that copper digital links will ground loop and buzz. Any time you have two or more devices with their own AC power hooked together with any sort of metal, you are asking for looping.

MIRANDIZE ME, I’M SPILLIN’ IT ALL

Now for a confession. More than one of my audio paths is now totally digital. No, I mean it literally—totally digital. I know it seems an unnatural act, but I am actually using a couple of the newest all-digital power amps.

I know, I know. It started when I found a nice all-digital preamp with lots of optical inputs. All my synths and drums are digital out, and some of the ones with copper links were buzzing until I found little boxes to convert them to optical. Now everything is glass, everything is noiseless and everything is bused into a digital preamp, straight into a digital power amp and to the speakers.

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The power amp is a bit cold and a little harsh when pushed hard, but noiseless and pretty clean under my usual real-world MI conditions. By the way, I do still use analog self-powered Meyer speakers in the control room.

But I have another problem. I am one of those guys who EQs his monitors. I am sensitive to the *sound* of speakers, and almost everything made has at least one distracting artifact. My general approach is to get the best gear I can find, acoustically treat the listening area using proper materials and construction techniques, and finally resort to monitor EQ to smooth out any remaining obnoxious resonances. I know it's wrong, I know the room itself

And so my dilemma. I am unwilling to block out my living room view of the stream and the deer. I am unwilling to force my tunes through tortuous D/A and A/D conversions. I am unwilling to use copper links and accept nagging little buzzes. I am unwilling to use IIR and turn it all to maple syrup. I understand that I am making it difficult.

So it seems I am currently running no monitor EQ on either all-digital system.

I checked online one last time before I sent in this column and found several digital EQs. Well, sort of. Some actually revealed in their fine print that they were actually *analog* EQs under digital control. Their manufacturers felt that this entitled

If, for whatever reason, you find yourself with
a totally digital system and you want to
flatten out a bump or two, what do you do?
The answer is: I have no freakin' idea.

should be worked on until perfection is achieved, but have you ever seen what an all-glass living room looks like after it has been successfully controlled? Well, it ain't all glass anymore.

So, as not every room is a control room, monitor EQ is a way of life for me. It is worth mentioning, by the way, that the only place that I do *not* use any monitor EQ is in my studio, as there I had *complete* control over structure, materials and dimensions.

IS ITAL CLEAR YET?

By now I assume you see where we are headed. If, for whatever reason, you find yourself with a totally digital system and you want to flatten out a bump or two, what do you do? The answer is: I have no freakin' idea.

This is as good a place as any to explain exactly why it is so difficult for me to find a solution. While IIR digital EQ and its unfortunate phase shift and group delay error is okay for certain effects like mimicking old-time mush, it is desperately lame for real EQ—EQ that you don't *bear*, but gets the job done. IIR, being a model of analog, is no better than analog.

No, to attack specific problems, to actually *equalize*, you need to control energies at specific frequencies without destroying the phase or time relationship of those frequencies. Only properly written FIR EQs can do that.

them to call the products digital EQs. Sad. No, sleazy. And to make matters worse, these units have digital I/O! That is ridiculous!

Others actually are digital but have no optical I/O as far as I can tell. And of course there seem to be no FIR units at all.

It might be that I am the only person in the world who feels this is important—it has certainly happened before. Or maybe these things are out there and I haven't found them yet. So if any of you know where such devices may be found, let me know. I have a 600Hz bump that is attenuating my love of music by 6 dB.

And think of what little dedicated inline FIR EQ boxes could be used for. Hang one on your synth to shape it to exactly what you like with no mush or slur. Hand one to your virtual drum kit to bring up the bottom while keeping it tight. Each set of monitors could have its own.

Once set up, you would almost never change them, so they don't even need interfaces. You could program them with your PC and cut them loose.

I just can't figure out why these things don't exist. Maybe they do and I'm too spaced to find them. I *have* been hit on the head pretty hard recently. So. Readers. Please help me find these toys. Somebody. ■

SSC found a 600Hz beanbag chair and his wife isn't loving it. Please help him get rid of it.

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A Talk With John Chowning

Extreme Vibrato and Other Accidental Flashes of Genius

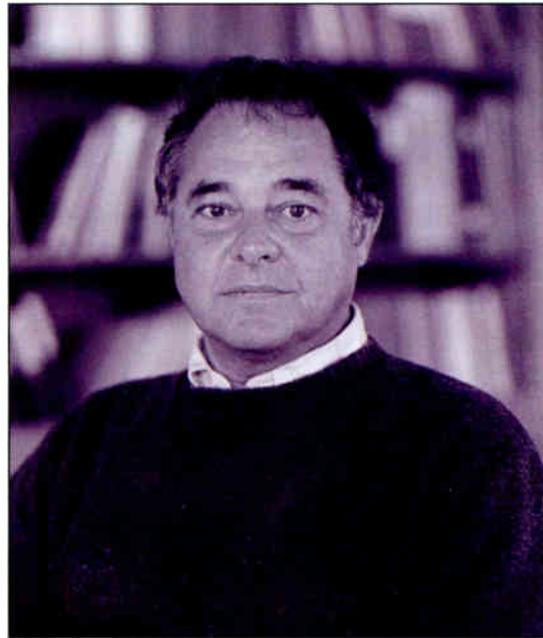
John Chowning pretty much sleeps when he wants and works when he wants. That is why when I'm talking to him at 10 a.m. East Coast time—and he's on the West Coast—he's been up and composing for about four hours already. "Now that I don't have institutional obligations, I find it's really great," he says. "I remember hearing Buckminster Fuller give a talk about his lifestyle, and he said he'd work all the time, and when he was tired, he'd just take a nap. So I was inspired by that. Of course, Fuller says it's really hard on the rest of the family."

Chowning, for those of you who just got up, was the inventor of FM synthesis, the computational technique that ushered in the era of digital synths, MIDI, desktop music production and much of what we've all been doing for the past 20 years. At the age of 70, he's now a professor emeritus at Stanford, where he was on the faculty for more than 25 years, which means he doesn't have to show up for classes anymore. So what's he doing? He's devoted himself full-time to what a great many of us would like to be doing: composing with all the neat new tools he and those who learned from him helped develop.

Chowning was the founding director of the Center for Computer Research in Music and Acoustics (CCRMA, pronounced "karma") at Stanford, one of the most successful think tanks for music technology in the world. Some of the most important research in music synthesis and digital signal processing that we use today emerged from there, and among the many major figures who worked there were Andy Moorer, developer of the legendary SoundDroid for Lucasfilm and founder of Sonic Solutions; David Zicarelli, writer of Opcode's original DX7 patch editor and now head of the wildly innovative software company Cycling '74; and Julius O. Smith, creator of what was to become known as physical modeling synthesis.

I ran into Chowning at the recent AES in San Francisco, where he was on a terrific standing room-only panel about the early days of electronic music in the Bay Area. A question came up from the audience (okay, it was me) about the future of electronic musical instruments, and his answer was short but highly thought-provoking. So I went up to him afterward and asked him if he would be willing to elaborate on it. A few weeks later, we had a fascinating 90-minute phone conversation covering that and many other subjects. So many, that this column is going to be in two parts.

Chowning was always a musician, never a scientist. He grew up listening to the big band music of the World War II era and started violin lessons in public school at the age of 7. A few years later, his junior high school band needed a cymbal player who could read music, so he became a percussionist. He served in the military and went to the U.S. Navy's music school where he learned



John Chowning, circa 1986

CHUCK PANTIERI/STANFORD NEWS SERVICE

jazz. "It was an amazing place during the Korean War," he recalls. "The Adderley Brothers were there and a future member of the vocal group The Hi-Lo's. There was a very high level of playing."

He then went to college on the GI Bill and studied composition, which he followed up with three years in Paris studying under the legendary Nadia Boulanger, teacher of generations of composers from Aaron Copland to Quincy Jones. In Paris, he heard, and was seduced by, electronic music for the first time, thanks to a concert series produced by Pierre Boulez. "It wasn't Boulanger's music," he recalls. "She was more fond of Stravinsky and the romantic composers, but she had a fascination with it—Boulez in particular—and she encouraged us to go." There he heard many of the great pioneers of the early electronic era like Luciano Berio, Henri Pousseur and Karlheinz Stockhausen.

After Paris, he went to Stanford for graduate study, but there was no electronic music there then. That would soon change: "My second year there, someone gave me an article from *Science* by Max Mathews who was at Bell Labs. I tried to understand it. It made this fantastic claim that any sound that could be perceived could be produced by a computer. So I went down to the computer science department and took a course in ALGOL [one of the first computer languages]. I contacted Max, who was at Bell Labs, and visited him. He gave me a stack of punch cards, which was the BEFAP compiler [Bell Labs' custom

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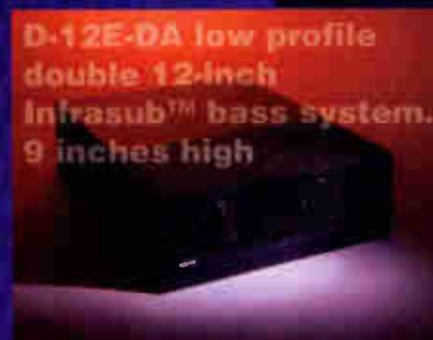
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World Radio History

INSIDER AUDIO

FORTRAN language] for the IBM 7094, which you needed to use Music 4, the music composition software that was available. I didn't understand much of what he told me, but then I read an article by James Tenney in Yale's *Journal of Music Theory*, and after that, I understood everything in Max's article.

"So I had this stack of cards, and I was wondering how I was going to get this to happen," he continues. "One day, I was standing outside the computer center and this student walked up whom I knew, since he was the tuba player in the orchestra where I played timpani, and he asked me if he could help. That was David Poole, who was a sophomore math major, and he was hanging around what was going to someday be the A.I. lab. He taught me everything I needed to know. Among other things, he figured out a way to transfer the computer sample data in a dual-buffer arrangement so it could be output as a continuous stream. Up to that point, it was a two-step process: At Bell Labs, they had to write the output to a computer tape and then send it to a separate D-to-A converter. So this was probably the first online [real-time] computer music system."

This process of going around to various sources until he could get his hands around a concept came to define Chowning's development. "I thought maybe I should go back and take some math," he says. "So I enrolled in Algebra A; I think they called it Bonehead Algebra. I was already 30, 31 years old, and my last math class had been in high school. I struggled through it. I understood everything, I just didn't have the capacity to get through these tests in the few minutes we had. I had to beg the teaching assistant for a passing grade. I said to him, 'Imagine you were taking a music course and I asked you to play an augmented sixth chord in the key of A-flat major. Musicians can do it right away. You could figure it out, but it would take some time.' He said, 'Yeah, yeah, I understand.' So he didn't give me an A, but he did pass me. But I decided this was no way to learn what I felt I should know. Finding out answers to the immediate questions at hand was more important, but I needed to find the right person to explain it to me.

"At the computer center, the environment increased the number of timeshare users from eight or nine to 20 or more, and now there were all these people there I could talk to: engineers, psychologists, philosophers, linguists. So I built up an incidental education. If there was something I wanted to know, I would ask the same question of all these people,

—CONTINUED ON PAGE 132



A LOT OF MICS ARE MADE IN CHINA. NONE ARE MADE LIKE THESE.

The sE Electronics story begins with Mr Siwei Zou, a hugely talented classical musician from Shanghai who won a top place at the Shanghai Conservatory and went on to become a highly successful player, conductor and composer. He worked closely with the Shanghai Opera and the Shanghai Philharmonic Orchestra as both conductor and recording artist, with several hugely successful classical hit recordings to his name.



In 1987 he was invited by California Sonoma State University as a visiting Scholar to serve on the faculty. He continued to teach counterpoint and orchestration as a faculty member in the Music Department at the University. He also studied recording technology under Grammy Awards nominee Professor Warren Dennis Kahn.

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in the field of electrical engineering at Shanghai University, Siwei designed, built and tested a whole range of new and innovative products.

Shunning the common practise of western manufacturers re-branding cheap Chinese microphones, Siwei designed and built his own range of microphones which are now manufactured in his state-of-the-art facility in Shanghai, the ultra-modern face of new China. sE Electronics make only their own products, which means dedication to detail in every aspect of performance and styling without compromise.

All sE mic capsules are entirely built by hand. Even the chassis and flight cases are built in-house. In fact when you own an sE microphone you can be confident that every aspect of both the mic and its accessories has had the same unrivalled level of care and passion right throughout its design and manufacture. Even to the level that every single microphone that leaves the facility has undergone a personal listening test rather than simply being put through a machine - and it shows.

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Launched in Europe in 2003, sE Electronics condenser mics are now the number one brand in the UK and the fastest growing microphone brand in Europe. The brand, in its short history, has already won almost every major European award possible for excellence including the Future Publishing Readers Poll 'Mic of the Year' Award. Although sE is a new line to the USA in 2004, both the sE Gemini and Ic15 have already won the coveted 'Mix Certified Hit' Award and the range is fast finding the same unanimous acclaim and passionate following that it has in Europe.

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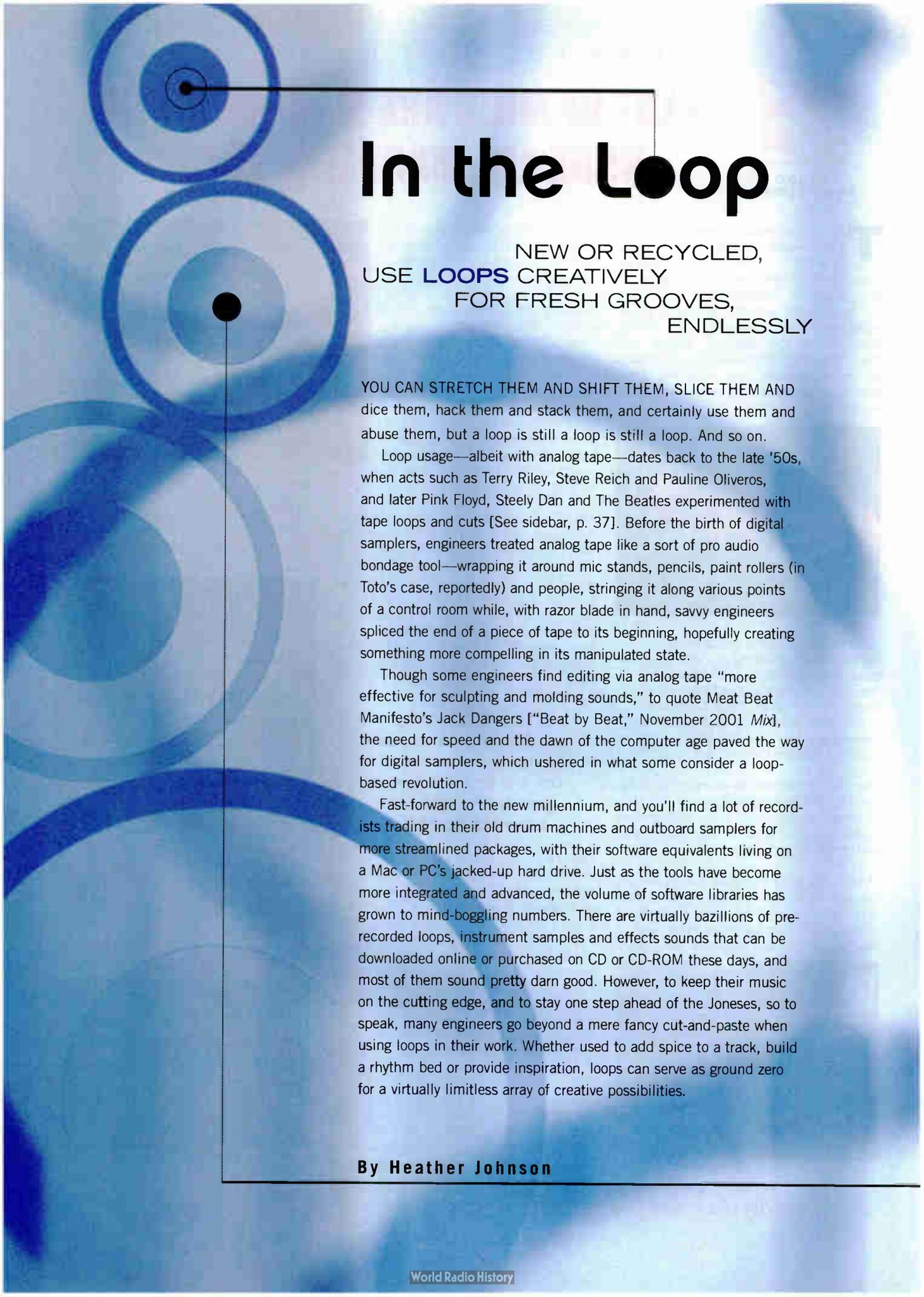


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YOU CAN STRETCH THEM AND SHIFT THEM, SLICE THEM AND dice them, hack them and stack them, and certainly use them and abuse them, but a loop is still a loop is still a loop. And so on.

Loop usage—albeit with analog tape—dates back to the late '50s, when acts such as Terry Riley, Steve Reich and Pauline Oliveros, and later Pink Floyd, Steely Dan and The Beatles experimented with tape loops and cuts [See sidebar, p. 37]. Before the birth of digital samplers, engineers treated analog tape like a sort of pro audio bondage tool—wrapping it around mic stands, pencils, paint rollers (in Toto's case, reportedly) and people, stringing it along various points of a control room while, with razor blade in hand, savvy engineers spliced the end of a piece of tape to its beginning, hopefully creating something more compelling in its manipulated state.

Though some engineers find editing via analog tape “more effective for sculpting and molding sounds,” to quote Meat Beat Manifesto's Jack Dangers [“Beat by Beat,” November 2001 *Mix*], the need for speed and the dawn of the computer age paved the way for digital samplers, which ushered in what some consider a loop-based revolution.

Fast-forward to the new millennium, and you'll find a lot of recordists trading in their old drum machines and outboard samplers for more streamlined packages, with their software equivalents living on a Mac or PC's jacked-up hard drive. Just as the tools have become more integrated and advanced, the volume of software libraries has grown to mind-boggling numbers. There are virtually bazillions of pre-recorded loops, instrument samples and effects sounds that can be downloaded online or purchased on CD or CD-ROM these days, and most of them sound pretty darn good. However, to keep their music on the cutting edge, and to stay one step ahead of the Joneses, so to speak, many engineers go beyond a mere fancy cut-and-paste when using loops in their work. Whether used to add spice to a track, build a rhythm bed or provide inspiration, loops can serve as ground zero for a virtually limitless array of creative possibilities.

By Heather Johnson

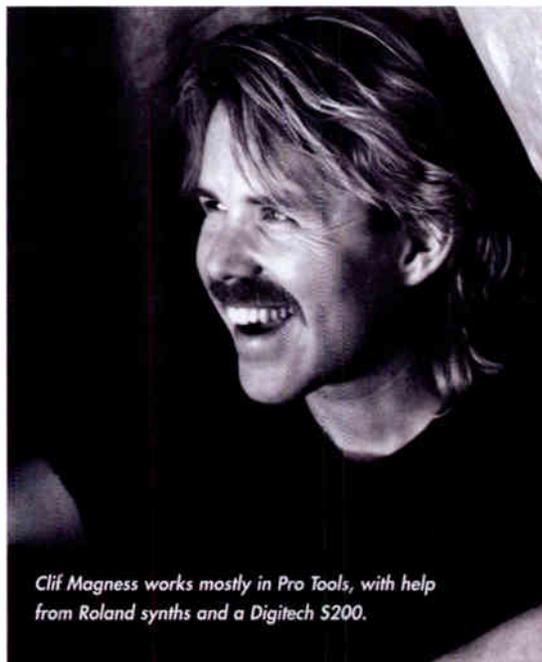
D.I.Y. LOOPS

The most obvious way to ensure originality is to create your own loop library, building a catalog culled from live tracks and samples grabbed from obscure films and vinyl (with clearance); the hum of planes, trains and automobiles; or just about any other random noise that strikes your fancy.

According to producer/engineer/songwriter Michael Bradford (Kid Rock, Uncle Kracker, New Radicals)—who spoke with *Mix* in “Not Just for Dance Music Anymore” in the February 2004 issue—“What makes a song that is heavily loop-based sound human is to have real fills and percussion played over the loop—something to break up the loop’s repetitiveness.”

“The loops can provide what the drummers can’t,” adds engineer, mixer and sound designer Rich Tozzoli, whose credits include 5.1 mixes for Al DiMeola, the Marsalis Family, Flamenco composer/guitarist Romero and Blue Öyster Cult; and music composition and mixing for the CMT Flameworthy Awards, the Spike Channel and Nickelodeon, among others. “I think the best of both worlds is to integrate them seamlessly.”

Tozzoli owns an Apple G5 dual processor with 200 gigs of disk space, filled with his entire loop library, not to mention Pro Tools|HD, Apple Logic, Ableton Live, Reason and, yes, GarageBand. When he’s on the road, he carries a similar setup with an MBox and an Apple G4 laptop. “I cut up various instruments and grooves and store them, broken down by bpm, style and type.”



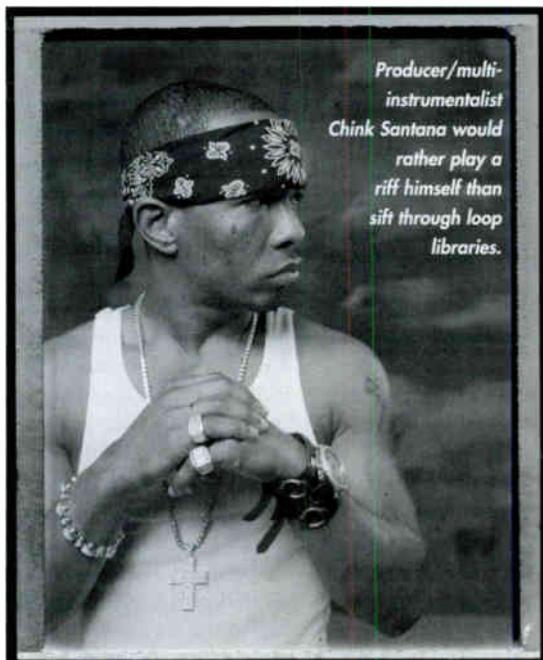
Clif Magness works mostly in Pro Tools, with help from Roland synths and a Digitech S200.

With percussion, for example, Tozzoli will record an instrument specifically for loop purposes; other times, he’ll take an existing live track, chop it up and make a loop out of it. Romero’s forthcoming album, *Pulse*, was heavily influenced by live loops, he says. “Romero’s a world artist and plays with a lot of world percussionists,” says Tozzoli. “When we were tracking, I cut up shakers, cymbals, cajons and various grooves and stored that [into the library]. We combined live loops with live percussion parts and integrated them with Reason and Stylus. It’s that combination of both that gives you the best production value and the most excitement.”

Chink Santana is a multi-instrumentalist and producer who has sped through the ranks from founder Irv Gotti’s Murder Inc. (now The Inc Records, home to Ashanti, Ja Rule, Charli Baltimore and Cadillac Tah, among others) to Gotti’s protégé to producer for A&M/Interscope artists Keyshia Cole and Ms. Dynamite, among others. “I’m very experimental when it comes to just going into the studio and doing whatever the hell comes to my mind,” he says from his New York base. “On Ashanti’s first album, on a song called ‘Over,’ I actually started that song with the drums. I sent a click track from the [Akai MPC-2000XL] to my headphones and just played the drums to the click track. Once I had a good four bars that I liked, we copied and made a pattern out of it in Pro Tools and then I went back and added everything else to the drums.”

Santana does most of his sequencing on the MPC-2000. “I put everything besides my live instrumentation [on the MPC]. If it’s a sample of a kick, a snare, a loop, I’ll sequence it and then I’ll put it in Pro Tools. Once I have that part of the song in Pro Tools, I’ll add everything else—live guitar, violin, strings, bass...anything that I add live I like to add

PHOTO: JONATHAN MANNION



Producer/multi-instrumentalist Chink Santana would rather play a riff himself than sift through loop libraries.

In the Loop

after I have the sequence in Pro Tools."

Like Santana, Clif Magness also plays on many of his productions, including recent tracks for Avril Lavigne, O-Town, The Calling and Kelly Clarkson, but he uses a mix of session drummers and loop libraries to create the rhythmic element. "And anytime I record a drummer for a project, if I need to, I'll use those tracks again in another song, which I've done several times," he adds, stressing that he treats this recycle process as another session gig for the drummer. "I put Josh Freese [A Perfect Circle, Puddle of Mud, Guns 'N Roses] on an O-Town song without him coming into the studio," he says. "I took his performance from one of Avril's songs,

sampled it and made loops out of it. The whole drum performance is Josh sampled, and I paid him a session [rate] without him really being there because it wasn't an 'approved' loop. For instance, I use a lot of BT loops, which are extraordinary. His library is amazing. And when you buy a library, it's understood that it's to be used without licensing or anything, but when somebody comes in and plays drums on a session and you use their stuff again, they need to be paid union scale."

Of course, loops can be created from other instruments, as well. "I took a lot of Aaron [Kamin, The Calling]'s guitar parts, soloed them and put them through the [Line 6] Echo Farm plug-in, and made echo loops out of them," says Magness. "It sounds like another instrument because of the regeneration of the echo on a harmonic. You can make an eighth note, a dotted eighth or you can do both so you get a polyrhythm and it's all a guitar loop. You can do that with piano, too."

LOOPS FOUND UNDERGROUND

With a little ingenuity and smart sleuthing, engineers can find source material for original-sounding loops lurking in all sorts of unusual corners. Those dusty old funk and soul albums hiding in the closet may contain a wealth of sample-worthy sounds (provided you obtain clearance), while our natural and man-made environments—from the chug of a railroad train or a helicopter, to the homeless guy on the street—can yield endless possibilities.

One of the kings of vinyl manipulation, Beastie Boys' resident DJ Mix Master Mike, found samples from old B movies, a UFO documentary, AM radio IDs and even old jingle records to create his self-described "hip hop instrumental" solo album, *Bangzilla*. Though he fills the album with manipulated samples, beats and a symphony of skillful turntablism, he uses very few loops. "I try not to use loops. I try not to play that out. When you're making loops, you don't get that *live* feel for music," he says.

One of the few loops he does use provides a segue between the songs "Scanner 13" and "Burn Center." "It's a two-bar drum loop into a two-bar flute loop," says Mike, who works primarily in Pro Tools on an Apple G4 laptop, surrounded by an Ensoniq ASR-10 drum machine, rows of vintage keyboards and stacks of vinyl. "This specific [flute loop] I got from an old-school Italian cop film. I pulled like a two-second snippet and repeated it a couple times. It's always cool to grab little vintage pieces of music that you know for sure people will bug out on."

Santana found inspiration from Isaac Hayes for Ashanti's "Rain on Me." "I took four bars of the [Hayes] record [The Look of Love] and then I took the bridge and we used that for Ashanti's B section," he says. "But I added [my own] drums to it—subs, fade-away, rim shots, cymbals—and guitar. He had some horns in the record, and I chopped the horn stabs and placed them in the bridge so we could EQ it differently from the rest of the sample because we wanted them brighter than the way he had it. We also changed the level to actually turn the volume up. So whenever you hear anything that I loop or a sample that I use, most of the time it would be an interpolation; I would go and replay every part over so I could have it the way that I want it."

Tozzoli, on the other hand, assembled a collection of sound design elements into a loop library. "I'd record subways, radios or downtown Manhattan or something and I'd loop elements of train wheels or something like that," he says. "On one piece, I used the

Loop-Based Production the Old School Way

As co-founder of R&B/funk group Chic, multi-Grammy-winning producer/guitarist Nile Rodgers and partner Bernard Edwards gave Warner Bros. its biggest selling single of all time with "Le Freak." Lurking on the flipside of that 45 rpm Number One was "Chic Cheer," one of many Chic songs to incorporate ¼-inch analog tape loops. The song has since been relooped for Faith Evans' single, "Love Like This." Rodgers says that "Chic Cheer," recorded in 1977 at The Power Station in New York City, incorporates "probably one of the coolest, most subtle ways we used loops."

"The Rolling Stones were in the studio next door making [*Love You Live*]," he continues. "We were looking for the right crowd, and instead of using a sound effects record, we wanted to get something that was uniquely ours. We went into the studio after they left and recorded their audience cheering [with the engineer's permission] and made a really, really long tape loop. So even though the Stones were using it, you couldn't tell it was the same crowd because we made it so long. It was going around the studio quite a ways; we had to string a bunch of mic stands together."

Rodgers explains that mic stands or some other stationary object placed around the room help keep the tension on the tape even so that it has the same amount of tension as



it would on the reel. If it's a long loop, that tape can stray pretty far. "We had one going outdoors because the loop was so long," he adds. "Everything was going great. We're making the record and we're grooving and I'm jamming along with it and then all of a sudden, the loop starts to wow. It started raining, but we were inside and didn't know the tape was getting wet. Talk about your session coming to a screeching halt. Except that it wasn't quite screeching, it was more like a slurring halt."

Rodgers is currently finishing a new Chic album featuring the single "Let's Bounce," which debuted in the film *Rush Hour 2*.

—Heather Johnson

wiper blades from a Conrail train—there's a certain rhythm to them. You can put that into a sampler, pitch it, loop it and you have an absolutely unique sound. Then you can add certain live instruments over it and it would just be this beautiful rhythm bed that couldn't be found otherwise."

LOOP A LOOP

So how do you build something original from a loop that someone else created and many more have already used? "It helps to change the tempo or pitch, which will create a new feeling," says Tozzoli. "Apple Loops—one of my new creative wells—are especially good for that. They are designed to flawlessly transpose and change tempo, so they can keep your recordings fresh.

"I've also been really into FXpansion's BFD drums and Spectrasonics' Stylus RMX," he continues. "Each has its own ability to creatively 'improvise' by offering slight feel changes—certainly where loop production should be headed in the near future. That becomes invaluable when doing longer loop-oriented pieces, such as four-minute songs versus a 30-second commercial. Also, both are expandable, which is important, as it provides many more possibilities than a closed-ended system."



Rich Tazzoli uses both live instruments and loop libraries in his music and commercial productions.

Both Tozzoli and Magness like to layer various loops together in a mix. "Loops love to be in the company of other loops," says Magness. "It's like a drum circle of guys on the beach—you just keep layering. And the energy increases without speeding up [the track]."

"I like to layer loops of the same bpm and use EQs to filter each one," adds Tozzoli. "For example, I'll filter the bottom of one loop to remove the kick

pattern, but keep the snare, hi-hats and cymbals. Then I will do the opposite on the second loop, filter the top to focus on the bottom end. Then I will layer a real percussion/cymbal pattern over that to keep things creative."

Others, however, stay away from libraries altogether; instead, maybe finding a sample or two, and flipping, chopping and otherwise manipulating them to nearly unrecognizable (i.e., lawsuit-escaping)

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In the Loop

proportions. "They're so accessible," says Santana. "When you hear a guitar loop that's on a sound library, you might like that shit but at the end of the day, everybody has access to it and you don't want the same riff that's in everybody else's record."

"There's a sample in [Puff Daddy's] 'It's All About the Benjamins' that has been heard by everybody, but the way that Puff took it and flipped it and sped it up was genius," he continues. "You've got to be able to hear [a sample] and say, 'Okay, that's going to be hot.' And then everybody else from me to Dr. Dre would say, 'Why the hell didn't I think of that?' It's taking a sample and making something brand new out of it. That's why I wouldn't go and do the sound library thing because it's almost like having a keyboard with the demos in it and taking the demo and trying to make a record out of it."

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Number 9 Number 9



John Lennon on creating "Revolution #9" from The Beatles' *White Album*:

"It has the basic rhythm of the original 'Revolution' going on with some 20 loops we put on, things from the archives of EMI. We were cutting up classical music and making different-size loops and then I got an engineer tape on which some test engineer was saying, 'Number nine, number nine, number nine.' All those different bits of sound and noises are all compiled. There were about 10 machines with people holding pencils on the loops—some only inches long and some a yard long. I fed them all in and mixed them live." (Excerpt from *Paul McCartney: Many Years From Now*, by Barry Miles, p. 484. N.Y. Owl Books, 1997.)

THE VIRTUAL SKETCHPAD

Santana adds that library loops can spark an idea that kick-starts the songwriting process, which is probably one of the most popular ways to use loops. Producers, songwriters and even the artists themselves can create a rough demo out of loops (using Apple's GarageBand, for example), sketch out ideas on the road or build a rough track and replace the loops with "real" instruments later. In this regard, loops play a valuable role in the embryonic phase of a song.

"If you're stuck or just beginning to write a song and you have no ideas, and maybe you have the artist in the room with you, which is even more nerve-wracking, you can always put a loop up and if the artist goes, 'Yeah, like that,' you already have it looped and that loop already has a shape," explains Magness. "It's got a certain groove to it and a certain attitude. It makes it so much easier to come up with a guitar riff to go with it or piano or even a melody."

"Some artists will start singing with a loop without any chords at all," he adds,

"because it just has the beat, you know? It's like *American Bandstand* when they would play the two records in the contest and they'd rate them. They'd always pick the one that had a good beat."

Magness used loops to rework the demo for Clarkson's single "Low" from her debut album *Thankful*. "I had to decide how to approach the song, and the first thing I did was find a loop that fit the character of the song and had the right rhythm," he says. "I found those first loops, and then I played the whole song with just acoustic guitar to those loops. In the chorus, I added some sampled drums to simulate a real drummer. I'd replace that with a real drummer later, but I would punch it up to just the samples to play along with the loop and add other loops to that."

Tozzoli mapped out much of *Pulse* during one of Romero's touring jaunts this past year. "The record was composed to loops," he says. "We'd compose in hotel rooms—wherever we felt like it—and I'd always have my laptop, speakers and an MBox and we could come up with ideas and lay out songs very simply, as the verse-chorus-intro, and finish them up at home."

With the rise of prosumer loop sequencers such as GarageBand, anyone



Mix Master Mike prefers drum machines to loop libraries.

with an Apple G4 and a musical muse can write a song entirely built on loops. But even though GarageBand is compatible with Apple Logic Pro 7, it takes a bit more than a mouse to beat loops into submission and create a track that's exciting and potentially groundbreaking in the spirit of those analog tape-twisting trailblazers of 50 years ago.

"A loop is simply a tool. Just like a hammer or a drill. It's the method and its result is the final art," Magness notes. "A loop takes on its artist's characteristics. It becomes something other than its original self."



Heather Johnson is a loopy assistant editor at Mix.

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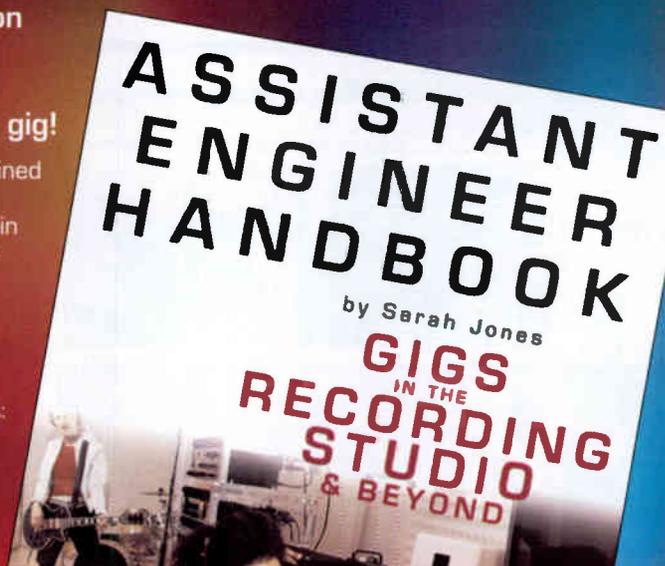
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THE Beat GOES Virtual

A LOOK AT SOFTWARE-BASED DRUM MACHINES

By Roger Maycock



Apple Ultrabeat



Arturia Storm 3

It's a given that the transition from dedicated hardware samplers and synthesizers to virtual software-driven instruments brings more of your music production right to your desktop. Samplers were among the first instruments to make the move to computer-based workstations. For years, musicians have been using drum and percussion samples to create rhythms and effects; the evolution of the virtual drum machine was only a matter of time.

Virtual drum machines or rhythm composers (call them what you may) have expanded with functions that go considerably beyond traditional drum machines or samplers. For example, velocity switching among samples (the harder the "hit," the more the sound character changes) typically once involved two or three different sounds. Today, there might be a dozen or more samples in the mix—with distinct samples for right and left hands! With drum/percussion collections often including thousands of samples, some applications now include database tools to help keep track of all these sounds.

Another interesting development is incorporating "groove agents" that enable you to go beyond traditional beat patterns and loops to encompass entire rhythm sections that form a song's foundation. If you're looking for an instrument, distinguishing between a virtual drum machine and a groove box/remix application can be tricky. For the buyer's guide assembled below, we've defined virtual drum machines as products that can import samples and velocity-switch among them, assuming that the instrument in question wasn't originally intended as strictly a synthesis-based system. Yet, while lacking these particular characteristics, Spectrasonics' (www.spectrasonics.net) Stylus RMX is certainly noteworthy and deserves a close look.

We searched for applications that are likely to appeal to audio pros, omitting consumer-grade products. However, Cakewalk's (www.cakewalk.com) Kinetic, geared for the remix artist, and Acoustica's (www.acoustica.com) Beatcraft may, nonetheless, be just what you're looking for. There are some amazing and cool products out there, so let's get going.

THE VIRTUAL KITS

Integrated into Apple's (www.apple.com/logic) Logic 7, the Ultrabeat drum synthesizer has full provisions for creating percussion loops or manipulating the samples of instrument sounds. Particularly effective for working in techno, house, hip hop or derivative musical genres, Ultrabeat provides two synchable LFOs, two EQs and four envelopes per voice. The instrument employs subtractive and FM synthesis,



Chances are, audiences at the Royal Albert Hall don't know a thing about *Divergence Shading*.

George Harrison
Tribute, Royal Albert
Hall, London, UK
Concert Sound



But that's how EAW line arrays conquer challenging venues like this, bringing consistent sound from the front row to the "cheap" seats.

Our concept

Divergence Shading emerged from intensive research into both line source theory and actual venue geometry. Like most breakthrough ideas, it's blindingly simple. To get consistent level from the front to the rear of an audience, you need more acoustic power at the back, less up front. Divergence Shading delivers using variable array curvature rather than multiple input signals. The array's rate of curvature increases proportionally as the distance from the speakers to the seats decreases. SPL is consistent from the front row to the "cheap seats." With no discontinuities in pressure magnitude, frequency response is smooth.

Our challenge

Divergence Shading is how line arrays should work, but only next-generation KF Series line arrays actually work this way. EAW engineers use innovative techniques to minimize interaction and maximize coherent summation: multiple transducers in each passband, horn loading, wave front curvature, frequency-variant dispersion, even line source coupling (!) to control the LF.

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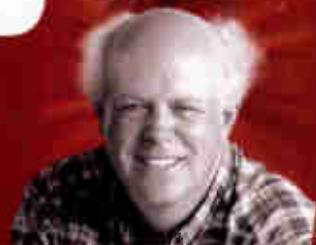
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World Radio History

noise, modeling and sampling. Its 32-step sequencer with accent is reminiscent of popular early '80s drum machines. UltraBeat offers 24 drum voices and one voice that can be played chromatically. Among its various effects, filters and EQs is a multimode filter that offers four different 12- or 24dB cut-off modes for tweaking the lower frequencies of instrument sounds.

With the exception of Tsunami, the Hork, Meteor, Psion and Puma drum/percussion modules for Arturia's (www.arturia.com) Storm PC/Windows music software follow the same basic operation and programming system. The difference lies in the choice of instruments with each module. Hork, for example, employs samples of acoustic drum set instruments, while Psion has samples from electronic kits. Puma is a collection of Latin percussion instruments, and Meteor offers samples from an unidentified drum machine. Instrument pitch and decay can be defined, and each instrument can be controlled by MIDI, shortcuts on the numeric keypad or via the instrument's Mute and Solo functions. Unlike the other modules, the Tsunami module is a 100-percent synthesized drum machine with eight oscillators—all fitted with various controllers such as amplitude, frequency envelopes and bandpass filters for each sound.

Best Service's (dist. by East-West, www.soundsonline.com)

Artist Drums uses kits from acclaimed drummers Simon Phillips, Dennis Chambers, Kenny Aronoff and Mel Gaynor. Recorded and mixed at Galaxy Studios in Belgium, the audio engine functions as a plug-in instrument without the need for a sampler program, and features up to 24 velocity layers and excessive sample layering, plus user control over the playback and programming of each instrument, with 32-bit processing and 256-voice polyphony for sophisticated arrangements. There are multimode filters, envelopes and LFOs for sound shaping and integrated high-quality reverb, chorus and delay effects. Artist Drums includes a Native Instruments interface powered by the Kontakt audio engine for Mac and PC.

New from Cakewalk (www.cakewalk.com), Project5 integrates sequencers, software synths, samplers, audio and MIDI effects, and audio looping tools. As a virtual drum/percussion engine, Project5 provides studio-quality instruments and effects,

pattern-based sequencers and processors, ACID-compatible audio looping, real-time pattern genesis and triggering, and a live performance audio engine. The DS864 digital sampler supports popular sampler formats, offers 8-layer/64-voice polyphony and supports key mapping and velocity zones. The Velocity™ drum sampler supports .WAV, .AIFF, LM4 and other proprietary formats, provides 18 polyphonic voices with up to 32 velocity-layered samples, offers extensive editing capability and includes 175 MB of Velocity drum kits from FXpansion and Q-Up Arts. Further, Project5 includes the nPULSE™ analog modular drum synthesizer, featuring a 12-voice multitimbral synthesizer with per-voice oscillators. Project5 is for PC/Windows (ASIO, DX, DXi, MFX, ReWire client, WDM, VST, VSTi).

Concrete FX's (www.concretetfx.com)



LinPlug RM IV

Granite (PC/Windows) can create vintage drum machine sounds and effects using its built-in oscillators and 16-bit .WAV samples. Granite's kits comprise eight drum presets with sound load/save/copy/paste for creating your own kits. Each preset can be sent to one of four stereo output channels and can be part of a Choke group. Each drum preset uses two oscillators per instrument with 12 waveforms or 16-bit .WAV samples. Each sample's position is controllable with an envelope that facilitates reversing or time shifting. Additional edit parameters include bandpass, band reject, ring modulator, comb filter, and frequency and ring modulation. Drum presets have their own decimator and distortion filters for additional sound alteration. The drum preset's parameters can be controlled using a vari-slope envelope with up to 16 sections and a definable loop position. They can also be controlled using MIDI commands via the MIDI Learn function. Granite provides 100 presets.

Compatible with Pro Tools LE and TDM systems—Mac OS X and Windows XP—Digidesign's (www.digidesign.com) Synchronic is an RTAS plug-in for manipulating audio loops to create a variety of rhythmic and sonic variations. Synchronic lets users create rhythmic modifications and in-tempo effects with individual beats and beat subdivisions within a loop. Effects can also be MIDI-synched with real-time control. Synchronic is controllable directly through its own GUI, MIDI, plug-in automation or via a Digidesign-qualified Pro Tools control surface. The application includes a graphical slice-point editor for automatic and manual loop slicing, 96kHz Pro Tools session support and ships with 200 MB of audio loops from the company's development partners.

FXpansion's (www.fxexpansion.com) BFD

and DR-008 virtual rhythm composers are complementary products: BFD employs an acoustic drum library, while DR-008 offers sampling/drum synthesizer capabilities. BFD provides control of seven real drum kits, plus additional hats, drums and cymbals. The drums are recorded from 11 mics positioned around the kit and room, providing the ability to mix the drums by blending mic sources. BFD also incorporates a comprehensive library of MIDI grooves. It supports VST, DXi, RTAS, AudioUnits and ReWire formats for Windows

and Mac OS X. Two expansion packs are available: BFD XFL and 8-Bit Kit. DR-008 is for generating and arranging drum and percussion sounds, one-shot samples and rhythm patterns in the user's DAW or sequencer. DR-008 uses a modular architecture, with sampling, MIDI event processing for performance features, pattern sequencing and import filters among its numerous abilities. DR-008 is compatible with VSTi, DXi and RTAS hosts on the Windows platform. It imports audio files in all .WAV and .AIFF formats, and can use third-party kits in LM-4 and Battery formats.

Glaresoft's (www.glaresoft.com) Mac-based iDrum virtual drum machine can function stand-alone or as an AudioUnits plug-in. This affordable application edits the pitch, decay time, bit depth and filtering for each drum part in a pattern. Both .WAV and .AIFF samples can be imported, though files need to remain under 2 MB in size. Further, iDrum's user interface provides individual

MC

Intelligent Application Controller



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

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

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velocity control for each step in a sequence. Up to 99 patterns can be stored in a single iDrum file, along with all of the drum sounds used to create the beat. iDrum comes with dozens of part presets, making it easy to create beats by mixing and matching parts and samples. Parts can also be edited and stored for future recall.

RM IV from LinPlug (www.linplug.com) combines analog-style percussion synthesis with intelligent percussion sampling, and its 18 velocity-sensitive drum pads can be used to trigger the system's various audio generator modules. RM IV includes 10 percussion synthesis algorithms—ranging from classic analog drums to cutting-edge sounds—and a fully featured percussion sampler. The Sampler provides support for single sample, multisample, velocity layer and velocity crossfade. Also standard are an AHDSR-controlled multimode filter, a compressor designed specifically for percussion sounds, a flexible "Humanizer" and a 6x6 modulation matrix. The user interface's all-in-one edit screen enables operation with minimal mouse-clicking; an "intelligent" sample module automatically switches off unused modules to optimize CPU resources. RM IV comes with more than 270 sample-based and synthesized drum kits and more than 2,850 grooves. RM IV is for PC VST and Mac OS X (both VST and AudioUnits).

Native Instruments' (www.native-instruments.com) Battery 2 (Mac OS X and PC/Windows) drum sampler boasts a large, customizable matrix with a total of 72 possible sample cells. Every sample cell is equipped with a compressor and multimode filter, an LFO, freely assignable envelope, mapping editor managing 128 sample layers per cell, a resampling effect and an extended loop section. Battery 2 ships with a 3.5GB drum/percussion library—more than 9,400 sounds. The sample engine provides 256 stereo voices and 32-bit internal resolution. The graphical mapping editor can configure up to 128 sample layers per cell. Sound sections can be merged to create new samples and different samples layered within the same cell can be triggered for greater creative control. Battery 2's loop section offers four loops per sample, including tuning, cross-

fade and alternating loop functions.

Available as a free download, Nexoft's (www.nexoft.net) LoopAZoid is a 48-channel, 64-voice stereo drum sampler available for Mac and PC/Windows. Each of the 48 sample channels has a pre-defined MIDI note attached, and triggering these in a sequencer plays the associated sample. Two MIDI notes can be assigned for each sample—one for forward and one for reverse playback. The application can handle stereo

trollers, a file browser and a suite of mastering tools. With more than 10,000 drum and cymbal samples, the Reason Drum Kits ReFill is a DVD-ROM library of multi-sampled drum kits mapped out across a MIDI keyboard for use as a rhythm composer within the Reason system. The ReFill Kits feature 17 NN-XT multiple output kits (for use with Reason's sampler) in a variety of musical styles and 50 additional ReDrum kits for Reason's step-time drum machine, plus MIDI files, song files, 20 style templates and 53 instrument patches for building custom drum/percussion kits. Samples are available in 24-bit and 16-bit versions. There are multiple same-velocity samples, enabling the NN-XT sampler to automatically alternate between sets of similar-sounding samples for more realistic performances.

Quantum Leap's (dist. by East-West, www.soundsonline.com) StormDrum (Mac OS X and PC/Windows) has 6 GB of loops and multisamples ranging from conventional to exotic that are divided into two libraries designed to run on the included Native Instruments' Kompakt and Intakt virtual instrument engines. StormDrum's multisampled kits and percussion provide 10 to 24-way velocity switching with left/right-hand samples for greater control and more realistic performances. Loops are played from a one-screen interface based on the Intakt sampler; sound shaping tools include a multimode filter, envelope follower, two LFOs, effects and additional parameters. Loops can be automatically synced to tempo via the Beat Machine or the Time Machine. The Beat Machine has loops divided into their individual hits (slices)

that are playable at a wide range of tempos without any pitch change. Each hit can have individual settings for pitch, playback direction, pitch envelope, amp envelope, distortion, delay, etc. A MIDI file of each loop can be exported so that groove, accent and feel can be manipulated in any host sequencer. The Time Machine time stretches/compresses loops in real time.

Groove Agent (Mac OS X and PC/Windows) from Steinberg (www.steinberg.net) is a virtual rhythm composer plug-in (VSTi) incorporating 50 musical styles (each with its own drum style patterns) and up to 24



Quantum Leap StormDrum



Steinberg Groove Agent

and mono samples and play them back with up to 64 voices while each sample can be played fully polyphonic. LoopAZoid provides three mute groups. This enables the creation of open and closed hi-hat patterns and similar percussive functions. Groups of samples, or patches, can be exported for archiving and exchanging data with others.

Propellerhead Software's (www.propellerheads.se) Reason 3 (Mac and PC/Windows) virtual instrument provides one-step loading of complex, customizable instruments and effect setups, soundbanks, integration with MIDI keyboards and con-

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complexity levels in each style, including fills and half-tempo-feel variations. There are four unique drum kits, plus percussion and numerous electronic drum sounds. Any style can be combined with any kit, and the kits are user-configurable and editable. The application provides separate dry and wet (ambience) samples and four stereo outputs. Groove Agent's Shuffle and Humanize controls facilitate fine-tuning a beat's overall feel. All edits can be saved for later recall.

DrumCore (www.drumcore.com) from Submersible Music is a collection with more than 8 GB of 24-bit drum beats performed by leading players, with both MIDI and audio hits, loops and fills. Loops are auditioned by clicking on icons that represent a groove's loops and fills. DrumCore also has an integrated MIDI drum module for playing MIDI drum parts and layering instruments. The application includes a search engine/database for locating content via musical and stylistic criteria, and there is also a project and file export function for placing content into Pro Tools, Logic, Digital Performer and other apps. Content can be monitored through your computer's native audio system or through

ReWire when used with a DAW application. Performances were recorded at multiple tempos to prevent audio quality from being compromised by extreme tempo stretching, beat slicing or other processing. DrumCore is for Mac (PowerMac G4 400 MHz or higher; OS 10.2.3 or higher).

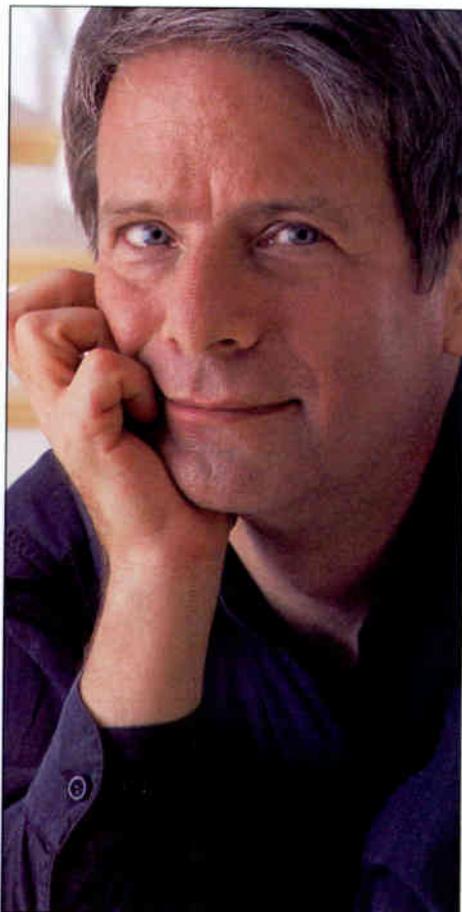
Toontrack's (www.toontrack.com) DFH Superior is a drum/percussion application that runs as a VST instrument (VSTi) or via ReWire for Mac OS X and PC/Windows XP systems. DFH includes three plug-ins—Superior Drummer, Superior Percussionist and Superior Cocktail—and includes more than 85,000 samples distributed on one DVD-ROM and four double-sided DVD-ROMs. There are 60-plus cymbals, five drum kits, eight hi-hats and 17 snares that are sampled using an assortment of brushes, drum sticks, rods or felt mallets and various bass drum beaters. The drum kits are sampled in



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multiple velocity layers, including right and left hands, for greater realism. DFH offers "Multiple Leakage Control": multiple outputs with natural bleeding choices through all mics to achieve realistic performances. MIDI control change messages are supported for the highest degree of control. Mac AudioUnits is also supported.

USB's (dist. by Ilio, www.ilio.com) Plugsound Drums and Percussion Volume 3 is a 540MB sample library for use with the company's UVI audio instrument engine, which uses 32-bit floating-



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I send them out and have people listen to and make essential suggestions. They can tell me what they like and don't like and then I spot assemble a new sequence and cut it from wherever I am in the world, even on an airplane. In the studio, if somebody wants to hear something right away, I just make the changes, post it, and boom, it's done.

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point architecture and operates with most plug-in formats. Plugsound Drums and Percussion includes natural acoustic jazz, pop and rock kits; "Treatment" kits with distortion, gate and spring reverbs; and a large assortment of electronic sounds from well-known drum machines. Stylistic kits offer a wide selection of electronic drums sorted by style (dance/electro/groove/house/techno/trash/jungle, etc.). Additionally, there is a comprehensive percussion library featuring more than 60 different instruments. Plugsound data files can be used in MOTU's MachFive universal sampler. The Sample Library is for Mac (MAS, AudioUnits, RTAS or VST 2-compliant host) and PC/Windows 2000/XP (VST 2, RTAS, DXi-compliant host).

Culture is Yellow Tools' (www.yellow-tools.com) modular virtual instrument containing nearly 9 GB (two DVDs) of authentic and highly optimized sounds of world, ethno, industrial and orchestral percussion instruments combined with a high-end audio engine. All instrument samples incorporate 16 velocity splits per note for left/right hands. These techniques are available for the different playing styles such as hits, flams, rolls, etc. A Skip Pitch function lets users delay the pitch modification so it kicks in after a certain delay. This preserves the original attack of the sound while still pitching the sound as desired. The Pre-Silence feature allows the user to apply a slight initial delay to each note, creating the effect of several percussionists playing one note at the same time but with slight timing discrepancies. Culture also provides Intelligent Polyphony Management, Note Off, and Key Activator and Volume Controller functions for added creative control. Culture is for Mac and PC/Windows, with most plug-in formats supported.

The Operating Table from Zero G (www.zero-g.co.uk) is a plug-in or stand-alone

drum/percussion sound module powered by custom versions of Intakt sampler and Kontakt audio engines. The compilation of instruments and rhythm patterns, fills and other components was produced by Emre Ramazanoglu in London, who has produced for Prodigy and William Orbit. The main drum kits employed for this collection are a custom Premier Signia, a custom Tamburo Opera, an '80s Pearl BLX and a Premier APX. All cymbals

are Zildjian and there is an assortment of additional snares. An extensive collection of backbeats derive their feel and sonic basis from live drumming technique performed by the collection's four featured drummers. Loops can be synced to your host sequencer at any desired tempo. Supported plug-in formats include VST 2, DXi, ASIO, AudioUnits and RTAS for Mac OS X and PC/Windows. ■

Roger Maycock is a freelance writer based in Los Angeles.

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Radical Recording

By Maureen Droney

AN UNUSUAL SEARCH FOR SOUNDS

It's a fact, right? Creative recording is a dying art. With the bulk of the music business still dominated by quarterly statements, cookie cutter soundalikes, desperate litigation and low-talent video star "singers," there's a lot of paint-by-number recording going on. Hey, it's the music *business*—there's no time for experimenting! But don't despair—there are a few Don Quixotes out there recording for the love of it. This year's "Radical Recording" panelists are proof that there are still brave souls in the trenches, pushing the creative envelope and searching for sonic nirvana. Here's to an infusion of inspiration for us all.

HI-FI MEETS LO-FI

Artist/producer/engineer John Vanderslice gained fame as an indie pop/rock innovator with his band MK Ultra and critical acclaim with his three solo releases, including *Cellar Door* in 2004 and the notorious single "Bill Gates Must Die" from the 2000 *Mass Suicide Occult Figurines*. The San Francisco-based Vanderslice remains addicted to analog: A 24-track Studer 827 holds place of honor at Tiny Telephone, his 1,700-square-foot studio that's been dubbed, by the *San Francisco Bay Guardian*, "Best Studio to Record Your Indie Masterpiece." TT hosts an eclectic roster of in-house producers and engineers, including Justin Phelps, Bob Weston, Chris Walla and Vanderslice's partner-in-crime, Scott Solter, ensuring constant traffic from some of the hippest bands around. Vanderslice himself just naturally thinks outside the box: A goldmine of tips and tricks, he dug into his bag to share a few.

One frequent Vanderslice/Solter recording strategy involves what they call the "wild card track." "Say you're recording drums," Vanderslice explains. "We usually try to limit ourselves to four or five mics on a drum kit, but

we also use an aux send to bus the drums to a Spectrasonics 610 compressor or an Ampex MX10 mixer that we'll hit really hard. That gives us an explosive sound that we can blend in under the normal hi-fi drums. A UREI 1176 will work for this, too, but the 610, especially when the red lights are going off and the meter is buried, is the best. Blending in this wild track provides a lot of sonic tension or dissonance. It's great for texture. A little goes a long way."

A variation on the theme works for horns. For a small horn section or solo trumpet, a track distorted through an Ampex 351 mic preamp gets comped with the clean tracks. "We mix it so you don't hear distortion," Vanderslice relates. "What you get is a thickness, like the gutsy sound of a late-'50s recording."

For strings, Vanderslice suggests doing two passes, using small-diaphragm condenser mics—Schoeps 221s or CMC65s—for the first pass and ribbon mics like Beyer 160s on the second. "When they're combined," he says, "the ribbon mics fill out the midrange nicely. They're softer and they carry the low mids differently than the condensers, making for a much richer sound than you'd get with just condensers."

A Neumann SM69 stereo mic with rotating capsules lends itself to some cool variations. Vanderslice

aims both capsules at the same sound source, then records one clean and one processed. "This can be very effective on vocals," he notes. "One capsule can be compressed and the other left flat. When you blend them, you retain all the transients of the uncompressed track."

Passive filters are a favorite Tiny Telephone tool; Solter has a collection of antique ADC and Cinema Engineering theatrical filters that are, Vanderslice notes, "basically just shelving EQs. We'll take one or two of the drum kit mics, put them into the filters and take off a lot of the top end. That gives a murky, submerged sound to the drums, something that's neither modern nor 'old-timey'-sounding. It's just unplaceable, very useful when you want some atmosphere."

TT boasts an EMT 140 plate reverb, which, because it's housed in the live room, gets some non-traditional use. "If something loud is playing, like drums, electric guitar or timpani," Vanderslice notes, "it will bleed into the plate. When you check it out in the control room, it can sound very beautiful."

Going analog means access to varispeed on the tape recorder, another TT signature tool. "We do off-speed recording on instruments all the time," he says, "sometimes by only five to 10 percent. When you bring those varispeeded instruments back to normal pitch, they sound a little bit skewed. An acoustic guitar recorded up 15 to 20 percent will sound very rubbery when you bring it down to normal speed, almost like a baritone guitar."

How to keep those off-speed instruments in tune? Don't be shocked—"We tune by ear," Vanderslice confesses. "Sometimes it will be off a bit, which gives a chorus-y, bizarre kind of pitch that you won't get tuning normally to A440."

Other analog tricks involve TT's 1940s Masco P.A. head, Solter's TEAC ¼-inch decks and overloaded circuitry. "They're capable of very nice distortion," Vanderslice notes, "probably because they're completely overwhelmed by the input level. The holy grail for us is high-quality distortion. It sounds funny, but that's actually difficult to get."

Acoustic guitar often gets the benefit of some high—or low!—quality distortion using a Schoeps 221 mic in omni mode. "You can put it in front of any acoustic guitar," Vanderslice offers. "The quality of the instrument hardly matters because you're going to destroy it. We'll put it though a Neve 1073 at a very low gain stage,

maybe -30 dB, then send it into an Ampex MX10 or an Ampex 351 tube mic pre. We'll tweak the input of the Ampex against that of the Neve until we get the right gain matchup—those tubes want to see some heat! Then you back down the output of the Ampex or maybe send it into an 1176 so you have some control. Or you can scale down the input on the MX10 and get a really thick, syrupy hi-fi guitar tone. There's a lot to play with, between slightly overdriven distortion and 100-percent saturated.

"There's a tremendous amount of noise from hitting the tubes so hard, so you do have to gate it. The beauty of this technique is that you can work the input and output of both mic pre's until you find exactly the right amount of distortion for your application. It's a very flexible way of using both a solid-state and a tube mic pre together to find that sweet spot."



Alex Newport in his recently opened Hot Head Recording Studios (L.A.)

OLD IS NEW, BACKWARD IS FORWARD

Producer/engineer/mixer Alex Newport is a British expat musician who got into recording when his "loud, fast punk" band couldn't find anyone to record their music to their satisfaction. "We ended up working in a studio with some hippie who was trying to put a phaser on everything," he recalls. "As that obviously wasn't going to cut it, I took over." Newport's amassed a slew of credits since then, among them System of a Down, the Mars Volta, At the Drive In and Ikara Colt. A busy guy, he does 12 to 20 albums per year. He also recently opened Hot Head Recording Studios in downtown Los Angeles.

Newport had to be coaxed to discuss recording techniques, insisting that his focus is on song and performance. When pressed, however, he offered anecdotes that justified his reputation for, when necessary, applying out-of-the-box techniques to get results. One of the wildest adventures took place during recording with the notorious Melvins on their 1996 release, *Stag*. It was on the cut "Goggles" that, Newport recalls, "the band wanted to do everything opposite from how it was supposed to be.

"If you'd normally use a [Shure SM] 57 facing a guitar speaker, they'd want to use a 75 and place it facing away from the guitar amp. Okay, there *is* no 75, but the objective was clear: the literal opposite," he says. "I'd take an [AKG] D-112 mic that I'd normally use on bass drum and put it on the hi-hat, then take a small-diaphragm condenser and put it on the bass drum. I EQ'd tons of



John Vanderslice finds himself often "tied up" in his work.

Radical Recording

low end onto the hi-hat and took all the lows off the kick drum. For the vocals, singer Buzz Osborne sang through a little Radio Shack mic into an Ampeg SVT torqued to full, which we then miked."

Ahem. Did all these tone reversals make for difficult mixing? "It was quite bizarre," Newport says with a laugh. "At that point in my career, I spent my time trying to keep everything sounding good: a solid low end, a nice smooth high end, everything in phase. Suddenly, the goal was to make the most obnoxious sounds possible. In a way, it was like being a kid in a candy store. I didn't have to worry about distortion, full frequency response, phase cancellation—in fact, a lot of things were deliberately put out-of-phase to make them uncomfortable to listen to.

"By mix time, we'd gotten to where nothing we did was extreme enough. We fed the vocals into a 4-track cassette with levels slammed; it had something like five levels of distortion, but it was never enough. The Melvins were working with several different producers and engineers; finally, they decided to take the song and

try it with someone else, which at that point, was fine with me! As it turned out, when they'd had a bit of rest, they decided it was extreme enough and it ended up on the record."

These days, budget constraints sometimes limit experimentation. However, when there's time, there's plenty of studio gear Newport is willing to abuse. He elaborates: "I like chaining two or three compressors together. The Spectrasonics 610, which is known for being 'grind-y'—sounding, really goes over the top when you chain two of them together. Another chain of choice is an 1176 into a Spectrasonics; with a bit of level crushing, a radical sound is easy to obtain. I'll use that on drum submixes and bring it back into the mix.

"The main thing is that the attack should be quite slow on the first compressor in the chain; the second compressor controls the final amount of attack. If you use a fast



Artist Paul Westerberg (right) kept producer/engineer Matt Wallace on his toes while recording 14 Songs.

attack on the first compressor, there's no transients left to destroy. The Spectrasonics overloads easily; it's like a distortion box and compressor all in one."

Newport's production of Brazil's *A Hostage and the Meaning of Life* (Fearless Records, 2004), particularly the cut "Escape," shows examples of the Spectrasonics/1176 combo. "In fact," he

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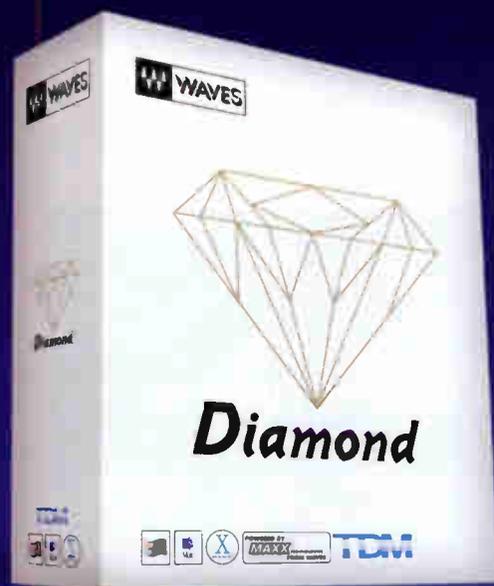


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notes, "it's almost the entire drum sound, with just a little of the close mics added for clarity."

Another box Newport favors for drums is the Alesis MicroCompressor. "They're stereo units," he comments, "perfect for room mics or drum overheads. For total bombast, I'll chain two MicroCompressors together. Of course, extreme sounds only work for certain songs. The instrumentation has to make space for it; otherwise, it's just mud. These effects are better on slower or more sparsely arranged songs."

Newport is also a fuzz pedal collector; for drums, he might reach for a Big Muff or the Holowon Static Egg, fed through a bus or aux send, then EQ'd and gated. "I've also had good luck using a Sansamp bass driver for drum distortion," he notes. "With judicious use of a gate, you can control the sustain of the drums in a very musical way. The effect is similar to SPL's Transient Designer, but with a lot more grit!" "Automatic" from Ikara Colt's 2004 release, *Modern Apprentice*, is the best example of this sound.

"Especially with today's gear, where so many of the sounds are emulations

or presets, I try for unique sounds. I find pedals more fun than plug-ins, many of which sound generic to me. Half the fun of using pedals and distortion is that you're using something in a way that it wasn't intended to be used."

A final radical thought? "Working with a band called Knapsack, we were searching for a very compressed, unusual room sound. I tried a bunch of compressors but nothing worked, until I hit upon the idea of using a Dictaphone [a voice recorder used for dictation and messages]. You can put one into record/pause and take a line out. They have this insane brick wall limiter: instant destructo levels! I switched back and forth between the small, distorted, compressed drum sound on the verse and the full, close-miked drums on the chorus."

A THINKING MAN'S GUIDE TO RAD REC

Producer/engineer Matt Wallace has a long and critically acclaimed discography that's also laced with a large amount of Platinum. From his early days with Faith No More through work with The Replacements, John Hiatt and Train, to his current success with Maroon 5, Wallace has maintained a philosophy of going for broke to get a great performance. A man on a mission, he constantly challenges himself, and the people he works with, to create vital, exciting music. We caught up with him at his Van Nuys, Calif., studio.

Some of the production techniques Wallace has developed over the years were spawned on projects with singer/songwriter Paul Westerberg and with his former group, The Replacements. The Westerberg album, *14 Songs*, was, he recalls, particularly challenging. Part way in, the project took a left turn when Westerberg, while keeping Wallace on as producer, fired the band and engineer, then moved the project from New York to San Francisco. "I realized what a mercurial talent Paul is," recalls Wallace, "and I was trying to figure out what we were going to do when I walked in on him writing a song on acoustic guitar in the bathroom at RPM Records. I could tell it was really happening. In the equipment I'd brought with me was my Fostex X15 4-track—technically, one of the worst pieces of gear you could own. But I brought it into the bathroom, showed him how to work it and let him record where he was—by himself. It's a mono recording with tons of air conditioning hum on it, and that's what we ended up using. I think most people, when they first heard him working on the song, would have said, 'Cool idea! Let's go

The advertisement features a dark, moody photograph of a speaker cabinet with two large, oval-shaped drivers. At the top, a red stamp with the word "CAUTION" is overlaid. Below the stamp, the text "Chest impact may result in coronary" is written in a yellow, sans-serif font. In the bottom left corner, a green heart rate monitor line is visible. The model number "TCS2800" is printed in yellow in the bottom right. The TCS Audio logo, consisting of the letters "TCS" in a large, blue, stylized font with "AUDIO" underneath, is positioned at the bottom center. The website "TCSAUDIO.COM" is printed in small white text at the bottom right.

in the studio, set up a mic, get levels and see what happens.' But in that case, and many others, if you do that, you're going to lose it. At that moment, the song was being born, right there, and we got it. Plus, when Paul saw I was willing to do whatever it took to get a performance on tape, he really opened up."

It was also Westerberg who taught Wallace the importance for a producer to stay several steps ahead of the artist. "By the next round of recording, I was ready for him," Wallace says, laughing. "I'd gotten the band set up. Then, in the control room, just for the hell of it, I put up a Neumann tube U47 on a huge Atlas boom stand, right behind the console. I guessed at the proper gain settings, then swung it out of the way. When the band finished a take of the song called 'Silver Naked Ladies,' Paul came in, all excited to hear the playback. He was ready to sing, but he expected me to spend some time setting up a mic and headphones out in the studio. Instead, I swung the mic around in front of the console, turned the monitors up full and said, 'Let's go!' By rights, singing in a control room, with blaring monitors and a mic as sensitive as a U47, it should have sounded terrible. [Eds. note: To prevent feedback, the track being recorded was very low in the monitor mix.] But it kept him pumped up and in a couple of takes, we had a great vocal. Again, it was the moment of inspiration."

Producing often requires the use of psychological tools—one of them can be jarring a point of view to open the doors to creativity. "I was working on a song with a band called Royal Jelly," says Wallace. "The guitarist had played a song a bunch of times with the same solo. Finally, he said, 'I want it to have this swirly, ethereal kind of sound.' So I picked up a Shure SM57 by its mic cable, swung it around and recorded him while he played. It got him excited, and he played a great solo. I think when artists see you're as crazy as they are, or that you're willing to go further than they expect, they open up. They feel like you're a partner instead of 'Mr. Goodsound,' somebody who's going to show them how it should be 'properly' done.

"I often have to drag bands kicking and screaming to do this kind of thing. Sometimes, personally, I don't want to go there. But you have to trust your instincts. What matters is getting the most inspired, genuine, emotional performance you can out of someone, and oftentimes, that takes really flying by the seat of your pants."



Maureen Droney is Mix's Los Angeles editor.

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David Chesky

Eclectic Producer, Outspoken Audiophile

David Chesky does it all. Since 1986, he's run his own audiophile record label, Chesky Records, which has released dozens of albums in a multitude of styles: classical reissues, new orchestral recordings, chamber music, jazz, world music, pop vocalists and more. As the label's main producer, he has worked with the likes of McCoy Tyner, Clark Terry, Paquito D'Rivera, Peggy Lee, Phil Woods, Larry Coryell, Ron Carter, Mongo Santamaria, Marta Gomez, Badi Assad, Oregon and even The Persuasions.

A skilled pianist, Chesky has also recorded albums under his own name and with various jazz ensembles—the most recent was a marvelous recording called *The Body Acoustic*, released last spring, which finds Chesky in a spirited and adventurous quintet with trumpeter Randy Brecker, bassist Andy Gonzalez, conga phenom Giovanni Hidalgo and Bob Mintzer on bass clarinet. It's one of my favorite discs of 2004. Chesky has also written and recorded many modern classical pieces, as well as genre-crossing works that merge his love of classical music and Latin jazz. It's a wonder he ever sleeps.

Chesky is a hero in the audiophile world because of his company's dedication to superb sonics. Eschewing conventional multitrack recording methods, Chesky prefers cutting live to stereo (and multichannel) with top-of-the-line custom equipment and variations on the Blumlein technique, using optimally placed

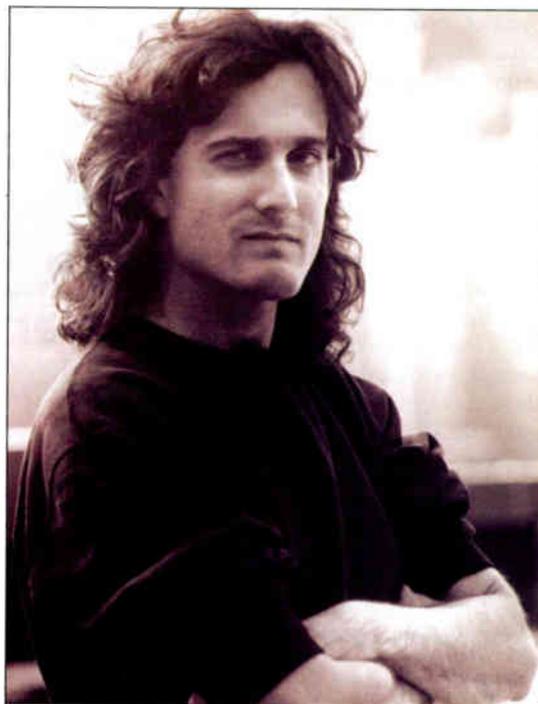
mic pairs or a SoundField mic—whatever works with the band or ensemble. These days, he records mostly to Genex MO. He has heartily embraced 5.1 (even putting out a spectacular 5.1 demo disc called *Dr. Chesky's Magnificent, Fabulous, Absurd and Insane Musical 5.1 Surround Show*) and has helped develop a different surround format, 6.0. Many Chesky releases are available

as hybrid 5.1/stereo SACD releases. Chesky's company also now markets its own high-end loudspeakers, the C-1.

Outspoken and opinionated, Chesky doesn't pull any punches when he talks about the audio and record businesses.

The Chesky approach is to record live with a single mic array. How did you arrive at that methodology?

Mostly from just what sounds best to me. I've been involved with music my whole life, been in all sorts of different kinds of groups since I was really young. I've also



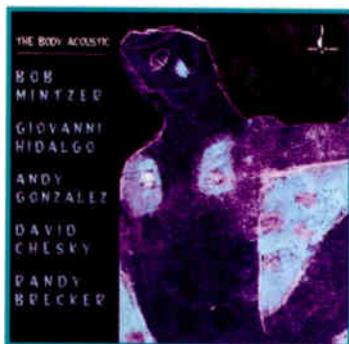
been a classical composer and conductor. Anyway, when I used to conduct for television and movies, I would stand in front of an orchestra and it would sound *great*. I was a kid then, 19 or 20 years old. They'd have 20, 30 microphones set up and then we'd go back to mix it and it would always sound weird to me because the engineers would essentially be putting the orchestra back together. That stuck with me, and when I started my own label later, I wanted the sound to be from a single point and not all divided to be reassembled later. That's why we started doing M/S recording. The multitrack is cool for certain things, but our philosophy is trying to document the live event and we do it with a stereo microphone. We set the musicians up very carefully and the electronics are minimal, but we're using the best-sounding equipment we can. When you hear our stuff, it's super-clear—everything is the best wire, the best amplifier, the best mic pre.

And it's all custom gear.

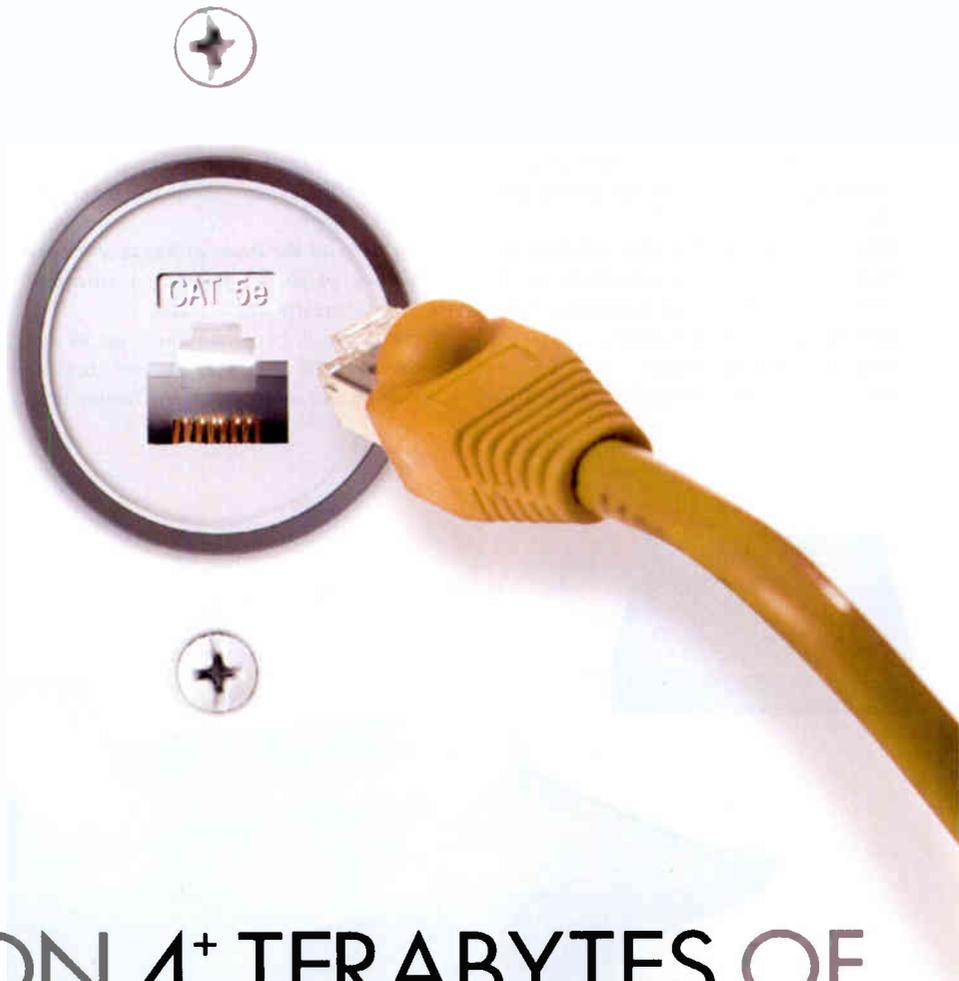
Most of it. We build some things, but we also use some off-the-rack stuff, like our A-to-D [converter]. It's a commercial one that we rebuilt. I'm not going to mention the name because one of them blew up on me last night. [Laughs]

What's your current mixer?

We built it; it's an 8-channel tube mixer designed by George Kaye [of Moscode Inc.]. He also did some work for us on some OTL [amplifiers] and things like that. We've modified



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microphones and we also do SoundField [MkV] miking.

You're also a strong advocate for surround.
We've been pioneering an experimental format called 6.0. When you think about it, 5.1 is basically glorified quad. In 6.0, we have two height channels on the side at 55 degrees. I'm not that interested in stereo recording. I'm much more interested in making three-dimensional recordings. We're into enveloping. If you come to my studio and listen back to a surround in 6-channel, it's like you're at the event. When you listen to a band in stereo live, the audience is in the 2-channel field. Now with the SoundField recordings, the band is in front of you and the audience is to the side and in back of you. We completely envelop you, which 5.1 can't quite do, though we also matrix it for 5.1 for commercial releases. But this could be a future format. We were the first people to record at 24/96, we did the first oversampling chips, all that kind of stuff.

How would you mike a large band in 6.0?
With a single-point SoundField or an M/S with an omni. We could matrix it to 5.1 or 210 channels; it doesn't matter.

How do you monitor that?
It's really hard to monitor, because with the

types of places we record—churches and such—you're pretty much monitoring in the coat-check closet. [Laughs] We monitor a lot with headphones.

If it was a live concert from Carnegie Hall, I could put you in the fourth row, like a holograph. That's going to be the future of mix-

I'm much more
interested in making
three-dimensional
recordings.
We're into enveloping.

ing. Let's not think of stereo or quad—let's think of a three-dimensional space like you hear in real life.

Even with all the hype, so few people have adequate playback systems for surround. The numbers are still so small.

They are small, but look, you've got to start somewhere. We might be 10 years ahead of the curve and never make any money from

this, but that's not the point. Part of it is the art of the thing. If I were into the bread, obviously I wouldn't be doing this. But this is our thing. We're like the little French restaurant and the other companies are McDonald's. We have our loyal audience. We're doing okay. We want to make the best product we can; for people with high-resolution systems, these are the best recordings they can find. Then again, there are also a lot of college kids who are buying *The Body Acoustic* and playing it on boom boxes and computer speakers, and they're digging it, too.

I find there's a dichotomy in the recording world because you have this split. People want the technology to really advance the state of recording, but at the same time, most kids now listen to records on \$10 plastic computer speakers. The ability to listen attentively seems to be getting lost. When we were growing up, you went home and you really *listened* to those records, whether it was Beethoven or the Grateful Dead. You put that needle down and it took you somewhere. It's what we came to expect from music.

I don't care if you're an audiophile or not, but if you're in a rock 'n' roll band and you spend nine months in a studio, you



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don't want people to listen to it on computer speakers.

Do people who buy your jazz records also buy your classical recordings because they're audiophiles?

There are some who like only our jazz or only our classical or only our world music, but there are some who just love the way our records sound. My label is an adult-oriented label. It's acoustic music with real musicians. We don't do overdubbing; you don't go into the studio for nine months. We find the best pianists, the best jazz guys, the best orchestras and we go in and record them.

Surely you do editing.

We do editing. If there's a wrong note, we take it out, but we don't do overdubs and punching in.

How do you take out a single note from a stereo SoundField recording?

I have a guy named Nick Prout who's brilliant on the Sonic [Solutions system]; he can take out a 32nd note. What we do is record two or three takes. Chances are, nobody is going to make the same mistake twice. We'll edit between performances as necessary. For this kind of recording to work, you need great musicians, a great engineer and great editors. I'm really happy I have a staff of people who will do what needs to be done and do it right. I know if I give the tapes to the editor, he's going to go through it better than I ever would. It's so important to have a good team. It's not about me. I'm like the coach.

Who are the people who influenced you sonically?

Well, I started my label by reissuing the classic [Charles] Gerhardt/[Kenneth] Wilkinson records—*Reader's Digest* records by some of the guys who invented the Decca Tree! The first record I reissued was the Rachmaninoff Piano Concerto No. 2 [in C minor, Op. 18], and that was it. We did reissues for two years and then we started making our own records when we had the money, using some of those techniques but with our own [improvements].

When stereo records started happening in the '50s, the people who owned the labels were passionate about it. The guys who owned record companies were into the music; they weren't bean counters working for multinational corporations. Even the big guys at the labels were musicians. The engineers were real *engineers*—they could build mic pre's and build amps and they really understood the equipment they used. It was a different head. People had Marantz and McIntosh [amps]. Really, it was an audiophile era by default.

My aesthetic is to create a real event with dynamics. Unfortunately, we live in a world that doesn't want dynamics. On the average

pop record, the object is to get the needle *not* to move. We're teaching the population of the world that dynamics are bad. So you have two opposing factions—one is saying let's do a great thing and have high-resolution multichannel audio, and the other is saying let's make things that sound good compressed on the radio and on MP3s through computer speakers. The sad thing is, when you go to an AES show, you have the smartest people in audio up there giving papers and demonstrating high-end equipment, when in reality, the industry is geared to some fictitious 14-year-old girl who lives in the Midwest who is downloading compressed files to her iPod.

Imagine if everyone tried to make things great instead of dumbing everything down. We have the technology right now to create affordable home theater systems that will truly put people in another space and hear things in ways they never have before.

How did you transition from being mainly a musician to mainly a producer?

I had been writing and arranging and playing in studios my whole life—classical and jazz. And being an arranger, you're pretty much already producing. You're writing the charts and working with the engineer because you know what it's supposed to sound like. After a certain point, I said to my brother [Norman,

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PRODUCER'S DESK

who helps run the label, “Instead of waiting for the phone to ring, let's be the catalyst and make the records we want to make.”

Was it hard to get the word out? Marketing is so hard.

Marketing is tough, especially for a small company. But we always had good word-of-mouth from the beginning and that goes a long way in the jazz and classical worlds. We always felt encouraged about what we were doing.

I don't have the resources that Sony and Warner Bros. have. Fortunately, over 18 years, we've built a big audience around the world where our logo actually means something. We're never going to be about making hit records. We're into making great records. *When you work with someone like McCoy Tyner, does he know there's going to be a certain approach to the recording that might suggest a certain kind of repertoire?*

Everyone knows how we record. We're going to be live in a room and we're going for dynamics. So I'll tell the drummer, “If you play too loud and you can't hear the piano player, there's nothing I can do. You're a musician and you have to learn how to play with dynamics.” That's how they used to do it. The problem is, musicians and engineers have relied on using all these microphones and tracks as a crutch.

Are there some instruments that lend themselves more to the kind of recording you like to do than others? Like when you did The Body Acoustic, you've got piano and a muted horn and Giovanni Hidalgo banging away on the congas. Are there certain overtones and subtleties in some of the instruments that are picked up more easily in the type of miking you like to do?

Pianos are hard sometimes because the [dynamic] range is so big. And that's my instrument, so I'm very sensitive to it. Really, though, a lot of it is getting the musicians to play with each other in a way that is sympathetic with the acoustic space we're recording in. Like Giovanni is used to playing with these big Latin bands and *wbacking* those congas. He's amazing; he's like the Heifetz of the congas. In his world, he's as good as anyone on the planet.

[*The Body Acoustic*] was tough for the reasons you said. It's an interesting combination of instruments and textures. But the engineer [Barry Wolfson] did a great job. I'm really happy with how it turned out, and we've gotten a really good response to it.

What are your favorite spaces to record in? I love churches. I love concert halls. I love jazz clubs. The space is so important. If you're in the wrong place, the best mics and mic pre's aren't going to save you. We record all over. Everything is in racks on wheels.

Are there other producers you admire?

I really love the work of Reference Recordings. Tam Henderson and Keith Johnson are brilliant. They've done such wonderful stuff. I also really like Tom Jung's work. A lot of the best stuff is coming out of small labels. They have passion.

I know you've gotten to produce some of your heroes. Can you be a fan and a producer?

Sure, but it's true that once you produce someone, that changes the relationship you have with that artist, and I don't mean that in a bad way. You can't be sitting around just admiring them and thinking how great they are. [Laughs] Suddenly, you're in a position of power and you're helping them achieve something; you're working as an equal in some ways. If there are mistakes, you have to get them to do it again. You've got to be able to say, “Hey man, in bar 24, that note is wrong, it's flat.” I idolized people like John Lewis and Clark Terry when I was a kid and then here I was, 20 years later, telling them what sounds good. It's wild, but it also felt natural to me.

We've read all these stories about the dire state of mainstream jazz and classical recordings. Sales are down across the board; people are struggling. Do you exist outside of that business because of your audiophile credibility?

That's definitely something we have going for us—the audiophile thing. But it affects us, too. We talk a great game in this country, but at the end of the day, we do absolutely nothing to educate kids about music. You go to Italy and every truck driver, whether he listens to Puccini and Verdi or not, *respects* them. Every young kid in the United States should know who Coltrane, Ellington and Parker are. If they're not into it, fine, but they should at least be exposed to it and respect the art form. Unfortunately, we live in a time where everything is disposable and there's no respect for these people that laid the groundwork. It's sad. As long as politicians pay lip service to helping schools but in actuality cut arts funding, they're going to get the culture they deserve.

American Idol, MTV...

Right. *American Idol*. McDonald's. Kids aren't out there saying, “You know what? I want to hear the Mahler 8th.” They'll never hear it unless they search it out or someone plays it for them. Same with Coltrane. Same with most music outside of the mainstream. A lot of kids don't even know where to look. There's so much more out there. It's like farming: You have to plant the seeds for the next generation. ■

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Deep in the Santa Cruz Mountains, a rutted dirt road twists upward through the forest. As you negotiate hairpin turns, pits and potholes, it grows darker as the towering redwoods close in. Resisting an overwhelming urge to turn back, you round one final bend and make out the gleaming dome of an aluminum trailer, coupled with the faint strains of a country serenade: "My love was alive but now it's DOA/I'm just another lone squatter at the KOA/There ain't a lonelier place when you're alone/and don't want to be."

Inside the trailer, expecting a grizzled retiree in a living room strewn with open soup cans, belting out an ode to a lonely life trolling America's favorite campgrounds, you instead find engineer Will Shanks at work, mixing Kentucky-based Americana cult favorites Trailer Park Troubadours' latest album project. This is the control room of Shanks' Ear to the Ground Studio (www.earthtotheground.com), which does double-duty as a stationary studio and a mobile rig for live events.

The idea for the studio came from Shanks' friend and "landlord," Tim Beverly, who had built a recording space on the property years before. He said, "Why don't you come up here and use this place," after Shanks cut his own record there. The 29-foot 1969 Airstream was bought as an "upgrade" to his landlord's trailer in 1999 while attending the music program at nearby Cabrillo College. During a year of gutting and rebuilding the interior—eventually transforming the rear bathroom into a control room—he turned cabinets and overhead bins into studio furniture, leaving a vanity intact. "I was just about to sledgehammer it," says Shanks. "I actually hit it once, and said, 'Shoot, maybe I can use this.' I measured it and said, 'Yeah, I bet I could put some [Yamaha] NS-10s and some racks in there.'"

The control room is centered around MOTU Digital Performer and a Mackie controller, with an Otari MX5050 and Revox B77 close at hand. Mackie HR824s complement the NS-10s, and outboard effects include spring reverbs, an Echoplex and an anthology of Universal Audio gear, from UREI EQs and an original 175 compressor to 1176 re-issues, from 610 pre's to UA's latest Precisions, 2192 converters and UAD-1 cards.

Shanks says that although he road-tests new gear as part of his day job as analog product specialist at Universal Audio, a lot of the classic units are his own; he insists that he has long been obsessed with vintage gear: "I was drawn to [UA] because of the whole Bill Putnam thing. I went down there and said, 'I'll do anything!'"

Adjacent to the trailer, a building about the size of a two-car garage houses a large (23x25-foot) vaulted live tracking room and three iso rooms. A window aligns perfectly with the trailer's rear window, allowing

line of sight into the main room; a snake connects the structures.

Dozens of vintage instruments are available: Tucked in Shanks' "guitar-moire" are assorted guitars, basses and keyboards, plus effects and amps. A Rhodes and tack piano, plus a Leslie, round out instrument and amp options.

The mic collection includes AKGs, Neumanns, Sennheisers, Earthworks and plenty of Shures, plus a refurbished RCA ribbon Shanks found in an old church loft. "It was smashed in a box at the bottom of a pile of boxes, but it still kind of worked," he says, adding that he had the mic re-ribboned. "It was a real score." Other scavenged treasures include an RCA rack with additional preamps and a McIntosh 240 power amp.

Isolation is not an issue out in the woods—the studio is set on a 10-acre parcel of land and the closest neighbor is about an eighth of a mile away—though Shanks admits that working in an aluminum room means tracking sessions occasionally get "rained out. If it's really pouring, it gets noisy on top of the trailer."

Although Shanks occasionally brings the trailer down the mountain for recording gigs in Santa Cruz, his time is generally spent at the mountain facility, recording and mixing projects for local and regional talent—mostly unsigned singer/songwriters and bands. In a small but rich music scene famous for cultivating such diverse acts as the Doobie Brothers, Camper Van Beethoven and Gillian Welch, he says he finds plenty of artists he connects with musically.

"I really like developing artists," he says. "I really like the sound of a band actually playing, and most of the time, I achieve the best results that way anyhow: The bands seem to be the happiest if we can just get it really good going in and have them play it live with minimal overdubs."

The Trailer Park Troubadours' lead singer, Antsy McClain, agrees. "All the vintage equipment and live room sound gave the songs an important 'hands-on' feel that I know will translate through to the finished product," McClain says. "And being able to spend three days in a vintage Airstream in the woods of Northern California? I can't even talk about it without getting all gushy. We intend on doing more tracks with Will, but now that he's getting all this press, we probably can't afford him anymore."



Will Shanks in the Airstream

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	48 kHz	24-bit	267 min.
	44.1 kHz	24-bit	290 min.



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Tune In, Stream On, Get It Out

Bonnaroo 2004 Keeps Going and Going and Going

By Maureen Droney

It's like nothing else: Three days, 90,000 fans, six stages and 80 bands, with music each day from noon to 4 a.m. It's everyone from Dave Matthews, Trey Anastasio and the String Cheese Incident to Bob Dylan, Gillian Welch, Wilco, Danger Mouse and Los Lonely Boys. For the recording, a crew of more than 40-staffed six mobile recording units and four on-site mix suites to cover 65 full sets—each two to four hours long. It's Bonnaroo, where jams rule and high-tech recording captures the magic.

At first glance, those two things might seem diametrically opposed: the laid-back gestalt of the jam band culture vs. advanced technical expertise. Not so. It's a brave new world out there, and multiple uses of content are the name of the game for musical artists intent on survival. At Bonnaroo 2004, held last June in Manchester, Tenn., 60 miles outside of Nashville, the absolute latest in technology was utilized to get those three-plus-hour sets recorded and ready for



L to R: Luther Dickenson of North Mississippi All-Stars, mixer Jon Altschiller, producer Hank Neuberger

distribution, ASAP, to fans.

"It's an interesting model," admits Hank Neuberger of Chicago's Third Wave Productions, who, with partner Terry Fryer and music producer John Alagia (John Mayer, Dave Matthews, Rachael Yamagata), served as producers of the mammoth recording endeavor. "We used new processes to solve some unique problems. To date [November 2004], there have been approximately 20,000 downloads of whole



sets on www.bonnaroolive.com. Now we're working on the CD and the DVD."

Alagia, Neuberger and Fryer had worked together at Bonnaroo 2003, where they produced the post-festival 2.0 and 5.1 DVDs, a double-CD and the recordings used for the soundtrack of the Bonnaroo movie. It was a big job, but 2004 shaped up to be even bigger.

"We'd been talking with the promoter about how the market for these bands has changed," Neuberger explains. "Rather than relying on a CD where each band got just one cut on a compilation, the fans also wanted whole sets. The obvious way to make that accessible was with digital downloads."

Once the decision was made to make downloads available as soon as possible after the performances, strategic planning began. It was decided that, in addition to capturing the audio, it would be most efficient to mix as much as possible on-site, where artists and their management were available to provide input.

"There were six stages where we recorded about 70 sets," continues Neuberger. "We hired six teams of mobile facilities [Big Mo's trucks, dubbed "Mabel" and "Shorty," covered two stages; and Metro Mobile, Tour-My-Studio, Tinder Arts

and Samsonics handled the other four]. Our first deliverable was a live mix from the six stages; a lot of that went over to XM Radio during the festival. After that, we took the multitrack recordings and remixed the full sets. Of course, being Bonnaroo, part of the challenge was the length of the sets."

Splits from each of the six stages fed a combination of Pro Tools|HD Accel and Tascam MX-2424 recording systems. The recordings, both multitrack and stereo reference, were collected on FireWire and SCSI drives, then brought to nine "ingest" stations: computers, set up to input the recorded material, with network connections to the AVID/Digidesign Fibre channel SAN, called Unity, that disseminated program material to the four mix stations.

Digidesign was a key partner in the recordings, helping out with a customized system installation for the mix suites. All four suites ran Pro Tools|HD Accel; two were fitted with Digidesign ICON consoles and two with ProControls.

"Digidesign brought down a semi truck's worth of equipment to outfit the mix stations, which were arrayed around the Unity," says Neuberger. "The four mix workstations, plus a number of editing and input stations, worked as spokes on the SAN.

—CONTINUED ON PAGE 66

TV on DVD

A Huge Market for Audio Restoration Pros

By Bryan Reesman

Who would have ever thought that releasing classic TV shows on DVD would become all the rage? The hottest trend in consumer releases has become a boon to the studios, a re-run cash cow that has found major companies such as Columbia Tri-Star, Fox and A&E re-issuing beloved vintage series including *Starsky & Hutch*, *Lost In Space* and *Monty Python's Flying Circus*. New shows are also benefiting: The first season of the canceled *Family Guy* reportedly sold 1 million units, prompting Fox execs to ponder reviving the show this year.

Yet while fans and critics wait for their favorite series to be revived digitally, and while the releases themselves are prone to sharp criticisms regarding the varying quality, the reality of remixing and remastering TV shows for DVD release is far more complicated than it would seem. Many series take a year or more to assemble. Source materials, when found, can vary radically in quality, as can formats. Some shows have film masters, others just video clones.

In the end, the quest to bring back TV on DVD is a bit like a treasure hunt with a lot of fool's gold to be found. But it can also reap big rewards.

TALES FROM THE CRYPT

Finding usable source elements has become the biggest challenge for studios in assembling full seasons of shows.

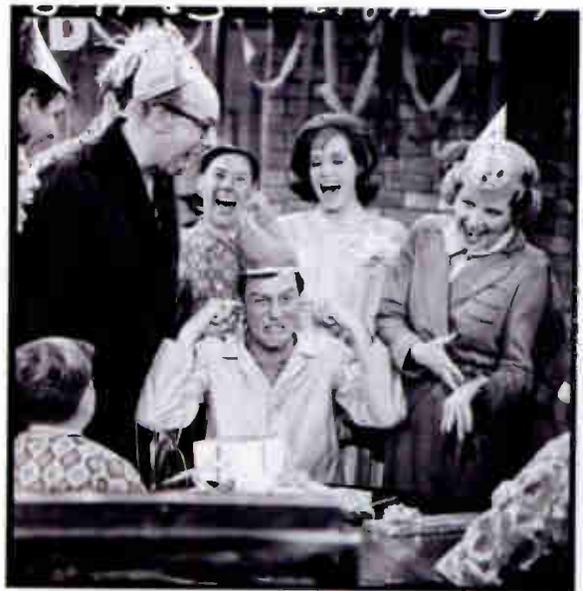


Ron Smith of Paramount

While programs from the past 20 or 30 years have generally been well-cataloged and preserved, many have languished in the vaults. Older ones, in some cases, have been erased or discarded because of limited storage space and a lack of foresight. Of those that are found, some, thankfully, remain untouched; others are worse for wear. Some companies like Paramount have extensive libraries with many preserved film prints, while an indie like Anchor Bay has worked off of high-quality video masters obtained through various licensors.

To assemble *Sledge Hammer!*, a 1980s crime series, Anchor Bay scoured vaults in Hollywood and beyond for video masters. "Some needed more work than others and they came from different sources: different studios and different labs," explains Bo Altherr, DVD production manager for Anchor Bay Entertainment. "Some people were holding this stuff in their vaults that was just sitting on a pallet. Then you have to follow the trail. Somebody knows somebody else. 'Hey, that might be over at Warner Bros.' Who knows why? Sometimes they don't know how they got it. Over the last five years of doing this, thankfully, people haven't transferred jobs too much, and I've gotten some pretty decent contacts in each studio, different labs around L.A., different contacts in the UK and up in Canada."

"Basically, it's [about]



The Dick Van Dyke Show

hunting down the best available source elements that you can actually use for telecine," states Kai Thomasian, editor for Image Entertainment. For a show like *Naked City*, Image lucked out and found prints in a vault with usable optical tracks, while CBS' materials for *The Twilight Zone*—with original camera negative and superb mag audio—were a snap to work with. For *The Dick Van Dyke Show*, "It was a really long, hard search to find the best source elements available," Thomasian explains. "At one point, someone had handed us some 16mm elements and they were just too far gone. We kept looking and looking and hunting around every vault around town. We were able to get all the good picture elements, but, unfortunately, the optical tracks could only be used as guide scratch tracks—and even those were kind of out of sync anyway."

While hunting for mag elements, the Image team found ¾-inch video dubs, then tracked down the 1-inch video masters and found the mag sound on those superior to the optical tracks. But a new problem arose: The film transfers included everything, even the commercials, but the 1-inch tapes were

cut for syndication.

"Every now and then, you'd either have half of a missing scene or right in the middle of a scene, it's different," explains Thomasian. "My job was to go through—after we received the film transfer masters, which were just finished telecines—and literally match every show up to the audio tracks on the 1-inch. Not cutting out the picture, but dubbing the 1-inches onto Digi Beta and then just matching the 1-inch to the transfer masters so we got everything that was originally in the show. If dialog or music were missing, I'd grab it from the optical and try to tweak it so it would blend together. At some point, it was almost cut-to-cut, and the audio was off anyway [because] the sync was out on the 1-inches. I had to go back and re-sync the shows; I got as close as I possibly could. After that, it



Sledge Hammer!

was [time to] stuff it into Pro Tools, because with the 1-inch, you've got a lot of hiss and pops and other things like that."

Often, select episodes of shows had been used and abused to the point where they needed serious restoration. Such was the case with *Star Trek's* original pilot. "The first episode, which is known as 'The Cage' [and] was cut up to make 'The Menagerie' into a two-part episode, was in the worst shape because it had been handled so many times," explains Ron Smith, head of DVD mastering for Paramount. He felt strongly about restoring the episode because a previous VHS release had distortion, and he discovered that one of the mags "was just falling off of the reel."

"So that's the show we started with," he continues. "Some of the source materials unfortunately were damaged, so we didn't have split tracks on the whole show. We had parts of the show that were in good shape and other parts where all we had was a composite track, so we really had to checkerboard it together basically using music from the show and parts of a soundtrack that had been released several

years ago. That was the hardest one to do and, of course, the one we did first. If we had it to do over again, I probably would have gotten a dozen or so under my belt before I tried to tackle that one."

LAUGH IN

One of the more quietly controversial elements of television is the laugh track. *Sledge Hammer!* creator Alan Spencer was so miffed by ABC executives' insistence on inserting a laugh track within the first 10 or so episodes of his show that when the time came to create the DVD, he asked for its removal. Thus, Anchor Bay's Altherr embarked on his own exhaustive audio quest for the comic cop show.

"Sometimes with season one, we had to do a lot of digging all over the place for workable elements," says Altherr. "That was a humongous challenge: to dig up some elements that were actually workable so they would be at the same level of quality as later episodes in the season. We took in calls from fans from around the world off of his [Spencer's] Website. A lot of people in the UK and some people in Canada sent us videotape. We looked at the logo to see if it was in syndication, what was the original airdate, because people were taping them back in the mid-'80s. So we were comparing what they were seeing and then trying to track down from the television studios, where it was currently airing, to see if we could get clones of those masters."

Getting the video masters was one thing, but getting rights to use them was another. "You run into trouble because the licensor [who has] the video rights for *Sledge Hammer!* doesn't own the license for the syndicated TV airing in North America and/or abroad," says Altherr. "So then you've got to call and ask for permission from other studios and other sources; some are cooperative, some aren't."

He and his co-workers had to find mixes with separate M&E tracks that would allow them to remove the laugh track. "[For] some of the episodes that had the laugh track on it, we were combining three different elements for the exact same episode to get one clean, finished DVD master," Altherr reveals. "We went scene-by-scene sometimes, depending if one sounded better than the other. It was just a big jigsaw puzzle, trying to put that together episode by episode."

Altherr admits that *Sledge Hammer!* was probably the toughest show Anchor Bay has done so far. "But the good news going into season two is that we already have good elements and there are no laugh

track issues."

For shows that keep their laugh track, the question of mixing can come into play, and that can also help rein in other audio elements. "We transferred the half-inches on *Taxi*, *Mork & Mindy*, *Happy Days* and *Laverne & Shirley* and made them all sound consistent," says Smith. "We normalized the dialog levels. Some of the laugh tracks were obviously way too hot and we would equalize them. And they end up sounding a lot better. Even though this is not remixing or spatializing or doing all the wild things that we do to make 5.1 tracks, it's just as important and just as gratifying to make a good mono track and make it sound as good as possible."

SNAP, CRACKLE, POP!

With many mag tracks being decades old, noise and hiss are inevitable. Modern technology allows audio engineers and editors to clean up these problems. "We're actually able to control some of the [audio] distortion and go scene-by-scene and correct levels," remarks Altherr. "We can take out little ticks and pops. We go through every show, whether it's 30 or 60 minutes, and put it through a sweetening processor to correct those things."

Anchor Bay has a "sound doctor" at Crest National in Hollywood "who picks this stuff apart mercilessly," says Altherr. "After he's gone through it and I've got the QC report, we go over what we have to fix. He puts down severity codes on the levels as far as problems. We take care of all the major ones up front, and then we go back into an extra sweetening session, dependent on the level and how much time and money it's going to take. That's why we search so long and hard in the beginning to get the best elements possible."

After cleaning up the audio tracks comes the decision of whether to give them 5.1 mixes. Thomasian says that Image has not created surround mixes for shows originally done in mono because they do not sound good. "It's more of a purist stance," he asserts, adding that television studios did not have stereo or 5.1 sound in the '60s. "We try to preserve the original presentation as much as possible, and that's been the credo around here. With the exception of the commercials, everything is like being there [in the original era]."

Some older shows can work well with a surround remix and a lot of nuances in old mixes can come to life in a new audio format. Smith acknowledges this in the case of the original *Star Trek* shows with their ambiances and atmospheres, "just

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World Radio History

by virtue of the fact that you're separating things that had always been married or in 2-channel." At the same time, Paramount included the original mono track for fans that expect to hear it.

Problems existed with some of the original *Star Trek* mag tracks. "After a dozen episodes or so, they just didn't sound very good," admits Smith. "Some of the voices sounded like you were hearing them through a transistor radio. We noticed that there were other sound elements that were on half-inch tapes. At first glance, it appeared that they were a shorter version, a syndicated version, but we pulled a number of them and it turned out that they were the network version from the original scoring stage sessions and sounded much better than the mags. The mags were basically what everyone has heard forever, so these half-inches had never been used from what I could tell. With half-inch tape that's 35 years old, they start to shed when you play them, so some of them had to be baked to get a good play or two out of them and restored and transferred onto a piece of safety tape or some digital format. After that, when we realized we had something to pick from, we would listen to the mag and listen to the half-inch, and most of the time, we ended up using the half-inch. That was very gratifying. We were in a lot better shape than we thought we were."

The newer *Star Trek* series were a different matter. Smith reports that *The Next Generation* was a fairly advanced show that went Dolby Surround part-way into the series. "There are stereo tracks for the first three-and-a-half seasons and then they're all Dolby Surround," he remarks. "There is already a center channel and dialog and left and right and a surround track, so all we really needed to do was make a stereo surround and make sure that there's something coming out of the boom [and] put the low frequencies where they should be."

Smith adds that Paramount was lucky to have digital multitrack mixes for all of the newer *Star Trek* series. "They mixed those digitally, although they ended up being analog laid back to 1-inch tape or D2, which is composite rather than component video," he remarks. All of the recent *Star Trek* shows—*Next Generation*, *Deep Space Nine* and *Voyager*—were mixed in digital. "We took the digital masters that they had made, but no one had ever heard before, and make 5.1s from those. We really had the basic elements and that wasn't really a stretch. That was sitting there crying out for someone to do."

TELEVISION TREASURES

With the TV on DVD boom in full force, shows from every decade of television are surfacing on retail shelves. And for the dedicated crews who work on them, it is gratifying to see the public shelling out the bucks and showing devotion for their hard work. Money aside, for many of those involved, this is a true labor of love.

"I think if anything, a lot of the guys who are doing it and remember watching these shows when they were growing up feel like it's a responsibility to make sure that you do the best to the material because you tend to have really good memories—if you enjoyed the show," remarks Thomasian. "You feel like there is a responsibility to make it the best it can be with the given time and money that you're allotted. It's a whole lot of fun and a real challenge."

And for pop culture nostalgists and collectors, it's a real treat. ■

Bonnaroo

—FROM PAGE 62

Ganon Kashiwa, senior hardware products manager for Digidesign, came down to help out. He had a great perspective on what could be done with the SAN and the consoles."

"I went to Bonnaroo to be the front-line instructor on the ICON to the guys who were mixing," comments Kashiwa. "Hardly anyone had seen one before, so I wanted to be there to give them all the support they needed."

Prior to the festival, an advance setup of the system was staged at Digidesign's Menlo Park, Calif., manufacturing headquarters. "We roped off a big space," explains Kashiwa, "with 15 Pro Tools systems for the ingest stations, the mix stations and the Unity system. We recorded material and sent it station-to-station to ensure that the interchange was working. We mounted and unmounted numbers of drives on the systems, transferred them to the Unity system and then deployed sessions to mix stations and upload stations, ensuring that the information transfer from what was going to be field recorders was robust enough."

Once on site, the system took approximately three days to assemble. During the show, as each set finished, hard drives, along with set lists and CDs of the rough board mixes, were delivered, either by golf cart or sneakernet, to the main production compound. After being logged in, the hard drives went

to Bonnaroo data manager Azuolas Sinkevicius, who supervised inputting the recorded tracks into the SAN. Once loaded, the program material was in-line for mixing at one of the four suites manned variously by mixers Neuberger, Alagia, Jon Altschiller, Doug Derryberry, Sam Fishkin and Chris Shepherd.



Ganon Kashiwa at the ICON, day of show

"It was immensely helpful that [working with DAWs] we could stop at any time," points out Neuberger. "If an artist came into the trailer to listen to something we'd mixed earlier, we could stop what we were doing and instantaneously pull up their mix. And because we were working on the SAN, if for some reason we needed to move a project to another suite, it was easy."

Once the mixes were finalized and automated, the actual process of laying down the finished two-mixes was, in most cases, moved to a separate location, freeing up the consoles to start mixing the next band's set. Ultimately, approximately 16 sets were mixed on site. Neuberger notes, "We were able to pretty quickly generate reference CDs for the bands—some, like for My Morning Jacket, Dave Matthews Band and North Mississippi All Stars, during the festival; most of them right after. At the same time as we were mixing, we also had some of our staffers inputting rough mixes from the CDs into an iTunes library. It was an easy way to organize them and be able to burn reference CDs. As we completed remixes, we also put them in. That really helped: At an event like this, there's always a demand, for weeks afterward, for reference CDs."

Data management, of course, was key. "We came home with about 9 terabytes of audio," says Neuberger with a laugh. "Remember, we had not only recorded material, but also set lists, band photos and CD two-mixes for reference. It wasn't

just capturing the performances—we also had to be able to find and identify all the songs. At festivals, it's really hard to get accurate set lists; you often have to go back after the fact to get titles. There was a lot of information to manage: some of it digital, some of it on paper."

Katie Friesema, of Chicago's Production Consultants Guild, a software company created by Paul Bradley and Dave Matthews Band monitor engineer Ian Kuhn, served as the project's librarian/air traffic controller. Friesema and her assistant, Dave Matthews Band's archivist Tucker Rogers, were charged with figuring out, in advance, what to keep track of and how to coordinate data flow. "I sat down with Terry Fryer and we talked about what the needs of the database would be," Friesema recalls. "We tried to anticipate what all the problems would be and built around that. We also ended up tweaking it quite a bit on-site. Every time a set list would come in, we'd enter it with individual mix numbers. Then every time a mix was done, we would enter in the new version of the song with a unique number for it. On top of that, we kept track of what part of the process we were in with each song. We could look at one page and see who was

mixing what, where."

Thirty-six 250-gigabyte FireWire drives were premarked and tracked through the process. As it turned out, there weren't sufficient SCSI drives on site, so material recorded to SCSI had to be unloaded to the servers. "That was more complicated," notes Friesema "Those drives were wiped and sent back to be re-used."

Post-production mixing took place at Third Wave Productions in Chicago and at Chiller Sound in New York City. "The sets were not only remixed—either on site or in post-production—but also sent to the artists for approval," Neuberger notes. "That's why these mixes are so good: We got to remix and the artists had the chance to approve them.

"We had 43 people on this working 'round the clock," he adds. "The SAN was key to the concept because the goal was to be able to generate content on livebonaroo.com within a week. It took a few more weeks to get artist approvals for more sets. Now [in November] there are about 30 bands' sets up on the site, and we're far from done. The compilation CD is scheduled for a January release. We're also working on mixes for the DVD, which is

scheduled for a February release."

Even with months of advance planning, the trial run in Menlo Park and hours of brainstorming about possible pitfalls, there were, unavoidably, plenty of surprises: air conditioning failures (in June in Tennessee!), power problems and, of course, what would a festival be without rain?

"There was rain both days, which affected getting material back and forth from the trailers," says Neuberger. "The air conditioning in one of the trailers failed and we thought the Pro Tools system would overheat. It came close, but we brought in fans and moved some equipment around and we were okay. We were short a forklift loading in, our data manager missed his flight when the airlines messed up his reservations, we had 40 people flying in on tight schedules so it was very nerve-racking. The hotel situation got messed up too, but it didn't matter much because no one slept!

"All in all, it was a daunting challenge that never let up. In the end, we really broke some new ground. It's really amazing to consider that the technology to do what we did this year did not exist two years ago." ■

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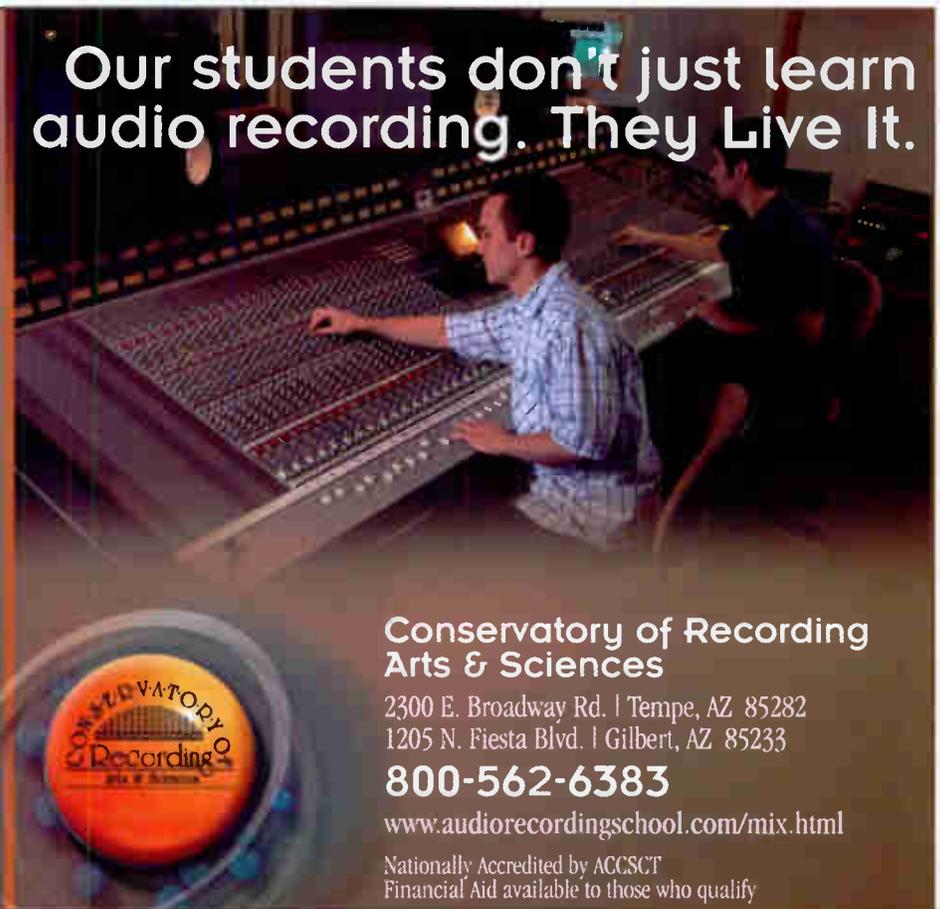
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Trans-Siberian Orchestra



Text and Photos by Steve Jennings

The Christmas creation of the Trans-Siberian Orchestra is the brainchild of producer/composer/lyricist Paul O'Neill and musical director Al Pitrelli. *Mix* caught the show in late December at San Jose, Calif.'s HP Pavilion. "It's a show of brilliant talent and high-level emotion of 22 performers, including a six-piece rock band, an eight-piece string

orchestra, eight lead and backup singers and a narrator that all provide a wonderfully creative environment for me to translate," says front-of-house engineer Billy Crater.

Crater is using a dB/Sound Image-provided X Array system comprising 24 boxes flown per side, 12 subs on the ground and six front-fills across the stage. In addition, an array of eight cabs hung midway are used as a delay stack for rear coverage. The engineer relies on a Midas Heritage 3000 with 48 inputs and a Yamaha O1V for effects and CID return, for a total of 60 inputs. "I use an IBM laptop that uses XTA AudioCore management for crossover settings, zone level control, EQ control and section delay control," Crater says. "The system also has a wireless pad for remote adjustments. In my rack are a Lexicon PCM70 for drum 'verb, a Yamaha SPX-990 for delays, a TC Electronic M1 for vocal reverb and a D2 for other delay effects. Also included are 10 dbx 160X compressors for vocals, bass and keyboards."

Monitor engineer Billy Head provides sound for all amps, drums and keys (there are no stage amps), with eight vocal mics, three drum mics and the string section through a Midas XL250 console into mixes of floor wedges and sidefills.



Front-of-house engineer Billy Crater

FixIt

Howard Lindeman

With numerous engineering stints at Record Plant and Hit Factory, Howard Lindeman takes his engineer/mixer experience to his current front-of-house position for Roberta Flack and Melissa Manchester. He'll also be mixing for Mark Isham at the upcoming North Sea Jazz Festival in Holland.



When you're working with a vocal-oriented artist or group, time is a major factor. A fix for placing a vocal in a group is to assign all instrumentation to two groups so that the stereo image remains the same as it was in the stereo bus. Bring those up to two group-out masters panned hard-left/right. Leave *all* of your vocals, lead and backgrounds on the stereo bus. Insert a digital delay on the left and right of that stereo group and increase the delay setting between 2 and 6 ms for left and right. (Remember to turn off any feedback gain settings.) You can then tune the distance between the band and your vocals. Then, time-delay your entire P.A. back to the drums using the delay inside the house crossover or EQ.

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News



The Nordic Music Awards (Oslo, Norway) celebrated the region's musical talent using Alcons Audio line array cabinets and subs.

The ET Live musical event (Las Vegas) featured jazz/fusion band the Papamichael World Group who played, in part, to demonstrate the benefits of using varied concert equipment in a live setting. Featured were QSC's ISIS Widelines (flown inside the left/right stage), four ISIS PCM215 subs onstage and four 18-inch MD-S218 ground subs, while Yamaha provided a PM1D for FOH and a PM5D for monitors...3G Live (La Habra, CA), a newly established SR company headed by Chicago's 3G Productions, took delivery of 24 L-Acoustics V-DOSC, 12 dV-DOSC loudspeaker systems, 16 SB218, four dV-SUB sub enclosures and 24 new 115XT HiQ floor monitors, which company VP Jay Curiel says, "stunned [me with] its clarity and punch. We've found that they require almost no tweaking to sound great..." Studer announced that Denmark has received a custom-built Vista 8 digital console as part of the new Copenhagen Opera House. The unit features two movable FOH control surfaces and is connected to the control room via fiber-optic cable. The new building, which opens this month, is located across from the royal palace of Amalienborg, on Holmen; it was designed by Danish architect Henning Larsen and acoustically designed by Arup Acoustics.



Projects and Installs

DPA Mics Bang on Cans

Founded 16 years ago by three contemporary composers (Michael Gordon, David Lang and Julia Wolf), Bang on a Can recently showcased its latest piece of musical theater, *Lost Objects*, which was performed at the Brooklyn Academy of Music by a 30-piece baroque orchestra, a rock band and three operatic singers. Front-of-house engineer Jody Elff relied on DPA 4088 miniature cardioid headband mics to highlight the show's three lead singers. "The three headset mics were able to handle the tremendous SPL generated by the three operatic singers, isolating those critical sonic elements from the surrounding wash of sound."



Johnny Lang and his band perform at the Vault 350.

The Vault Opens With New System

Located in a 1920s bank building, Long Beach, Calif.'s Vault 350 sports a new sound system, which includes more than 110,000W of Crown Macro-Tech power driving a full JBL VerTec VT4888 line array and a pair of Soundcraft Series FIVE consoles (both FOH and monitors) provided by Michael Warren at MW Audio (L.A.). Production manager Pat Pennington says, "We set out to create the new standard for a nightclub system here and we've achieved it. I have to really hand it to Mitchell Stewart, who owns the club. He valued our opinions on what equipment we felt needed to go into this venue to really take it to the next level."

Now Playing

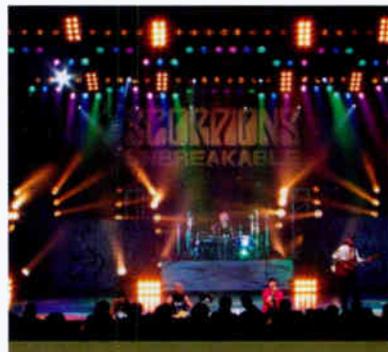
Scorpions

Sound Company: PRG Audio (Las Vegas)
FOH Engineer/Console: Aachim Schultze/Midas XL4
Monitor Engineer/Console: Barry Foy/Midas Heritage 4000

P.A./Amps: L-Acoustics V-DOSC, dV-DOSC, ARCS, SB218 sub/Lab.gruppen LA-48, Crown VZ5000
Monitors: ProMix Electrotec SM115, SM112; L-Acoustics ARCS and dV-SUBS powered with Crown VZ5000 and 36x12

Outboard Gear: Eventide H3000, Lexicon 480L, BSS DPR-901, Yamaha SPX-990, TC Electronic M3000, Drawmer DS201

Microphones: Sennheiser, Shure, Audio-Technica



Robert Randolph & The Family Band

Sound Company: OmniTech (Saratoga Springs, N.Y.)

FOH Engineer/Console: Sean Quackenbush/DiGiCo D5 Live

Monitor Engineer/Console: house-provided/Midas XL3

P.A./Amps: house-provided, usually a VerTec/Crown
Monitors: Sennheiser IEM300s with Sensaphonics 2SX buds

Outboard Gear: UREI LA-4, Lexicon PCM91, Eventide H3000, TC Electronic D2, dbx 166As

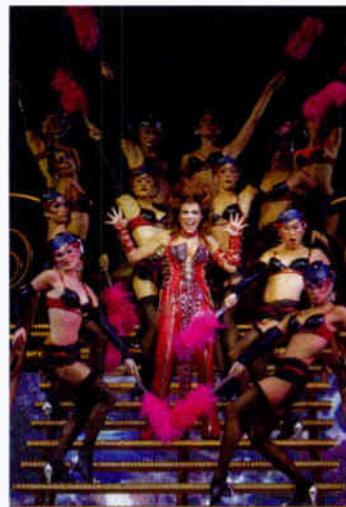
(drums/keys) and 165As (bass), Drawmer DS404 (toms), Marantz CD-R 630 for archives

Microphones: Sennheiser Evolution 935 (vocals), E865 (guest vocals), 602 (kick), 604 (toms), E614 (overheads, hi-hats), E903 (snare), 903 (Leslie top), 421 (Leslie bottom), E609 Silver Edition (guitar cabs), Countryman DI (bass), E602 (bass)



Queen's Music Hits the Theater Stage, Rock 'N' Roll Style

Theatrical producers Robert De Niro, Jane Rosenthal and Phil McIntyre; Queen's Brian May and Roger Taylor (musical directors); and sound designers Bobby Aitken, David Patridge and Richard Sharratt are part of the Paris Las Vegas opening of *We Will Rock You*. The production, which focuses on a future world in which musical instruments are outlawed, uses Queen's greatest hits as its soundtrack. The show's venue, the 1,450-seat Le Théâtre Des Arts, features an L-Acoustics rig provided by Masque Sound (East Rutherford, N.J.) comprising twin left/right hangs of 10 V-DOSC cabinets with two dV-DOSC applied to front-fill. Ten additional dV-DOSC are flown in a center array, while four co-ax MTD108a systems provide coverage for the rest of the audience.





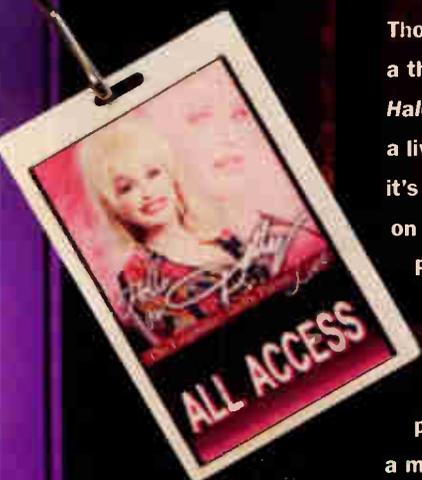
Photos & Text By Steve Jennings

Though country superstar Dolly Parton played a three-month club tour in 2002 to support *Halos & Horns* (which has been captured in a live DVD and double-CD, *Live and Well*), it's been almost 10 years since she went on a major concert swing. According to Parton (www.dolly.net), "I realized how much I missed the road and how much the fans seemed to have missed me."

This year's Hello, I'm Dolly tour, while playing at large-capacity arenas, goes for a more intimate feel for her fans as she plays

classic hits from her extensive repertoire, such as "Jolene," "9 to 5" and "I Will Always Love You," in addition to material from her upcoming release, *Blue Smoke*.

Opening up for Parton are Nashville-based The Grascals (Terry Eldredge, Jimmy Mattingly, David Talbot, Jamie Johnson, Danny Roberts and Terry Smith), who also backed the formidable singer/songwriter on the new album. *Mix* caught the second Bay Area date in Sacramento, Calif., at the ARCO Arena in mid-December.





Monitor engineer Bryan Vasquez (pictured to the right) is using a Midas board—an XL250—running 11 wedge and two in-ear mixes (Shure 700 Series) through it. All 14 EAW SMT2 wedges (inset) are onstage and powered by Crown Macro-Tech amps and BSS crossovers. Guitars run through a mix of AKG and Audio-Tecnica wireless units. Parton sings through a headset AKG 420c with a 400 Series wireless transmitter.

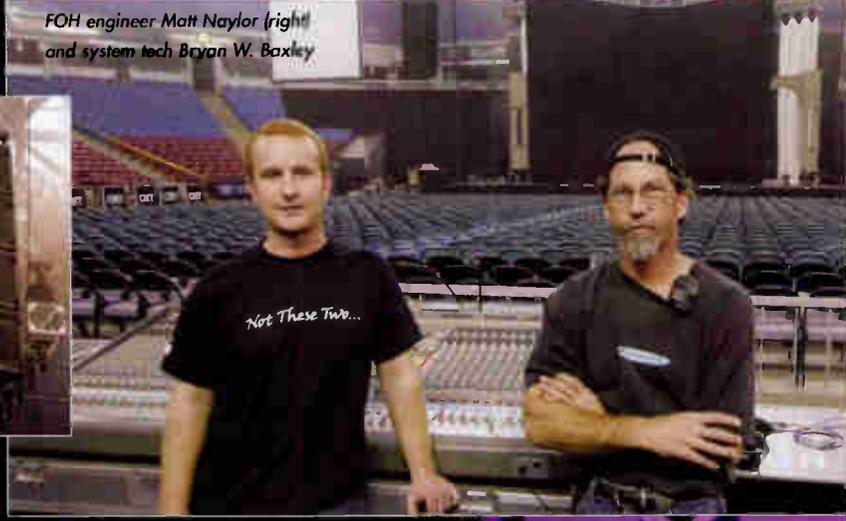
"There is minimal processing outside of the LR Baggs preamps that we use on the banjo and mandolin," Vasquez explains. "Dolly and her band are top-notch. They are so easy to work with."



The P.A. for this tour is provided by Morris Leasing (Nashville), for whom system tech Bryan W. Baxley (pictured to the right) works.

"We're hanging 16 to 24 EAW 750 per side with 755 down-fills powered by Crown Macro-Techs, depending on the room," he explains. "We have two EAW 750 per side stacked on top of the subs, and we have four EAW EP-3 on the downstage floor. We use SIA SmaartLive to tune the P.A. and use ourselves to shade it.

"It has been a pleasure to work for Dolly," Baxley continues. "She's very business-like and yet very personable. She is the best!"



FOH engineer Matt Naylor (right) and system tech Bryan W. Baxley



Front-of-house engineer Matt Naylor is using a Midas XL3, citing the board's "warm" English sound and EQ features. "I basically set the mix making sure Dolly is always on top so that it's the same, but she makes it easy because she is very consistent every night. On the main system, I am using all Klark-Teknik Helix EQs and a Manley Vari-Mu compressor. I don't use any compression on her vocal. I had an ATI inserted on her vocal but found I didn't need it—she has great vocal and mic technique. I use PreSonus comps and gates on bass guitar and drums.

"They are all pros onstage and have a good tone," he continues, "so it's easy to get a good sound out of them; it makes my life easy out front. As far as Dolly, all you can say is, 'Wow, what a pro!' No attitude, always gives 100 percent onstage and is just fun to be around."

avril lavigne



"Punk" Princess Grows Up Onstage

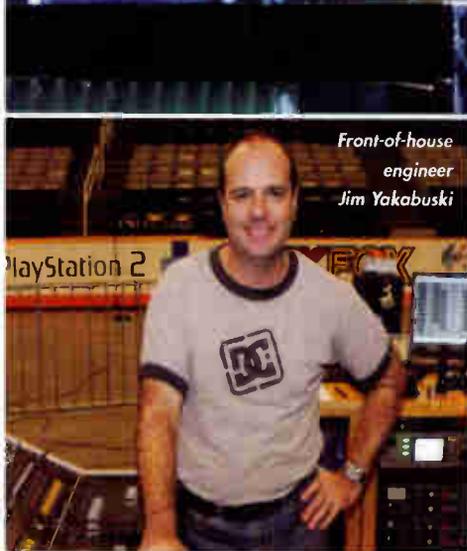
When Canadian pop-rockers Avril Lavigne stormed onto the music scene in 2002 with her multi-Platinum debut album, *Let Go*, millions of teenage girls—perhaps those not quite into Britney and not quite into Christina—were immediately entranced by her radio-friendly lyrics and easy-to-dance-to melodies, with a more punk edge than her pop counterparts. With eight Grammy nominations under her belt, Lavigne released her second studio album, *Under My Skin*, this year, which found the chart-topping vocalist garnering an even larger fan base, who came out in full force for her surprise mall tour. (Think early-'90s Tiffany.) A few months later and with *Under My Skin* hitting the Top 10 on *Billboard's* pop charts, Lavigne's Bonez tour took a drastic upswing—hitting large-scale arenas worldwide.

After a monthlong jaunt through Europe (with a universal package comprising mixing consoles, processing racks and such from Major Tom), Lavigne cruised through the States for a quick two months, playing just about every day. The U.S. tour offers the same equipment package as the European dates, with the speaker system supplied by Jason Audio (formerly part of SoundArt). *Mix* caught up with the arena tour in late November at San Jose, Calif.'s HP Pavilion.

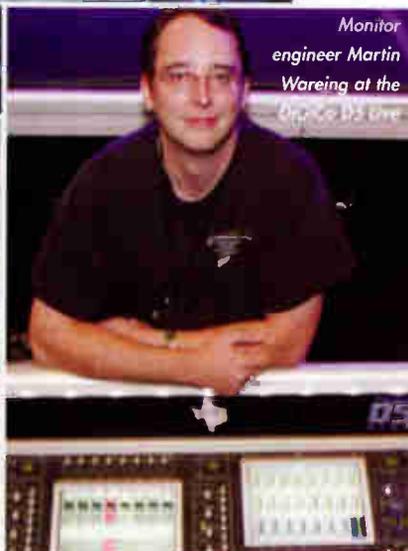
NEW TECHNIQUES IN LAVIGNE'S CAMP

For front-of-house engineer Jim Yakabuski, who finished up the last three months of Lavigne's previous jaunt when then-FOH engineer Mark LeCorre went off to start Dido's tour (see *Mix*, July 2004), Lavigne's current outing provided an opportunity to fly an interesting combination of line array clusters. Yakabuski is using Meyer Sound's MILO speakers and flying a standard left/right array of 16 MILO 90-degree boxes with two MILO 120s on the bottom. He also flies two (inverted stereo sends) left/right side arrays, usually about 10 boxes each. "The unique part of the system is the single line of center sub-bass speakers," he explains. "We fly 12 subs in a single line in the center just downstage of the front truss of lights. The only other subs used are two ground-stacked subs directly below the flown array. The only variation to this theme occurs on days when the trim height is minimal; in this situation, we fly a 2x6-deep center sub-cluster.

"The results have exceeded expectations



Front-of-house
engineer
Jim Yakabuski



Monitor
engineer Martin
Wareing at the
Dido's Live

PHOTOS: STEVE JENNINGS



The Meyer Sound MILO P.A. comprises 12 subs flown in a single line in the center with a standard L/R array of 16 MILO boxes with two 120s on the bottom.

beyond my wildest dreams," he says. "The single vertical point source of subs in the arena eliminates the drastic lobing and nulling of sub energy that occurs in standard left/right flown or stacked sub clusters. This has been a constant sore spot with me for years, and I've been waiting for the right opportunity to try the mono sub cluster for a long time. The consistency of sub level from the FOH position into the seats and all the way around the arena has to be heard to be believed. The only tough spot is about halfway from the FOH position to the stage. The timing and volume of the two ground-stacked subs are critical, and finding the spot where the flown subs cut off as you walk toward the stage is the trick. Placing the reference mic [a Josephson C550H] on the ground at this location and then turning on and timing the ground subs to this location seemed to be the solution."

In addition to trying out this new P.A. arrangement, Yakabuski is mixing it up with his boards: Rather than using a tried-and-true analog mixer, the engineer brought out a digital desk—a DiGiCo D5 112EX. "It's hard to pin down whether the mixer is the sole reason for the much improved audio experience this time around with Avril [the previous tour used a Yamaha PM1D], as we've also switched speaker systems, but the sound of the entire system is great and the trade-off for real estate at FOH, onboard compressors and gates that work wonderfully, and save/recall capabilities makes us very happy that we went digital. We've only had the tiniest of glitches and some of those have

been due to me learning to make the mental switch from analog to digital. I have outboard effects [such as Lexicon 960, PCM90 and PCM80; Eventide Eclipse; and two TC Electronic D2s], but that is a bit of an old dog not being quite ready to learn all the new tricks. I use scene snapshots for each song, making very small changes of channel muting and MIDI program changes only."

Yakabuski relies on an assortment of mics—from Sennheiser, Neumann, Audio-Technica and Shure—to amplify individual instruments. For example, Matt Brann's drums are miked with Shure SM57 (snare top), Sennheiser e903 (snare bottom), Neumann 184 (hi-hats, ride and overheads), Sennheiser e908s (prototype small dynamic clip-on tom mics "that sound great and have a great isolating shock-mount," Yakabuski says) and Sennheiser e602 and e901 (both on kick). "The e901 is similar to the Shure 91, but give it a listen," Yakabuski urges. "It sounds fantastic." Charles Moniz's bass is taken DI.

Lavigne sings through a Sennheiser Evolution 935 wireless, which Yakabuski really likes "for its neutral, almost flat, frequency response and its rejection of noise around it onstage." Guitarist Craig Wood (former member of Canadian punk band Gob) and guitarist Devin Bronson use Sennheiser e935s for background vocals.

Onstage, Lavigne demonstrates her new guitar skills by picking up both acoustic (taken DI) and electric guitars (miked with a Sennheiser e903) on five songs. For "Slipped Away," "Together" and "Forgotten," Lavigne takes a seat behind a piano (which is taken direct via MIDI module) and even pounds on the skins to cover Blur's "Song 2"; opening act Butch Walker (who co-produced *Under My Skin* and is out touring in support of his new release, *Letters*) handles vocals during this tune.

GOOD TIMES ALL AROUND

Monitor engineer Martin Wareing is also using a D5, relying on his past experience when he used the board for eight months on Robbie Williams' last tour. "I enjoy the flexibility of the D5," he says. "It allows me to lay out the inputs of the desk so I have everything very close at hand. I also use the onboard dynamics and effects, which gives me a very compact work area. I do augment my reverbs with three TC Electronic M2000s."

Wareing joined Lavigne's camp back in February 2004, fresh off of Williams' tour. He has mixed monitors for Williams for the past five years and brings

his experience of mixing a known vocalist with an ace band to Lavigne's camp. "For Avril's band, I give each of them an overall mix of the show with an emphasis on the instrument they play. I image each mix by panning the inputs in relation to each musician's position onstage and use a lot of very subtle reverbs to create a bit of space for their instruments to make it sound a bit more natural and less direct, which can happen with in-ears."

Lavigne and the band are all using Ultimate Ears UE5 earpieces and the Sennheiser Evolution G2 Series in-ear systems. "I also have a pair of wedges and two MSL 4s flown on each side," Wareing continues, "primarily for Avril's vocal. The speakers onstage give an added dimension to how Avril hears her voice onstage."

The tour now heads to Japan, Southeast Asia, Australia and then back to Europe and the U.S. for another string of dates. Lavigne also plans on heading back into the studio in the near future to begin production on her third release. ■

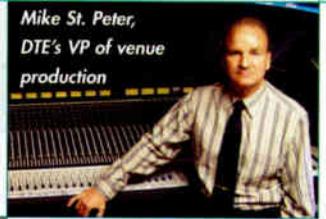
Sarah Benzuly is Mix's senior associate editor.



DTE Energy Music Theatre

UPDATING A TOP MIDWEST SHED

By Steve La Cerra



In the cold of winter, it warms my heart to think of outdoor summer gigs: bike rallies, outdoor festivals and, of course, sheds! One stop I have been making annually with Blue Öyster Cult for many years has been the DTE Energy Music Theatre in Clarkston, Mich. Formerly known as Pine Knob, the DTE Energy Music Theatre is “the outdoor summer stop” in the Detroit area for national acts. A shed-type amphitheater, the theater can hold 7,212 attendees seated under the roof and space for another 8,072 on the lawn area.

As Blue Öyster Cult rarely travels with production, I have always used DTE's in-house P.A. The venue's racks and stacks are augmented with a Yamaha PM4000 in addition to Yamaha, Roland, dbx, Drawmer and Aphex processing furnished by West River Light and Sound in Sanford, Mich. No question it was a pro rig (flown EAW KF750 cabinets) but I always felt like I was in that scene from *Star Wars* in which Han Solo tries to make the jump to lightspeed in the Millennium Falcon: I'd hit the gas but not much would happen. It seemed like I was always pushing the amps to the max, especially in the bottom end. (Maybe the venue was trying to tell me to keep the SPL down!) During the summer of 2004, I returned to DTE with BÖC and was delighted to find that DTE Energy Music Theatre's VP of venue production, Mike St. Peter, had completed a new install. The differences were anything but subtle.

St. Peter's tenure as the venue's chief engineer goes back 16 years when it was Pine Knob. He explains that when Palace Sports & Entertainment took over the venue, it was “just a shell with a lot of hard surfaces and a bit of boominess. We softened things up, starting with the stage house, by placing Sonex on the side and back walls all the



MBI Products' Lapidary Panels installed in DTE Energy Music Theatre's ceiling help reduce reflections. Also shown is the venue's new EAW KF760/761 line array.

way [45 feet] to the ceiling. We also installed heavier curtains. The structure is what they call a ‘stick building,’ with 2x6 studs on 16-inch centers across the back. We were able to cut the Sonex, place it within the 2x6s and cover it with material so you can't see it. To eliminate any possibility of vibration-induced noise, the stage-left and stage-right wings were isolated from any hard structure and half-inch rubber was used for the surface of the wings.

“Initially, our goal was getting the stage volume under control. As a front-of-house engineer,” St. Peter tells me, “I appreciate that you need to get monitor levels down to where you can't hear the monitors out front. By softening the stage, the monitor engineer can get the stage volume needed to make the band happy, without creating all the reflections that muddy the front-of-house mix. Those changes helped tremendously and gave the front-of-house engineer more control over the mix. From there, we started a progression of fine-tuning, such as softening the surfaces within 25 feet of the speaker arrays to help reduce early reflections. My mentors were Don and Carolyn Davis [founders of Syn-Aud-Con], who were very big on dealing with the effects of early reflections and anything that transmits unwanted noise into

the listening area. I tried to incorporate many of their ideas into the building.”

Keeping monitor spill out of the house was a great help to FOH engineers—including myself—but there were still plenty of reflective surfaces to address, including the venue's ceiling. “We wanted to do the same thing with the ceiling,” continues St. Peter, “so we got MBI Products [Cleveland] involved and decided to use their Lapidary Panels to treat the ceiling. These are 4-foot-wide panels with a perforated surface baffle and

a glass-fiber interior. Those were hung from the ceiling, but they weren't placed directly against the ceiling—there is a space of roughly 18 inches between the ceiling and the panels. Any sound that passes through the panel hits the ceiling and has to again pass through the panel before reaching the listener, which helps reduce ceiling reflections even further. Those panels gave us fairly broad [band] absorption, but really helped the 600Hz boom in the venue. It also made the room more pleasing, with increased directionality from the speakers. Now, you could actually identify the location of the sound source instead of wondering where it was coming from!”

When I mention the fact that the KF750 system seemed under-powered, St. Peter admits, “The room was a bit too big for that system and maybe we had too few cabinets. Of course, we were faced with the problem that once you bring too many cabinets into a room, they begin to interfere with each other. So we moved the KF750s over to the Meadow Brook Music Festival on the campus of Oakland University [Rochester, Mich.] and brought in a new EAW KF760/761 line array for DTE. We still use 16 KF750 cabinets for the lawn system [the system that covers the lawn seating where the roof ends], but now we

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The tools of the trade.

DTE Energy Music Theatre

have eight KF760 long-throw cabinets per side, plus two KF761 'near-fields' at the bottom of the array. This is augmented by eight SB1000 sub cabinets per side stacked on the deck and eight EAW JX800s across the front of the stage for front-fill. We didn't need the JX800s as much with the new system, but they brighten up the system and keep vocals present for the audience in the first 10 or so rows."

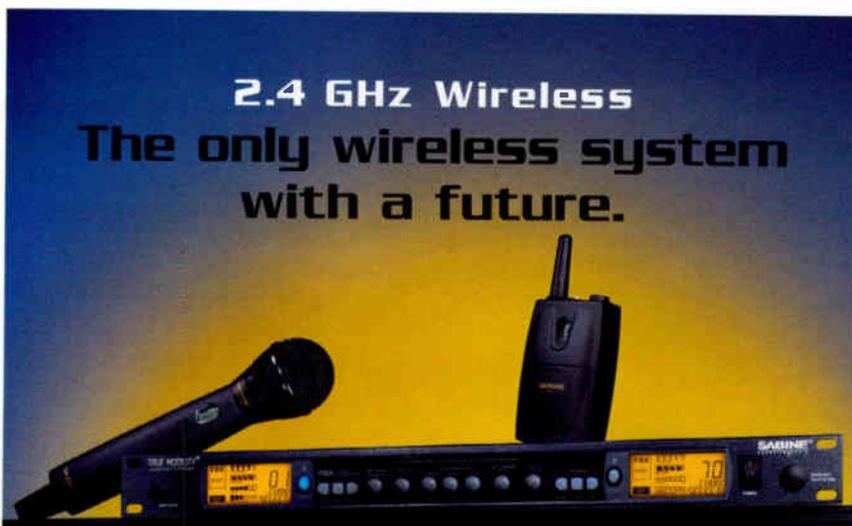
In addition to the KF760/761s, St. Peter added eight Crown Macro-Tech 5000s for the subs. Interestingly, power for the lows, mids and highs is the same for the new array as it was for the KF750s (Crown Macro-

Tech 3600, 2400 and 1200, respectively), but the difference in headroom is striking. This year, for the first time, I had plenty of headroom while mixing BÖC, even with the volume level near 105 dB at FOH.

"With the 750s, we were always running up to peak," St. Peter explains. "The first thing we noticed with the 760s and the 761s is that we are probably using half the power. The amps idle along now. The KF760 is a 5x90-degree cabinet. They target a much smaller area and are more intense within that soundfield. We have always taken a proactive approach to the issue of noise control, and as long as we

are careful not to fly too high, we don't disturb our neighbors.

"When we purchased the system, Mark Warling from EAW spent a day with us tuning the system. We tried to get the 761s—the front-fill—as far out in front of the stage as possible, otherwise they would spill onto the stage. Since you have performers running to the front edge of the stage with wireless mics, there's potential for feedback. Initially, we hung the array faced dead-out toward the audience with no angle. The room itself is not quite 180 degrees—maybe 150 degrees from side to side—and the horizontal dispersion of the 760 and 761 is 90 degrees. We used the directionality of the cabinet to cover the audience, yet avoid reflections from the sidewalls by tilting the offstage corners inward. The room EQ for the line array was relatively flat, allowing room for movement up and down according to the



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Acoustical Solutions' Sonex (covered with material so that it is unseen) was used to soften up the shell.

taste of the engineer. At the end of the day, we bumped the subs up a bit. We also used a TEF system to align the array to the backline; there's a bit of a delay on the subs because they are a couple milliseconds closer to the audience."

Mixing at DTE is a different experience with the KF760/761 line array. The first things you notice are that the vocals are crystal-clear and the upper midrange snaps—which helps the kick drum cut through—and is easy to dial in without stressing the amps. St. Peter notes, "In the past, a lot of the EQ you needed was so radical that you'd create phase problems, but the new system avoids that. Amphitheatres are always a challenge but this one is in good shape. If anything new comes out, we're open to keep trying." ■

In addition to contributing to Mix, Steve La Cerra is the tour manager and front-of-house engineer for Blue Öyster Cult.

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ALCONS RBN1801 RIBBON TRANSDUCER

Alcons Audio (www.alconsaudio.com) debuts the RBN1801, a massive 18-inch-long ribbon transducer with a 1-20kHz response and max SPLs of 145 dB. The Isophasic Planar driver's waveguide offers constant 90° horizontal directivity out to 20 kHz; the unit's symmetric push-pull design provides dipole radiation and is magnetically shielded.

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Renkus-Heinz (www.renkus-heinz.com) is shipping EASERA®, the Electronic & Acoustic System Evaluation and Response Analyzer. Requiring only a laptop PC and a decent-quality sound card, EASERA provides audio test/measurement tools such as MLS, TDS and dual-FFT. The standard 48kHz EASERA is 2-channel; EASERA PRO allows up to 32 simultaneous I/Os at up to 192 kHz. An optional TEF/TDS module developed with Gold Line requires a TEF-USB AD/DA converter/preamp. EASERA can be used with any mic (some advanced functions require a calibrated mic) and supports all current sound cards. Functions and measurements include "waterfall" energy time curves, impulse response, STI, %ALCONS, direct and total SPL, RMS, crest factor, distortion and more. EASERA exports data in a variety of formats such as .WAV, EASE, TEF and MLSSA. EASERA editing features include user-defined filters and windows, addition/division/merging/cutting files, smoothing, averaging, integrating and differentiating. Measurements can be weighted/displayed on logarithmic or linear scales in a range of resolutions.

EAW JFXI SERIES

EAW (www.eaw.com) expands its popular JFX Series with the JFXi portable two-way speakers. All six new models feature EAW's new Orbital Magnet Array woofers, using individual magnets around the voicecoil and pole rather than a solid ring, thus enhancing airflow through the magnet structure to increase thermal capacity and reduce power compression. A scalloped outer profile generates greater flux density for higher sensitivity and is said to provide lower distortion and improved LF transients. JFXi 10-inch and 15-inch woofer cones are Fiberglass-filled and coated for moisture protection. Compression drivers use highly damped titanium diaphragms and neodymium magnets for clear high frequencies. Like the other JFX Series, the JFXi models have multi-angle enclosures that work equally well on stands, walls, floors and ceilings.



FIBERPLEX SNAKE WALL PANEL

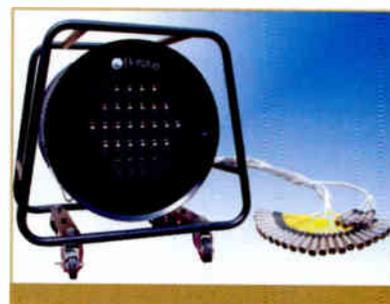
FiberPlex (www.fiberplex.com) debuts a wall panel enclosure option for its Light Viper VIS-1832 fiber-optic snakes. The flush-mount's 17x17x3.25-inch (HxWxD) panel includes a rough-in box that mounts between two standard (16-inch spacing) wall studs

to adapt the company's stage box for fixed installs. The full system includes the compact 32x8 stage box (accepting XLR or TRS mic/line signals), which connects to a rack unit at the house mix position via lightweight, mil-spec fiber-optic line. All transfers are at 24-bit/96 kHz, and optional optical outs on the stage box allow "splits" to a monitor mixer or to recording/broadcast feeds.

HORIZON SNAKE REELS

Professional Snake Reels from Horizon Music (www.horizonmusic.com) feature 16-gauge steel construction and individually jacketed/shielded multipair cable in an easily portable, integrated cable reel/stage box design.

Standard models come in 100- or 150-foot lengths, in 16x4 or 24x4 configurations with ¼-inch or XLR returns. All models include locking rubber wheels; custom lengths/channel options can be ordered.



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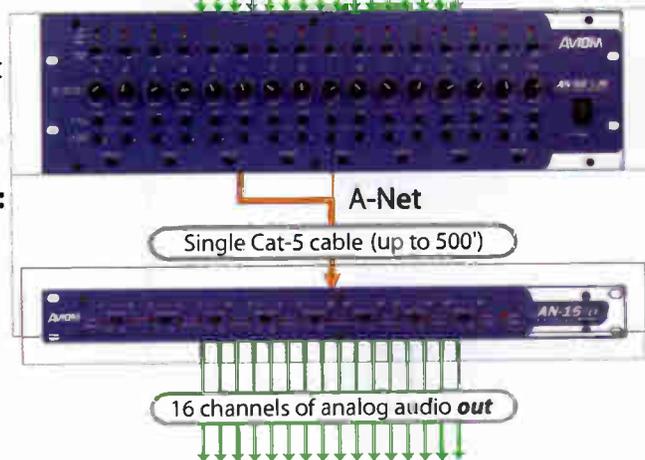
16x16, 32x0, 32x16, 32x32,
48x0, 48x16, 64x0

*up to 500 feet between devices!



16x0 (16 sends x 0 returns)

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World Radio History

Mal Contents

Keep Your Computer Clean of Malware, Spyware and Such

Those of you who run a Windows OS computer know that Windows 2000 was the first modern, fully reliable version. But until now, the default settings and factory functionality weren't, shall we say, the most secure.

This month, I'm delving into the slightly arcane world of malware, those lovely little bits of code that slither, sneak, snoop and spy on your actions, and, if you're not so lucky, may even hand control of your box over to some for-hire script kiddie who will proceed to make some money off of you without your knowledge. Spyware, adware, browser hijackers, background dialers—every day, there are more threats, but, will wonders never cease, the folks in Redmond, Wash., the home of Microsoft, have come to our rescue.

First, let's talk about what malware is and isn't. Viruses, worms and Trojan horses, though all denizens of the computing underworld, aren't generally considered malware. Here's a quick rundown of what is.

ADWARE

Adware is usually thought of as simply displaying marketing messages via pop-ups or other annoyances. Make no mistake, pop-up ads are more effective than banners in both "click-through" and "conversion." This high ROI (return on investment) means that, even if only two percent of viewers are stupid enough to click and then drop some dough (the "conversion" part), the advertiser is guaranteed to make a tidy profit. Because of adware's success, it is often co-opted as an enabler for covert installation of other malware and to forward key bits of information to opportunistic marketers specifically for further intrusion.

Another variant of a pop-up is a pop-under. Just as the name implies, pop-unders spawn one or more browser windows that attempt to "hide" themselves behind existing windows.

SPYWARE AND FRIENDS

Spyware comes in several forms, but all versions have one thing in common: They keep track of what you do while at your computer. Those actions may be relatively benign, such as simply reporting which Websites you visit or what search terms you enter to an interested party. More disturbing is spyware that scours your local disks for e-mail addresses, phone numbers and credit card accounts.



An interesting and dangerous spyware example is the keystroke logger, pernicious critters that are sometimes found in public environments like Internet cafés, invisibly recording all keystrokes, including passwords and bank accounts, to a file. Keystroke logger sessions can be sent via public networks to a third party or may be stored on covertly installed, unobtrusive removable media, such as a USB thumb drive, for later retrieval.

File sharers such as iMesh are another type of spyware conduit. They often carry malware baggage, adware or spyware that track user metrics and forwards that information to the marketing predators—Kazaa anyone?

DIALERS

Dialers are great if you own a 900 number service: A dialer configures a modem to dial your 900 number and you get boatloads of money while the clueless sap at the other end gets socked with a hefty bill.

How, you may ask, did we all get saddled with this crap? Unlike the second- and third-place desktop operating systems, Linux and Mac OS, respectively, Windows used to ship in such a vulnerable state that it was waiting—literally with open arms—for some creep to sneak up and take advantage of it. Years ago, Microsoft started babbling about security, but now the company has done something about it: Windows XP Service Pack 2, "with advanced security technologies." Why it has taken this long for so little is a whole 'nother article, but suffice to say, if you've survived the XP SP2 update, then your computing experience will be improved.

For those of you who can't move to XP, either

British by Heritage...

audient

ASP8024 Analog Mixing Console

Remember the great sound of all those classic recordings made on vintage British desks? Brought to you by Gareth Davies and David Dearden, the "D"s from DDA consoles, Audient represents the culmination of more than 40 years of classic British console design. Audient products capture that much sought after tone, and deliver unsurpassed performance through each stage of the recording process.

Better by Design.

Modern manufacturing techniques enable Audient to produce consoles and audio processors utilizing discrete analog design with a focus on sonic performance, built from the highest quality components. Each circuit is tested and refined until a pristine quality signal path is achieved with no compromises. The end result: products that sound great but won't break your budget.

ASP510—Surround Sound Controller for multiple surround sound formats including: 5.1, LCRS, Dolby Surround, DVD-Video, DVD-Audio, DTS, and SACD. Supports three 5.1 surround and three stereo sources, with eight inputs from the console, and eight outputs to recorders (5.1 plus stereo).

ASPO08—Eight Channel discrete ultra-high quality microphone preamplifier with optional AES/SPDIF and/or ADAT digital outputs. All channels include an XLR input, 'soft start' 48V phantom power, switchable input impedance, 25-250Hz hi-pass filter as well as line input selection. Channels 1 and 2 also feature a -20dB attenuator and a high-impedance Instrument/DI input on a front panel mounted jack.

sumo—Sixteen Channel fully balanced summing mixer with stereo bus compressor/peak limiter, optional AES/SPDIF digital outputs at 44.1 to 192Khz, high resolution metering and expander input for up to 3 additional units.

ASP510 Surround Sound Controller



ASPO08 8ch Variable Impedance Mic Preamp



sumo High Resolution Summing Amplifier



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because of licensing costs or compatibility issues, take heart—there are several things you can do. One is to toss out that Microsoft browser. Not literally, as Windows Update won't run without it, but for day-to-day work, you can ignore it in favor of products designed by more thoughtful engineers. This will not only make your day better, but it will have a positive peripheral effect in that, as fewer people use Internet Explorer, the Websites will move from Internet Explorer-specific frameworks to ones based on open standards, which is good for everyone.

In the enterprise world, some companies are locked into using Internet Explorer because of the mechanism that makes it such a high security risk: ActiveX. Build in the capability to remotely control my computer without my knowledge and I call that a really desirable feature! If you're

gation. I can recommend three: Spyware Doctor (www.pctools.com), SpyBot-S&D (www.safer-networking.org) and, best of all, AdAware SE Personal (www.lavasoft.com). These kids play quite well together (the latter two on my W2k system anyway) and all three score light hits on your wallet.

AdAware is a standout, especially because it's free. The user interface is nothing to write home about, but, like a good little soldier, it fights the good fight. As for Spybot, a nice feature and some of its anti-malware brethren is the option to perform a backup of your registry in case something steps on that holy of holies later on. Whichever ones you choose to use—and I suggest you use several as they all catch different beasts—be sure to keep them up to date as the rules change day to day.

Most malware, at least the browser-based

Logging Ban

Want to keep removable storage media out of the picture on your machines? The folks at SmartLine (www.smartlineinc.com) provide DeviceLock to reduce data migration through portable devices hanging off of FireWire or USB ports. According to SmartLine, "Using DeviceLock, network administrators can lock out unauthorized users from USB and FireWire devices, WiFi and Bluetooth adapters, CD-ROM and floppy drives, serial and parallel ports, and many other plug-and-play devices." Admins can define access privileges based on date, time, user and individual devices. No more mixes walking out the door on someone's iPod without your permission!

running XP, you'll eventually get a new locked-down version, but for those of us running W2k and earlier, all you can do is patch until your eyeballs roll up, manually improve security settings and substitute with third-party products.

Most of you out there aren't so constrained to using Internet Explorer and can switch to a less-vulnerable, more configurable and stable alternative, like the most current versions of Mozilla, Firefox or Opera. All excellent choices, and the first two are free. I stress the most recent version because, even as I was trying to finish this piece, I read that old-school pop-up blockers are no longer effective. The latest versions of Opera, Safari, Firefox and Internet Explorer for XP SP2 all handle the new scam. Once you've downloaded the current version of your favorite, check its preferences for a "Block All Pop-Ups" setting.

PROTECT YOURSELF

Okay, enough of browser madness and on to specific utilities for malware miti-

gation. Yup, you can only blame yourself for most malware infections. Don't visit Websites because they *may* be "interesting," especially if they offer some mass-market commodity such as pictures, music, a utility or other software downloads. Don't agree to a software license unless you are either *very* sure of the vendor's credentials or you're willing to clean up a real mess after the fact.

Why do people make this stuff? Basically, either self-aggrandizement or money. Mostly money. Adware can become a marketing engine, and often the author receives remuneration from each instance that the mechanism succeeds. Don't let them succeed with your computer. Surf smart. ■

Omas is pleased to see that the synth on which he learned additive synthesis so long ago is now in Version 2, at least in the virtual sense. Arturia's Moog Modular may look like my original wood-and-metal teaching aid, but it sure ain't as finicky!

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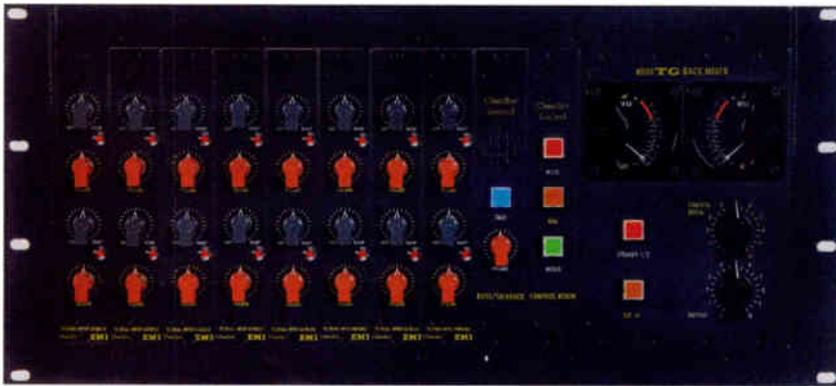
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World Radio History

Tools of the Trade

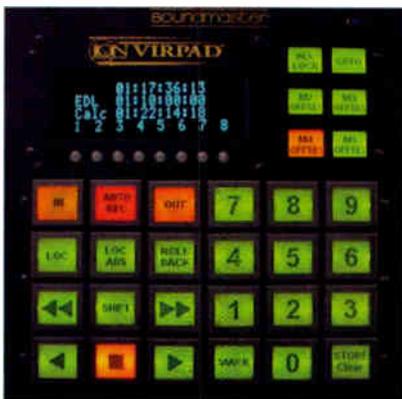


CHANDLER MINI TG RACK MIXER

This "old-school"-style 16x2 mixer from Chandler (www.chandlerlimited.com, \$5,700) was designed using the original circuit drawings and design info as the TG12345 MKIV console: that made many a hit in the early days of Abbey Road. Each transformer-balanced channel is driven by the TG MKVI amp, while the bus and control room sections are driven by a pair of TG2 modules each, totaling 20 discrete TG amplifiers and 22 transformers. The unit also offers a full-featured control room section with speaker switching, mute, mono, dim, external input, stereo insert and separate control room and stereo bus outs.

SOUNDMASTER ION VIRPAD

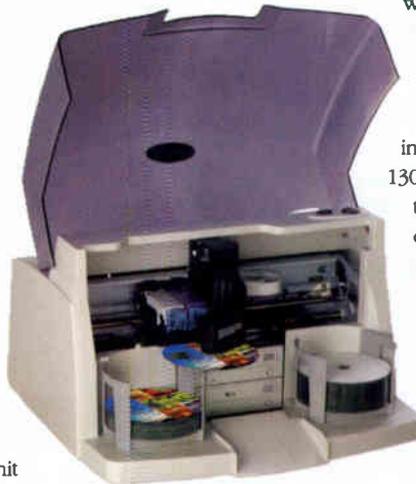
This slick, hands-on keypad is a completely programmable, compact touchscreen that can be directly mounted in Harrison, AMS-Neve and Euphonix consoles. The ION VIRPAD (starting at \$4,995, www.soundmaster.com) uses LCD soft labels on each switch; an integrated



vacuum fluorescent display provides easy access to ION's powerful "solutions engine." A film panel version of VIRPAD featuring traditional paddle switches for record and monitor control can be installed directly into the Digidesign ICON D-Control or in a variable-rake desktop mount, perfect for script trays including those used by Lawo, Studer and StageTec. Any of Soundmaster ION's 10,000 sequence keys can be invoked, and the currently programmed function is immediately displayed, making the switches truly multipurpose.

PRIMERA BRAVOPRO

Boasting new, faster robotics that promise maximum speed and throughput, the BravoPro (\$3,495, www.primera.com) is designed for hands-free, automated production of up to 100 CDs or DVDs per job. The unit features built-in 52x CD-R recorders or optional Pioneer combo DVD/CD-R drives. The integrated printer operates at up to 4800 dpi and features print heads with the industry's smallest ink-droplet size of three picoliters. BravoPro is both Mac and PC compatible, and offers an optional adapter kit to copy and print 80mm round mini-discs, "hockey rink" mini-discs and rectangular business card-shaped CDs.



EMES KOBALT MONITORS

This blue, two-way bi-amped monitor boasts Emes' (www.synthax.com, \$649) new BI-Port and ISO-Rails technologies: The 25mm tweeter is integrated in the center of the BI-Port (bass-reflex system), allowing for efficient air cooling and enhanced high-frequency dispersion over long distances. In addition, the cabinet is isolated on silicon ISO-Rails, so there is no coupling to the surface underneath or slipping of the speaker during use. Both drivers are powered by matching 70W amplifiers. Input is via XLR or 1/4-inch TRS connectors; a 16-position DIP switch adjusts the monitor listening level from -40 to +10 dB.

MI7 SOUND LIBRARIES

These new online libraries from Sweden are based on the PrimeSounds Sound and Online infrastructures and offer free content to members. New offerings include Existential Pimp Loops, which comprise hip hop and R&B loops, and Disco & Funk Horns, which includes 242 "Delicious Disco Lines" in bpm's between 110 and 130. The samples are meant to work with applications offering real-time time- and pitch-stretching, such as Cubase 3, Nuendo 3, Logic 7, Live, Acid, SoundTracks, GarageBand and Kontakt. For membership info, visit www.mi7libraries.com.

SPECTRASONICS STYLUS EXPANDERS

Spectrasonics (www.spectrasonics.com) released a series of five new expansion libraries for the Stylus RMX virtual groove instrument. The Xpanders are based on the company's existing lines, including the Backbeat, Retro Funk, Liquid Grooves and Metamorphosis collections. Each collection comes on a DVD-ROM and is \$99.

CHARTER OAK SA538

The Charter Oak SA538 (\$1,499, www.charteroakacoustics.com) large-capsule tube mic is hand-made from solid brass and features a dual 1.07-inch, 6-micron-thick gold-sputtered Mylar diaphragm, has 22 dB of equivalent input noise and will take 128dB SPL with 0.5% total harmonic distortion @ 1 kHz. The mic comes with a dedicated power supply that provides for switching between cardioid, omni and figure-8 patterns. Each tube is given a seven-hour burn-in period, and each mic is tested for half-an-hour in a studio environment prior to sale.



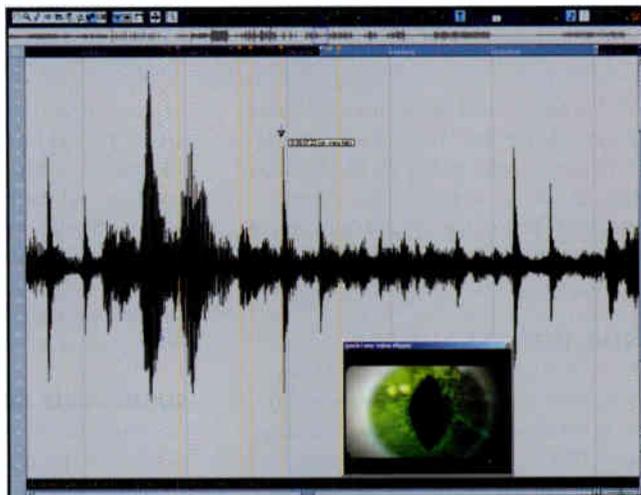
MARANTZ PMD660 RECORDER

Aimed at field recording and ENG, the PMD660 (\$64999, www.d-mpro.com) is a solid-state recorder that uses either Compact Flash media cards or micro-drives. The unit offers a built-in stereo mic or will phantom power two external condenser mics from its XLR inputs. Stereo line I/Os are provided on 1/8-inch jacks; a USB connector is also included for digital transfers. Using a 1GB Flash card, the PMD660 will record one hour of stereo or three hours of mono (44.1 or 48 kHz uncompressed), 17 hours of mono (MP3 @ 64 kbps) or 36 hours of stereo (MP3 @ 128 kbps). The optional RC600 remote offers basic record/pause control. The svelte 1.5-pound recorder will run for four hours on standard AA batteries.



STEINBERG NUENDO 3

The latest version of Nuendo offers many new features for post, surround and high-end recording, including extended import/export facility and integration of Pinnacle's X-send protocol. Other features include Warp-to-Picture (shown), which allows live time-stretching of audio material with simultaneous real-time tracking of the corresponding video track. Surround recording has been improved with linked panners and extended monitoring options. For general recording, the Effect Plug-In allows the direct integration of outboard effects within the Nuendo 3 VST Mixer, including delay compensation. Prices: \$1,999; upgrade from Nuendo 1, \$699; upgrade from Nuendo 2, \$499. Visit www.steinberg.net.



SOUNDTOYS ECHOBOY TDM

Who says you can only get new toys during the holidays? The new delay tool from SoundToys (www.soundtoys.com) provides a number of effects from smooth delays, warm chorused echoes, tape emulation and lo-fi effects. Fully adjustable, the EchoBoy TDM (\$495) lets users change delay rhythms to make the echo swing and jam with the mix. The new toy also includes a tweakable pocket from "rushin" to "draggin" so the echo sits right where it sounds best. MIDI tempo-locking sets the delay to the session tempo with the flip of a switch. Supported formats include Digidesign's TDM, RTAS and AudioSuite on Pro Tools|HD, LE and HD Accel platforms.

SSL AWS900 TOTAL RECALL

This new feature brings pro-level recall to SSL's (www.solid-state-logic.com)

AWS 900 console. Total Recall scans all rotary controls and mechanically latching switches, including the channel controls, central bus controls and external returns. All electronically latching switches, such as channel bus and dynamics routing, can be automatically reset, as can the positions of the motorized faders. Recall setups can be stored in the host workstation as MIDI System-Exclusive data, providing maximum integration and compatibility with the host platform, while retaining the project and setup data in a single file system. Price: \$4,495.



GENELEC 8030.LSE POWERPACK

This affordable surround system from the folks in Finland comprises five Genelec 8030A two-way/bi-amplified active monitors, one Genelec 7060A LSE Series active subwoofer and a Genelec Acousti/Tape frequency vs. wavelength measuring tape. The compact 8030As (11.25x7x7 1/16 inches, HxWxD) feature a pair of 40W amplifiers and offer a frequency range of



58-20k Hz (± 2 dB), while the sub uses a 10-inch driver with 120W amplifier and a frequency response of 29-85 Hz (120 Hz), ± 3 dB. A complete setup guide is included for accurate speaker placement, wiring and fine-tuning. Price: \$4,600, www.genelecus.com.

NEVE 1073 DPA AND DPD

These new dual-channel, single-rackspace units from Neve (www.ams-neve.com) can be purchased either as a straight analog unit (DPA) or with a digital back end (DPD), making for an enticing package. The 1073 DPA (\$2,999) features the classic 1073 design, while the 1073 DPD (\$3,750) offers pro-level ADCs working at all standard PCM sampling rates up to 192 kHz. For those seeking to archive at high resolution, the DPD also includes a DSD output. Analog inserts prior to the digital converters allow adding other analog gear to the signal chain. The DPD can be synched by a word clock input or through the AES/EBU outputs. Both units offer stepped gain controls, trim knob, phantom power and polarity shift, and variable impedance input settings.

ULTRASONE PROLINE HEADPHONES

New to the U.S. market, Ultrason (www.ultrasonusa.com) has released the new PROline 750, 2500, 550 and 650 headphones. The new line features the company's S-Logic technology, offering standard protection from EMF radiation, detachable cables, a replacement pair of ear pads and easily replaceable drivers. Prices: 550, \$239; 650, \$299; and 2500/750, \$399.



SOUNDSUCKERS SOUNDBLOCKER 3

This new acoustic material from Soundsuckers (www.soundsuckers.com), made of rigid-mass vinyl, can be applied directly to any wall or be used

as a sound-isolation partitioning wall by itself. The 2x4-foot sheets are 1/4-inch-thick and can be easily cut to size by scoring one side and then bending it along the line, much like drywall. Screws can be used to attach it to an existing wall or stud framework; it can also be painted. Soundblocker 3 carries an STC of 30. Prices start at \$253.

SUBMERSIBLE DRUMMERPACK AL

Created from the recordings of some of the best drummers on the planet, DrummerPack AL (\$49) is a collection of drum loops, fills and grooves taken from the library of Submersible Music's DrumCore (www.drumcore.com). The loops have been pre-cataloged using AppleLoop search criteria (metadata) for use in Logic Pro 7, Soundtrack and GarageBand. The 44.1kHz/24-bit files are available at three different tempos and include enough basic grooves and fills to fit most song structures.

LYNX AURORA 8/16 CONVERTERS

These two new single-rackspace units from Lynx (www.lynxstudio.com) are 8- (\$2,195) and 16-channel (\$2,195), 24-bit/192kHz AD/DA converters. Features include 192kHz operation; AES/EBU I/O (single- and dual-wire modes); extensive remote-control capability via Lynx AES16, IrDA and MIDI; LSlot expansion slot for FireWire, ADAT and future interface options; onboard digital mixer for flexible I/O routing; and word clock I/O with Lynx SynchroLock jitter-reduction technology.

OTARI DR-10N RECORDER/EDITOR

Targeted for broadcast and post-production, the Otari DR-10N (www.otari.com, \$9,995) comprises a 3RU-high central unit with an optional edit remote controller. The main unit includes a built-in hard disk and one removable MO drive, with provisions for an additional MO drive. Stereo input can be recorded as .WAV files at standard sample rates up

to 96k/24-bit. Four-track or dual-stereo output is supported with reverse and $\pm 12.5\%$ varispeed play. Front panel indicators include 2-channel bargraph level meter, and timecode or elapsed time indication. Additional editing functions can be accessed with the optional CB-182 Edit Controller (\$1,995). The GUI provides quick and clear visual access to all DR-10N parameters, project information, program time, sample/bit rates, record/playback status and audio waveform display.

M-AUDIO FIREWIRE SOLO

Designed for guitar recording on-the-go, the M-Audio FireWire Solo (www.m-audio.com, \$249) is a bus-powered I/O unit that can be desk- or rack-mounted. I/O is



provided on a hi-Z 1/4-inch jack on the front and a phantom-powered XLR microphone input on the back of the unit. Both inputs feature gain control and clipping LEDs. There are also dual-line inputs and coaxial S/PDIF I/O providing 2-channel PCM and passthrough of AC-3 and DTS surround-encoded content. The internal converters operate at up to 24-bit/96 kHz with near-zero latency monitoring. The unit can be powered via the FireWire bus or optional power supply.

GEFEN APPLE HD CINEMA DISPLAY EXTENSION KITS

The company that makes it easy to put noisy gear where it belongs has done it again with its new Apple HD Cinema Display Extension Kits. Gefen's (www.gefen.com) devices allow hardware to be sequestered from either 20-inch or 23-inch Apple displays at distances ranging from 10 to 300 feet, sustaining high-definition resolutions up to 1920x1200. The kit includes a DVI Repeater, a small device that sits between two DVI cables regenerating the video signal from one through the



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Includes: First-aid package for registered users

- Free support via e-mail, fax & phone (no premium charge numbers)
- User forum with developer moderation
- Regular functionality updates & security patches
- User forum with developer moderation



Best Audio Editor of the Year

Electronic Musician, Jan. 1, 2004 (US)



Future Music Platinum Award

Future Music no. 147, April 2004 (UK)

These awards refer to 7.x, the predecessor of Samplitude V8.



*Details of all new features and differences between editions (professional/classic/master) at the V8 Info Center: www.samplitude.com

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other, or a DVI-1000 HD Extender, which uses a sender and receiver connected by cabling to extend the display. Prices range from \$217 to \$4,065, depending on distance needed.

TASCAM FW-1082 INTERFACE

This new audio/MIDI interface and control surface from Tascam (www.tascam.com) will turn heads twice: once for features and a second time for its \$999 price. The FW-1082 features 10 inputs, including four balanced XLR mic inputs with phantom power, two MIDI I/Os and digital I/O (S/PDIF). The mixer has eight 60mm touch-sensitive moving faders and select/solo/mute buttons, along with a moving master fader. There is a headphone output with level control, assignable footswitch jack, four assignable encoders, transport controls and a jog/shuttle wheel. Bundled software includes

Cubasis LE 96kHz/48-track recording software, GigaStudio 3 LE streaming sampler and Nomad Factory plug-in demos.

ELEMENTAL AUDIO NEODYMIUM

Elemental Audio (www.elementalaudio.com), the company that brought you the Firium and Eqium plug-ins, is now offering an affordable compressor and dynamics processing plug-in called Neodymium (\$159). The plug uses a unique visual approach to compression. Instead of the more typical knobs, it is controlled by interacting with a graphical depiction of its compression settings. Neodymium is Mac OS X and Windows compatible, and is available in RTAS, AudioUnits and VST plug-in formats.

Upgrades and Updates

Independent Audio (www.independentaudio.com) is now representing **Phoenix Audio** and its DRS-1 MONO Mic Pre, DRS-2 Mic Pre/DI and the Nicerizer sweetening tool...**IK Multimedia** (www.ikmultimedia.com) announced that **AmpliTube Live for Mac OS X and Windows XP is shipping** and includes the AmpliTube LE plug-in for most major formats (VST, AudioUnits, DX and RTAS)...**Native Instruments** (www.native-instruments.de) is now offering **Battery 2.1 update**, which includes new features such as direct-from-disk streaming, MIDI CC automation and enhanced output configuration facilities...**Tassman 4 and Lounge Lizard EP-2** from **Applied Acoustics** (www.applied-acoustics.com) are now compatible with the AudioUnits validation test of Logic 7...**Cakewalk** (www.cakewalk.com) has released the **SONAR 4.0.1 maintenance release** for SONAR 4 Producer Edition and SONAR 4 Studio Edition. It provides a number of feature enhancements and updates including Prosoniq's MPEX3 superior time-scaling algorithm...**Tascam** (www.tascam.com) is now offering **Cubase, GigaStudio 3 LE and Nomad Factory plug-in demos** with the US-122, US-224, US-428, FW-1804, FW-1082 and FW-1884 audio interfaces. If that weren't enough, the Nomad Blue Tubes Bundle and Rock Amp Legends plug-ins are now compatible with

AudioUnits...**Steinberg** (www.steinberg.net) has released a **Cubase SX 3.0.1 update** that offers many enhancements and the new surround-capable RoomWorks reverb plug-in...**Vienna Symphonic Library** (www.ilio.com) has announced that the **Horizon Series is available in four formats** including EXS24, GigaStudio, HALion and Kontakt. In addition, the Performance Tool for PC supports GigaStudio, HALion and Kontakt...**Minnetonka** (www.minnetonkaaudio.com) is now **shipping its discWelder Bronze DVD** authoring software for Mac OS...**Sonic Studio** (www.sonicstudio.com) announced the release of a **1.9.1 software version**, bringing improved functionality and stability to its system...**Audio Ease** upgraded its **VST Wrapper 4 for MOTU Digital Performer** to V. 4.1. The upgrade is free to any current V. 4 owner from www.audioease.com...**Redmatica** (www.redmatica.com) upgraded the **EsxManager to V. 2.7**, making it compatible with Logic Pro 7, adding improved SampleMerge support and optimizing memory usage for large libraries...**URS Plug-Ins** (www.ursplugins.com) announced **AudioUnits support for the URS Classic Console EQ Bundle** (A and N Series EQ only). The AudioUnits upgrade is free to registered owners of the URS Classic Console EQ Bundle and URS A Series and N Series EQs...**Kjaerhusaudio** (www.kjaerhusaudio.com) has updated its line of free (yup! that's what we said) **Classic Series VST plug-ins**. The Classic Series emulates classic effect units typical of the '70s and '80s such as chorus, compressor, delay, equalizer, flanger, master limiter and reverb... **Blue Microphone's Bluebird** has been released from its bundle deal with Digidesign and is now free to be sold on its own. For more info, visit www.bluemic.com. Fly little bluebird, fly!... **Lexicon** (www.lexiconpro.com) is now **shipping its Omega Desktop Recording Studio with Steinberg's Cubase LE** multitrack recording software for Mac OS and PC platforms...**Unrelated Inventions** (www.unrelatedinventions.com) has released **Audiotools V. 5**, the latest version of its Windows-based software for audio recording and audio file conversion and manipulation.■



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ALWAYS A SOUND DECISION

Mackie Digital X Bus Console

Power and Flexible Routing in a Compact Package

Mackie's Digital X Bus console represents an evolutionary jump for compact, powerful and affordable mixing systems used in recording, post-production and live sound work. The unit boots immediately and includes striking features such as two 15-inch touchscreen flat-panel monitors; the self-contained nature of this aesthetically appealing console clearly indicates further development in mixer architecture and control surface ergonomics. A tribute to intuitive, well-thought-out design, the Digital X Bus will become even more powerful with future software iterations.

Digital X Bus is offered in two versions that both operate up to 192 kHz: the X.200 (reviewed here) and the X.400. In addition to all of the X.200's capabilities and features, the X.400 has an another I/O slot for more input/outputs possible at 96 kHz, more surround stem mixing/monitoring options, a dual-processor computer, a pre-loaded Universal Audio UAD-1 Powered Plug-Ins card (optional on the X.200) and RS-422 Sony 9-pin control. Both include a layer that emulates the Mackie Control Universal control surface with virtual overlays for any software DAW: Pro Tools, Logic Pro, Nuendo, Cubase, SONAR and more. Additional customized DAW system integration is also possible through the MIDI Map window for bidirectional MIDI access to console controls and plug-in parameters.

THE HARD/SOFTWARE

The X.200 and X.400 share the same dimensions: 9.2x43.6x31.8 inches (HxWxD) and each weighs 73 pounds. The computer chassis has a standard PC motherboard running a single Intel Pentium 4 at 3 GHz (dual Intel Xeon with hyperthreading in the X.400) and 1 GB of RAM that's expandable to 2 GB. There's a 60GB internal IDE hard drive, but no CD-ROM drive. However, it's easy enough to connect an external CD-ROM or pocket Flash drive to the USB socket for software updates or to back up sessions and automation data. I noticed the cumulative whirl of the hard drive, CPU and power supply fans, but I did not find that objectionable.

The motherboard has a standard



Ethernet RJ-45 connector but, at this time, no network or Internet connectivity implementation. Mackie plans to develop a secure procedure that will enable both automatic factory updates and future online session collaboration between consoles. Co-developer SaneWave Inc. designed the computer's PCI card, which does all audio routing, with the X.200 capable of 144 streams of 96kHz audio simultaneously. This card also converts all incoming fixed-point, 24-bit PCM audio data into 32-bit floating point. Both the X.200 and X.400 come with four additional PCI slots alongside the dual-head Radeon graphics card. My test console also had two UAD-1 cards running.

Other connections include two assignable foot switches, MIDI I/O, Sony 9-pin RS-422 connector (X.400) and two USB ports. Behind the motherboard access panel are four more USB jacks and PS/2 ports for a standard QWERTY keyboard and mouse. Additionally, a virtual keyboard appears on the screen. I occasionally used the mouse, but mostly just to adjust third-party VST plug-ins that didn't support the touchscreen interface. The Digital X Bus uses Microsoft's Embedded XPE software, allowing developers to do kernel-level customization; it's Windows XP Pro-optimized for the console only.

I/O OPTIONS

Digital X Bus consoles are sold "a la carte"—sans I/O cards. Six different I/O cards are interchangeable per your application. You cannot use D8B cards. The console card cage ships with the Sync card—providing word clock and SMPTE I/O—and the Mix Out card, with AES/EBU and S/PDIF stereo I/O, two sets of stereo monitor speakers, two stereo headphone outs and

TRS balanced left/right analog outs.

The Mic/Line 4 card has four mic XLRs and four TRS balanced lines. All mic input cards use the new TI/Burr-Brown PGA 2500 preamp chip. The Mic/Line 8 card has eight balanced mic/line inputs and outputs on two DB25s in Tascam pin-out. The Line card has eight balanced analog line I/Os, also using two DB25s. Each card has -10dBv/+4dBm switches for each line input and output. The X.200 accepts up to eight 8-channel cards for 64 total I/O channels, in addition to the aforementioned Mix Out card for L/R output, monitoring and 2-track returns.

Three digital I/O cards are offered: AES/EBU, digital and FireWire. The AES/EBU card has one DB25 for eight channels of digital audio in single-wire AES/EBU format, up to 192 kHz. The digital card provides eight channels in two formats: TDIF on a DB25 and four Toslink ADAT Lightpipe optical ports. For 88.2/96kHz rates, S/MUX I protocol splits the eight channels to four on the Lightpipes. S/MUX II at 176.4/192 kHz leaves two channels on each Toslink connector for a total of four. The FireWire card uses 24 I/Os up to 48 kHz or eight at 96 kHz. Mac OS X Core Audio and Windows XP ASIO applications are supported.

THE CHANNEL STRIP

Two 15-inch (1024x768-pixel) touchscreens greatly reduce the console's button count. The X Bus' lighted buttons are much larger than the D8B's. I never had to hunt around for a certain button because the console is less cluttered.

The left touchscreen has familiar computer drop-down menus for finger or mouse access. These menus mirror the console's hardware setup buttons—you can

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go quickly from section to section to pre-configure the console for your session.

At startup, the touchscreen defaults to show 24 channel strips—12 per screen, each with a good-looking and large peak-reading VU meter with resettable clip indicator. Each strip has a 100mm Penny & Giles touch-sensitive fader (1,024-step resolution). Like on the D8B, you can switch fader banks (in banks of 24) for channels 1 through 72 using hardware buttons or by touchscreen. Onscreen, you can also choose the bank you want from a row of 94 meters, comprising channels 1 through 24, 25 through 48, 49 through 72 + aux 1 through 12 + bus 1 through 8 + L/R mix.

The channel strips divide into touch-sensitive sections, which open to large menus for touch-and-drag adjusting of that section's parameters. While any channel section is enlarged on the screens, its parameters are also spread out on the 24 V-Pot rotary shaft encoders across the board. Navigation, control and configuration throughout the Digital X Bus are assisted by two-layer pop-up window menus. Whether called from the Windows drop-down menus or from a setup button, once a pop-up window opens, all choices and options are presented with little or no drilling down.

Channel strip sections include Assign (for bussing and inserts), Aux (for access to 12 aux sends and pans), Equalizer (a small display shows your EQ curve and touching it fills the screen with the full 4-band parametric) and Dynamics (shows a VU meter; a full compressor/gate GUI fills that screen when touched).

Touching the Surround Panner gives access to the virtual joystick panner, LFE level and cut-off point, surround bus assignment across eight buses (with presets for stereo, quad, LCRS, 5.1, SDDS 7.1 and "Theme Park" 7.1) and LFE on/off. The center-channel divergence control is standard and regulates the amount of center-channel audio delivered to the other channels. Cleverly, the familiar Morph function from the D8B is used to A/B between two different panning schemes.

ADOPTED V-POTS

The Digital X Bus' V-Pots, carried over from the D8B, are better than ever. Using the compressor, EQ and aux sends is like using an analog board, with a V-Pot knob for every parameter and numeric readout under each knob. The V-Pots control L/R pan and F/B, aux 1 through 12 sends, panning for stereo auxes 9/10 and 11/12, digital trim and level-to-tape. While mixing,

it was easy to have one finger toggling the V-Pot assign button to go through the channel's tweaking multiple effect sends. I never adjusted the wrong parameter by accident because I always knew which one was active.

Hardware pushbuttons on the channel strips make operations fast. Choosing Select enables that channel for editing—push it twice, and the dynamics and EQ processors fill both screens with active V-Pots simultaneously. Wow! Press and hold Select, and Channel Setting activates a menu for setting groups, links, naming channels and more. Press and hold Select buttons on any two channels to gain access to the Link setup page to stereo link all channel parameters.

Four mode buttons in the Assign Button box apply to all channel strips whose Assign buttons are pushed. Rec arms that track/channel in your DAW or multitrack recorder via MIDI Machine Control; L-R assigns/removes that channel from the L/R mix bus when that channel becomes a recording path; Read is for reading back automation data with no chance of overwriting; and Write scripts automation data.

Each channel has large, lighted Mute and Solo buttons. Solo modes include PFL, AFL and Mixdown Solo-in-Place. A separate pot controls the level of the solo tracks in all three modes. In Mixdown Solo mode, you'll hear the panned position of a track but not its actual mixed level, which is assigned on the pot. You can easily Solo Isolate channels for effect returns, solo multiple tracks together (with Solo Latch) and clear all soloed tracks.

MONITOR AND CONTROL

Control room monitor facilities include switching for near-fields and mains with a single volume control knob, monitor source switching for connecting mixdown machines and CD players, mono monitoring mode and monitor dim. I liked having a setup screen for calibration of monitors with built-in pink noise and oscillator signals, which are great!

The Phones section allows running two different stereo mixes and does cool things such as Copy Mix to Cue, in which all cue knob levels change to the main fader level values, including panning and effects. In the Talkback setup window, you can designate alternate talkback audio sources and include any source coming into any input card. There are 16 (eight with a Shift key) programmable macro or quick keys for frequently used functions, and the Transport section, with its large jog wheel,

duplicates most auto-locator features on tape decks, hard disk systems and DAWs, and sends them out as MMC commands.

Like on the D8B, the Snapshot section stores and recalls snapshots of static console settings. This is great for rough monitor mixes and allows you to move quickly from song to song, as every knob/fader position and processor setting are held in memory.

IN SESSION

I mixed a local rock band that was tracked on a Mackie HDR24 hard disk system during my first session. Had I started a mix on a D8B, I could have used the Import D8B Session menu, imported that session data and finished the mix on the X Bus. The EQ and dynamics sections are newer algorithms, so don't count on them sounding the same, but all other levels should be identical.

The first 24 channels on the Digital X Bus were configured to accept +4dBm analog for recording or playing MIDI instruments while the second 24 received digital audio from the HDR24 over TDIF. The Digital X Bus acted as master with clock signals going to the HDR24. I began EQ'ing and working on individual sounds immediately to derive a working mix. It's great to have the equalizer and compressor/gate fill up both screens with large graphical interfaces and all 24 V-Pots available for tweaking. I was glad to see I could still morph from one EQ and dynamics setting to another.

Next, I set up my effects rack. Conveniently, the first macro button called up my effects—a virtual rack to add or delete effects at any time and designate their routing (send/return or inserts). Each new effect dropped in at the bottom of the stack, so after you have four or five effects, you'll have to scroll down to find the newest addition.

Digital X Bus comes with a fine collection of effects. You can also install third-party VST plug-ins using the Package Installer pull-down, which supports standard USB dongle authorization. However, at this time, the console does not support PDC (Plug-in Delay Compensation), and there is no listing showing the latencies of installed plug-ins as you would find in DAW programs such as Nuendo. But once you know the latency of a particular plug-in, you can delay any number of channel strips all at once (up to 500 ms) using the Channel Delay menu. This was only crucial for channel strip insert effects such as compressors or EQs; for send and return effects like reverbs and delays, or to insert a stereo master bus compressor across the

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whole mix, this does not apply.

There's one quirk: With each new VST insert effect added, you must keep track of the accumulated latency. As of this writing, Channel Delay does not do this math for you. [Eds. note: This has been fixed with current software.] I preferred using the built-in EQ and dynamics sections on the channel strips as they don't add latency and sound great. I ran 15 third-party VST plug-ins of all stripes using only about 50 percent of available CPU resources, without noticing any operational differences.

Automating moves is easy: It's the same as the D8B's Write/Read/Trim modes. A History List menu provides selective undo options so that you can revisit an earlier version of your mix. The Automation menu has enable buttons for faders, pans, mutes, others and filters. Automation Filter selects or deselects other parameters such as bus, phase, aux and dynamic.

The Mix Editor window easily allows complete editing of any automation data in familiar, graphical break-point fashion. You can have up to 30 channels showing at a time, and can scroll through all control surface knobs displaying one parameter at a time. If your setup is MMC-enabled, click anywhere on the data and locate your DAW or multitrack at an exact place in a song. You can copy and paste data, write new data with the Pencil tool, zoom in on a chunk with the Magnify tool and quickly remove any bungles with the Erase tool.

With a system this powerful and software-expandable, I felt I would have to learn a whole new system, but that was not the case. Whether you've used the Mackie D8B or not doesn't matter: With the Digital X Bus, you can sit down, learn as you go and get lots of good work done right away. I found everything I needed to work and had plenty of workflow options available.

Even on my first use, there was a feeling of much higher precision, quality and performance with this console. I liked the way that the entire system was immediately accessible via an easy-to-understand and friendly interface. I look forward to benefiting from Mackie's continued development of this console, as the company has already announced future updates, application-specific additions and modifications. Prices: X.200, \$12,995; X.400, TBA.

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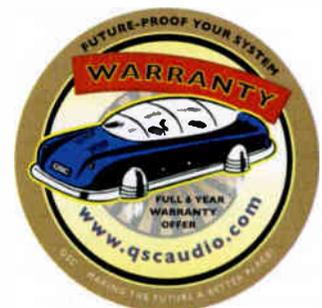
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Aphex Systems 1100MkII Mic Preamp

Adding New Features to an Elegant Design

Since introduced in 1999, Aphex's 1100MkI, with its great sound and super-low noise, quickly reached a unique orbit in the vast universe of high-quality microphone preamplifiers. The single-rackspace, 2-channel tube MkII adds several new features, but is otherwise unchanged from the original—good news, as the 1100's elegant and remarkably prescient design looks to become a modern classic.

LOOKING GOOD

The MkII is a glamorous standout in the control room with chrome rack-frame rails and a sculpted blue-anodized front panel with carved-out windows for the backlit

NEW FEATURES

What sets the 1100 apart are the RPA, MicLim and LoCaf features. RPA operates a vacuum tube amplifier at a constant and very low plate voltage to maintain electron migration and transconductance (the ratio of the small change in the plate's current to a change in grid voltage). That small plate current change is "read" or reflected via an external solid-state circuit to derive audio output and gain.

MicLim uses a specially designed, optically coupled attenuator as a dynamic load resistor across the 1100's input. A very fast peak limiter looking at the output of the first RPA stage controls this attenuator.

IN THE STUDIO

My first tests were analog comparisons of vocals using a Soundelux e250 large-diaphragm condenser mic between the 1100, Neve 1272, API 512 and the transformerless GML 8302 mic pre's. I did not use LoCaf or MicLim nor attenuation or anything else on the units. After carefully aligning all units with an oscillator to achieve matching 0dBm output at 40 dB of gain from each, the 1100 had a higher apparent loudness with increased low frequencies, a more open top end and no noise compared to the Neve and API. The difference was most striking against the Neve, while the API held its own in the low frequencies. The GML



control panels. The two identical channels have metal knobs for gain in 4dB steps and for the LoCaf feature. Line output is a 0dB to -12dB screwdriver-adjust trim pot and there is a built-in -20dB/700Hz test oscillator source to match the 1100's dynamic range to your connected gear.

There are also buttons for -20dB pad, polarity, phantom power on/off that slowly ramps up and down to avoid pops, MicLim on/off, noiseless mute on/off with rear panel jack and the A/D controls (sync clock source and internal sample rate). The new AKM AK5394A A/D converter chip supports 44.1 through 192kHz sample rates and will transmit and accept external clock via rear panel BNC jacks. There are also rear panel AES/EBU, S/PDIF and Toslink optical digital audio output connectors.

The 1100 is a transformerless hybrid design comprising a Class-A variable gain (-3dB to 41dB) PNP transistor differential input amplifier followed by a dual-triode (12AT7) differential tube stage (21 dB) that uses Aphex's Reflected Plate Amplifier circuit. This two-stage "front end" is followed—after the dual-optocoupler noiseless muting circuit and unbalanced insert loop path—by another RPA output amp (3dB gain) for a total system gain range of 21 to 65 dB.

As the input stage is about to clip, MicLim instantly lowers the input impedance and, therefore, the microphone's output level, avoiding preamp overload. To make MicLim more effective when using low-impedance mics (50 ohms or less), the MkII now comes with Z-Comp—impedance compensation switches on the rear panel. Z-Comp adds 150-ohms resistance in series with the mic's impedance. The 1100 has a 2k-ohm input impedance.

LoCaf is a very effective highpass filtering system with 11 corner frequency choices from 30 to 195 Hz. LoCaf is actually a servo-cancellation circuit with a second-order Butterworth response characteristic that applies an out-of-phase signal component to cancel out all frequencies below the selected frequency.

Using MicLim and LoCaf is like a dream come true for a compulsive, full-level maximizer like myself. On top of LoCaf, with MicLim, you can add up to 16 dB more level before preamp clipping. (The whole idea is to prevent ugly preamp clip by accidental overload from unpredictable sound sources.) If you are willing to accept an occasional MicLim "clamp," then you can record much hotter and still never clip the 1100 or your DAW's input.

produced an exact sonic match.

I tried out MicLim and the digital output on a vocal recording and used one more "click" (4 dB) of gain when accepting a few unnoticeable MicLim clamps. I never once clipped my Pro Tools|HD3 rig running at 24/96 kHz. On close-miked acoustic guitars or big and loud guitar cabs, LoCaf was the most precise filter I've ever used to carve out boomy low frequencies for hotter levels into the compressor.

IS IT A STAR?

The Aphex 1100MkII scores hits with its wide open "fat" sound, precision control of peaks for maximum level, low-frequency shaping ability and superquiet noise floor. The 1100 is especially useful in situations where unpredictable incoming audio levels are the norm, such as live sound remotes. MicLim ensures usable audio when you're working on-the-fly, adjusting levels quickly while LoCaf clears out as much low-end rumble as necessary. If you consider the fully transformerless Class-A signal path, built-in 24/192kHz A/D converter, the unique and modern features, RPA, MicLim and LoCaf, then it's worth more than the \$2,495 MSRP.

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P M 1 D



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Ableton Live 4 Audio/MIDI Sequencer

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Ableton Live is billed as a “sequencing instrument”—a great description of this popular Mac/Windows program. Live is a specialized digital audio—and now MIDI—sequencer that is set up for triggering and processing patterns and loops in real time. You can work with pre-made loops or make your own. In addition to acting as a traditional DAW, Live can automatically trim your recordings into loops.

As its name implies, Live is designed for performance applications that have an unknown duration, including when you need to anticipate how long a solo is going to go, how long a vamp is going to continue or, in theatrical applications, how long an actor might take to exit the stage. It's also set up to allow creative manipulation of all the performance elements in real time, which is why it has become so popular among DJs and remixers. The program is also an outstanding studio production tool.

In the tradition of Sonic Foundry's Acid, Live automatically time compresses/expands clips (pieces of audio) to fit the current tempo, but you do have to manually transpose them to the current key. What's really great is that files on your hard drive are automatically time-stretched to the right tempo while you're auditioning them as the sequencer plays. Of course, Live is also capable of recording audio directly, now at up to 24-bit/96kHz resolution, and it will automatically make clips into loops. You can then arrange, process, manipulate and mix the clips to quickly build arrangements. Live has 17 wacky audio effects built-in, all set up for real-time control, and you can use any VST or AudioUnits (Mac OS X only) plug-ins in your arsenal. Simply drag an effect in to use it on a track or shared return track; it's not necessary to stop the sequencer.

Version 4 comes with two simple (yet cool) virtual instruments built in: a simple, single-velocity-layer sampler and Impulse, a rudimentary percussion sampler. Live can also host VST and AudioUnits. Live can be a ReWire slave or master, so you can use it alongside major digital audio sequencers. It also brings VST instruments to Pro Tools, Logic and Digital Performer users, as those programs don't support

Steinberg/Yamaha's VST format under OS X. Automating pretty much anything is as simple as pushing Record and changing a parameter. Even preset changes in effect processors are automated. It's simple to set automation using breakpoints on lines.

SYSTEM REQUIREMENTS

Ableton specifies at least a G3 Mac with 128 MB of RAM or a Windows 98/2000/XP machine with a 400MHz processor and 128 MB of RAM. For the bulk of this review, I ran it on a Quicksilver dual 1GHz G4 Mac under OS Panther 10.3.4, and it zipped along without breaking a sweat—even when it was ReWired into Logic 7 while Propellerhead Reason was also being ReWired into Logic.

I also tested it on a 2.8GHz Pentium 4 Windows XP machine and on a Mac PowerBook G3 that was upgraded to a 500MHz G4. Under normal use, Live runs fine on a very modest computer. As it streams audio from disk, it does benefit from fast hard drives.

STREAMLINED WORKFLOW

Anyone who's used to working with music and audio software will find that Live is pretty simple to learn. It also helps that V. 4 has several excellent tutorial sessions to get you started, plus there's a huge context-sensitive help panel available any time, which can be hidden.

Everything takes place on two screens: one with standard horizontal tracks (Arrangement view) and one with vertical tracks (Session view). Hitting Tab allows you to toggle between the two. It would be useful for those of us with two monitors to be able to tear off parts of the screen and spread it out, but the layout isn't cramped.

Normally, you'd start by assembling all of the clips you want to be able to trigger in the Session view. Clips may be pieces of audio on your hard drives or those recorded in Live. Whether they are audio or MIDI, both are handled pretty much the same.



Ableton Live's Session view, showing a MIDI clip

The Session view is a grid: Each vertical column represents a track capable of playing one clip at a time, and each cell is a container for a clip. You can trigger clips individually by clicking on them or you can place several clips that are going to play simultaneously in the same horizontal row and then trigger the whole row with one button. These rows are called scenes.

Scenes are commonly song sections but can be anything. If you want a scene to have its own tempo separate from the global one, say 120 bpm, it should follow the naming convention “120 bpm.” This new feature was requested by users who have multiple songs in a single Live set.

Assigning MIDI notes or controllers to trigger scenes—or for that matter, pretty much any parameter in the program—is as easy as choosing the onscreen control and showing it the MIDI message you want to use. Because it has so many controls, I used an M-Audio Oxygen8 controller.

Record your triggers as an arrangement and everything will appear in the Arrange view, along with any audio that you didn't set up for triggering in the Session view. The Arrange view looks a lot like any other DAW, except that the track names and parameters are on the right. The big difference is that you can change the tempo and all of the audio will be instantly stretched or compressed.

Automating anything, from effects parameters to an entire mix, is the same: Push Record and start wiggling controls.

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The Professional Standard

Live has a multiple Undo feature and almost all editing is nondestructive.

Live comes with numerous factory sounds and loops, encompassing a wide range of material, including industrial sound effects, drum beats, guitar comping patterns and even some classical fragments.

FUNKY FX

The included effects are not designed for audiophiles but to create interesting sounds. That applies to both the sound and the choice of effects, such as Vinyl Distortion (my favorite), Ping Pong Delays (with filters), Auto-Filter, Redux (bit reduction) and so on. Even the reverb is *nasty*.

These effects are set up to be “played” in real time. Many of them have dual-axis “dots” that you can drag to move two parameters around to change the sound. For example, Chorus has a dot for modulation rate and amount, and Auto-Filter has one for frequency and Q.

MIDI SEQUENCING

Most of the improvements in V. 4 are operational: Track routing is more convenient, it’s possible to create tracks by dropping clips on an empty space in the mixer and more.

Live now lets you set a swing value with which to quantize clips, even if they were recorded straight. But the major new feature is Live’s MIDI sequencing. This is one area in which Ableton didn’t reinvent the wheel. You can loop-record over a pattern or record linearly, and then edit notes and velocities in a standard piano roll grid. Draw notes in with the mouse and use the computer keyboard to enter notes in real time if you don’t have a MIDI keyboard.

Live has five MIDI effects: chord (auto-harmonize), scale, pitch (transpose), random and velocity, which works like a dynamics processor for MIDI.

GRANULATION WARP

When you import a loop into Live, it makes an educated guess to discover where the beats are by looking at the transients. There’s more to it than that, but you end up with a series of bar/beat markers where Live thinks they should go. You can make these markers movable by double-clicking on them. Moving them moves the audio relative to the beat markers, which opens up a lot of useful and creative possibilities. Ableton calls this feature Warp. One of the more obvious uses for Warp is fixing out-of-time drum

parts, which works really well. You can also apply one Warp setting to several clips.

Live’s time compression/expansion and transposition work by slicing the audio into very fine “grains” that it splices together. You select the best way for it to do this based on the source material: beats, tones, texture or re-pitch (which is normal sample rate-changing). Warping can be quite transparent over a reasonable range or wonderfully weird if you exploit it. For example, it’s possible to slow down a couple of hits inside a loop and radically transpose them. The result can be a really grainy, phase-y and ring-modulated sound. Go and play!

THEREFORE

Priced at \$499, Live is one of the most creative programs to hit the market in years. I now have it almost permanently ReWired into my DAW. I love it.

Ableton (www.ableton.com), distributed in the U.S. by M-Audio, 626/633-9055, www.m-audio.com.



Nick Batzdorf is an L.A.-based composer, producer, engineer and writer.

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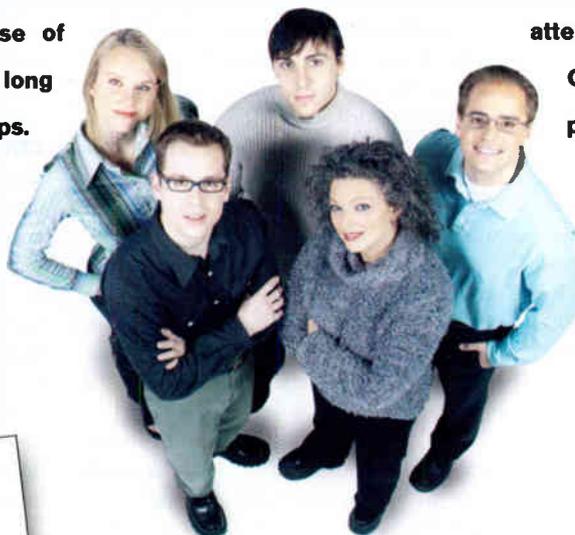
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Thermionic Culture Vulture Distortion Unit

Twin-Channel Signal Warmer With a Spectrum of Effects

The Thermionic Culture Vulture valve distortion unit is a strange bird. The manual's first page reads, "Do not take this unit seriously. The Culture Vulture is a fun effects unit and has been designed for maximum pleasure!" Whether you want full-on distortion possibilities or subtle track warmth, this bird is worth a deeper look.

The unit's spec sheet lists the distortion as 0.2% to 99.5%—very subtle to extreme effects, as you might expect from these numbers. The twin-channel all-tube Vulture makes use of pentode and triode modes that allow for both odd and even distortion effects. To call this box just a distortion unit is an understatement.

FRONT AND BACK

At first look, the labeling and function of the front panel controls on this hand-wired, well-constructed 2U rackmount box might not be obvious. A Bias control adjusts the current through the 6AS6 distortion valve that is displayed on the meter, calibrated in mA. Next to the Bias control is a three-position distortion switch with triode and pentode modes labeled T, P1 and P2. The drive and output level controls vary the amount of gain to which the input and output signals are subjected. Also included is a 12dB/octave lowpass filter set for 4 or 7 kHz. The Overdrive switch increases gain and bias. Beware of the left-to-right mirror image controls: It's easy to reach for the wrong control when working in stereo. Inputs and outputs are by way of unbalanced ¼-inch jacks on the rear panel. Two output jacks per channel provide both +4 and -20dB operation. (Recommended load impedance is 10 kilohm.) Two instrument DI jacks on the front round out the connections.

ADVENTURES WITH THE VULTURE

Being an impatient engineer, I wanted instant gratification by just plugging it in, feeding the Vulture some audio food and twisting some knobs. To my horror, nothing useful happened. After reading the operating manual and receiving e-mail help from the distributor, Unity Audio Ltd., I discovered that a little goes a long way



when setting up this unit.

Under "General Operational Hints" in the manual, I found that normal current setting is between 0.2 and 0.4 mA. More is warmer; less, the tube is starved and sounds thin. Analog tape distortion simulation occurs with a current of about 0.4 mA and using the triode mode. Unity Audio offered an additional list of basic settings that I wish were included in the manual: Drum Warmer, Drum Gating, Bass Warmer, Bass Overdrive and Guitar Overdrive. Because of the wide operating range of the controls and the unit's flexibility, I found that they provided a good starting point for my adventure with the Vulture. But like an old analog synthesizer, when you find a setting you like, document it because there are no presets. The combinations are infinite.

Guitar Overdrive seemed like a logical place to start my discovery process. Less bias, more drive was the setting that gave a larger-than-life, very powerful rhythm guitar sound. I set it for triode mode, set the bias for about 0.5 mA of current and adjusted the drive until the meter dipped on audio peaks. I used this technique for bouncing multiple rhythm tracks in Pro Tools. This alone is worth the price of admission.

Acoustic Guitar was next on my list. I have used other enhancers on acoustics, but the Vulture with a low-bias setting in P1 mode and moderate drive resulted in some nice harmonic enhancement and a big warm tone.

Lead Guitar was the most fun—the variations are endless. P1 and P2 modes with about 0.1 mA created some amazing tones. Watch the meter bounce on the peaks when you adjust the drive. I ended up mixing my original amp track with the output of the Vulture together on the console for more control. I used this technique with several instruments with great results. Bass Guitar was enhanced with the P1 mode and the

drive knob at 7.5 and bias at 5. For more distortion, try setting the drive at 11—yes, the knob goes to 11!

Approach overhead drum tracks with caution: Phase shift and EQ can wreak havoc with a drum mix. I inserted the Culture Vulture and started with triode mode and the bias set to 4. I brought up the drive slowly until I heard it and then backed off a bit. After a lot of serious listening to the full mix using the bypass switches, I found a very nice added sizzle to the cymbals. "A little goes a long way" holds true here. Using it on a drum submix was the last experiment. Based on the results I had with the overhead tracks, I wanted to try the Vulture on the entire kit. Triode mode with drive at 7 and bias brought up slowly to about 4 provided a nice, fat low end reminiscent of good old analog tape.

Other recommended applications include using the Vulture to bounce existing digital tracks to add a little smoothing to analog and digital sampled keyboards, vocal effects and, in some cases, the entire mix.

CONCLUSION

You might not consider the Culture Vulture a necessary addition to your rack, but once you use it, you'll hate to give it up. There's really nothing to compare it to price-wise, so \$1,995 might seem expensive. The fact that it's hand-made and solidly built might make that easier to swallow. Once I figured out the Culture Vulture, I loved it. I spent several late nights exploring the possibilities. If you want to go back to the future of tubes and are tired of the presets in all those DSP boxes, give Vulture a try.

Thermionic Culture (www.thermioniculture.com), dist. by Unity Audio Ltd., sales@unityaudio.co.uk.



Jeff Harris is the owner/operator of Artifact Recording Services in Chandler, Ariz.

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Soundelux e250 Condenser Microphone

Large-Diaphragm Tube for Vocals

Rethinking classic tube microphone design, Soundelux Microphones' cardioid-only e250 condenser mic solves the intrinsic problems encountered when close-miking vocalists with large-diaphragm condensers.

Classic tube condenser microphones were not designed to be used six inches or closer to loud singers. But producers and engineers found that they could get a desirable presence, size and low-frequency buildup by having singers move in closer. Close-miking invites pops, sibilant and harsh consonants or peak overloading of the capsule/head amp. Of course, this seems to always happen during the best performances, necessitating retakes and compromising mic placement and sound quality. The e250 addresses these problems, delivering a more controlled outcome while letting the user maintain traditional miking techniques.

WHAT MAKES IT TICK?

A more affordable and mellow version of the company's ELUX 251, the e250 is not as bright and has a sculpted proximity effect moved up toward the middle of the vocal range rather than more typically below it. Another problem encountered with close-miking vocals is high-frequency directionality, in which any slight head movement by the singer can produce dramatic changes in the high-frequency content. To counteract this, the e250 has a broader cardioid polar pattern than the 251—a fairly directional mic when used up close.

The "free-center membrane" (i.e., edge-connected) capsules are handpicked and individually tested. They are 1 inch in diameter with a 6-micron-thick, gold-vapor-deposited diaphragm and, like the 251, are mounted in a brass holder. Edge-connected capsules have a longer life span as compared to center-terminated types, in which the edge insulation doesn't last under moisture and dirt buildup caused by close-miked vocals.

The e250 retains the familiar ELUX 251 color scheme and uses a one-piece electroless, nickel-plated brass body with welded windscreen. The windscreen comprises

three mesh layers for maximum plosive protection: a medium first layer like the 251, a smaller second layer and then a very fine inner-mesh layer. The e250 also uses Soundelux's Stable Bias circuit design that keeps the bias constant on the EF732 tube, regardless of plosives. A different output transformer than the 251 is used with a roll-off starting at 30 Hz rather than 8 Hz, like the 251's. Delivered in a wood box, the e250 kit comes with a custom shock-mount, ELUX 251's reliable P251 power supply and all cables.

IN THE STUDIO

Some care is required when setting up the e250 as all of the cables must be plugged in before turning on the power supply. The same 6-pin DIN connectors are used as the ELUX 251 for idiot-proof hookup. The shock-mount basket has two thumbscrews that must be fully backed out before sliding in the mic body, as the thick Soundelux logo emblem must pass through and clear each thumbscrew clamp.

After tightening everything down, I set up a Neumann M149 and the e250 side-by-side and had a male vocalist sing a couple of lead vocal passes into each separately, about four inches away straight into the capsules. I used two channels of a PreSonus M80 mic preamp, and no pop screens, EQ or compression. With the Pro Tools|HD4 Accel system set to 24-bit/88.2 kHz, the M149 only required about 15 dB of gain, while the e250 required about 30 dB for +18dB peaks. The e250 "popped" a lot less than the M149, but both needed pop filters anyway. The e250's shifted proximity caused a much thicker lower midrange that greatly enhanced my singer's sound—better than any EQ and/or compressor. The e250's smoother upper midrange seemed very natural-sounding, while the M149 sounded a little harsh and harder in those frequencies. I got a very impressive and big vocal sound using the e250, but I could tell that I might have to add more upper midrange EQ during the mix—an option that I prefer. I didn't notice any distortion, "S" problems or high-frequency loss with slight head movement with the e250.

For my "one-mic drum sound" test, I



placed both mics four feet out front of my small Ludwig kit and both sounded very good. I liked the e250 for its better spectral balance: the right amount of midrange cut, warmth and bass as compared to the M149. It's hard to compare these two world-class mics and the two made a very cool "stereo" pair for my anti-pop music drum loop recording.

At another studio and using an Aphex 1100MkII mic pre [also reviewed in this issue—Eds.], the differences were even more dramatic. I recorded an acoustic guitar with the e250 alongside a very old Telefunken U67. The U67 was dark and muddy-sounding, while the e250 had a much clearer and present sound with slight top-end sheen. The e250 had more output level and a wider pickup pattern; I could tell little difference when moving it in and around the sound hole.

THE FINDING?

David Bock, engineer and co-founder of Soundelux Microphones, has produced a worthy variant of his ELUX 251. The e250 amazed me with its huge and impressive sound on everything recorded with it and is well worth the \$3,000 investment.

Soundelux (www.soundeluxmics.com), dist. in the U.S. by TransAudio Group, 702/365-5155, www.transaudiogroup.com. ■



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Audient ASP008 Microphone Preamplifier

Multichannel Class-A DAW Front End

A home studio's weak point often shows itself in the front end of the signal chain. For those looking for an affordable upgrade to their preamps, Audient just may have the answer.

The Audient ASP008 is an 8-channel mic pre with variable input impedance. Based on the preamp used in the company's ASP8024

IN MY EARS

For most of the review, the ASP008 was externally clocked at 44.1 kHz using a Lucid Audio GENx6-96. For some sessions, sample rate was set to 96 kHz. As an aside, ASP008 runs rather hot, so leave an empty space above it when rackmounting to help dissipate heat.

DAW. On a strummed acoustic guitar, the 200-ohm setting produced an unusable low output, and at 1.2 kilohms, a bit higher. The 5k-ohm setting delivered the highest signal level for the same gain setting.

The ASP008 proved to be an excellent DI for bass and keyboards. Plugging in a Fender Jazz bass produced a round, solid



recording console, the ASP008 employs discrete, Class-A circuitry to achieve bandwidth extending out to 300 kHz and a noise spec of -127 dB. In addition to mic and line-level inputs on all channels, the ASP008 features two front panel 1/4-inch, high-impedance instrument inputs. Optional expansion cards can be installed, enabling A/D conversion and digital audio output of up to 96 kHz/24-bit via ADAT optical or AES/EBU formats. The digital output may be retrofitted, though a return to the dealer will be necessary. My review unit had optional ADAT and AES outputs installed.

AT THE BACK

The ASP008's rear panel features eight locking XLR mic inputs and DB25 connectors for eight analog balanced line I/Os. If there is an option card, the rear panel can also host a BNC jack for word sync input (up to 96 kHz), ADAT optical out, a DB9 connector for AES-S/PDIF out and two small pushbutton switches. These switches select AES or S/PDIF for the DB9 connector (AXI offers breakout cables at an additional cost) and set the unit to internal or external clock.

On the front are controls for each channel that include a three-position impedance selector for the mic input; switches for 48V phantom power, line, polarity reverse and highpass I/O; and knobs for gain (0 to 60 dB) and highpass frequency (25 to 250 Hz, 12 dB/octave). Channels 1 and 2 add an instrument switch and a 20dB pad. A pair of switches cycle through sample rate (44.1/48/88.2/96 kHz) and bit depth (16/20/24-bit).

I first used the ASP008 with a RØDE Tube Classic II microphone for drum overheads. Compared to the Focusrite ISA110 preamp I often use with the Classic II, the ASP008 had a slightly mellow timbre and was audible as slightly softened transients on the snare drum. Cymbals were bright and clear, and the ASP008 had no trouble handling the high output from the Classic II or from the (very high-output) Neumann M149.

IMPEDANCE CONTROL AND GAIN

The variable impedance switch produced interesting results. Increasing input impedance augmented output levels from most mics, including Shure SM57 and SM85, Audix D6, Neumann U67 and TLM 103, and an RCA 44BX. In most cases, the change in level was the only difference noted, with two exceptions being the 44BX and D6. When I recorded finger-picked guitar, the sonic differences were subtle. Five kilohms sounded just shy of muddy in the bottom octave of the guitar and 1.2 kilohms produced a bit more "air," with a slight emphasis on the pick.

Like most ribbons, the 44BX has a low output and some preamps don't have enough gain to achieve acceptable recording levels. The Audient fell in the middle range, where some instruments simply did not give the preamp the help it needed to produce strong enough levels. For instance, when recording the finger-picked guitar, the Audient was disappointing in that, even at the 5k-ohm setting where the output was the hottest, it still didn't provide enough gain for sufficient recording levels to my

bottom end, not much different from the DI on my Avalon AD2022 mic preamp, though the AD2022 was quieter. While recording a sampled piano, I noticed that the analog output added a very subtle coloration in the low mids that warmed the sound a bit; the optical out lacked this coloration.

SURVEY SAYS?

My main criticism of the ASP008 is one of ergonomics. I found it difficult to operate some of the controls due to their small size. Changing the impedance without moving the gain knob was difficult and I often bumped the filter knob when adjusting gain. Some of the indicators are difficult to read due to "LED crosstalk." For example, the filter button LED leaks light into the signal indicator LED, making it barely possible to distinguish "signal present" status. Also, once DB25s are mated to the rear panel, they cover up the designations.

Despite this complaint, the ASP008 is a great tool, especially for anyone looking for an affordable front-end upgrade to their DAW. No doubt, it's a cut above the mic pre's built into most DAW interfaces, both in noise level and sonic accuracy. External sync worked flawlessly (kudos to Audient for including this crucial capability), and between the analog and optical outs, you should be able to interface it with just about anything. MSRPs: ASP008, \$1,495; ASP008 w/ADAT output, \$1,995; ASP008 w/AES and ADAT, \$2,195; ADAT option card, \$525; and AES option card, \$725.

Audient, dist. in the U.S. by AXI, 877/440-2717, www.axidistribution.com. ■

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2 Sony MDR 7506 Headphone

The Sony MDR-7506 headphone is a best-seller at BSW and has been for the last 15 years! It delivers a wide frequency response of 10 Hz-20 kHz in a comfortable, sealed-ear format that provides excellent isolation.

3 AKG C2000 Packages (Two of em!)

The C2000B features a cardioid pickup pattern and is an excellent high-quality condenser recording microphone. It offers almost ruler-flat response providing a crystal-clear, "up-front" sound. Features a switchable bass roll-off filter and 10 dB pad and a built-in pop screen and shock mount. BSW's exclusive package includes the mic, a boom stand and 25 ft. XLR cable!

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Things That Get Hot in the Studio

What Are Meter Bulbs and Cappuccinos?

In the past two issues, I wrote about vacuum tubes. This month, the filament-related theme continues. Light bulbs have been getting the nudge from LEDs for years, yet there are still plenty of old-fashioned VU meters to keep lit. In one month, I've encountered several meter lamp-challenged consoles—only one meter out of dozens remains lit.

I am often asked whether it's better to leave equipment powered 24/7 or turn it off. I believe professional gear should tolerate being "power-cycled," especially if it is not in use every day. Heat dries out capacitors and wastes energy. Either way, bulb life is an issue, especially when replacement requires more than a little wrist action.

Whether for outboard gear, consoles or recorders, finding the right bulbs can be a chore. Sometimes the replacement procedure adds salt to the wound, especially when the bulbs must be soldered—or worse, they're soldered inside the meter.

Many popular bulbs in vintage '70s-era American-made gear use variations on the T1-3/4 "midget" series (bi-pin, screw, flange, groove and wedge). LEDtronics has LED alternatives that draw about half the current of a conventional incandescent bulb and last at least 10,000 hours. (One 24/7 year is 8,760 hours!) The catch is that some distributors require a sizable minimum order. However, according to an LEDtronics representative, its LED replacement for the common 7387 bulb is \$6 each in quantities of one to nine. Not bad for a 2-track bus, but pricey if you're doing 24 (or 48!) VU lamps.

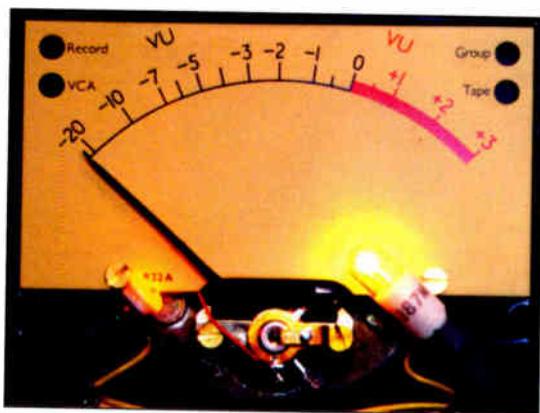


Figure 2: An SSL console meter with clear protective cover removed to access the lamps. At right, the incorrect Type 7387 bulb is installed (for comparison purposes); at left is an LED replacement.

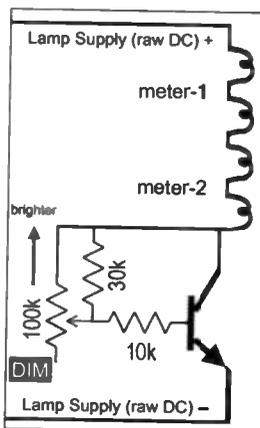


Figure 1: A simple meter lamp dimmer circuit

SWAMP LITES

Many years ago, working in a poor studio somewhere in Jersey, I installed meter light dimmers on a 3M tape machine. By going easy on the juice, we got a lot more mileage out of those 48 bulbs; their only remaining punishment was to endure fast-wind shock therapy every three minutes or so! During a more recent Trident rackmount compressor upgrade, the bulbs and mounting hardware were completely missing. Using what was handy, I installed a very simple dimmer circuit, seen in Fig. 1.

Type 7387 is similar to what MCI used in its meters and costs just \$0.65 each in 100-piece quantities. This version is rated

at 28 volts, 40 mA, so it's conservatively "burning" when fed by a standard 24V supply. The lamps were adjusted to burn only as bright as necessary. Creative variations for this type of mod include adding a photo-resistor so the circuit self-adjusts for ambient light using a timer. If the meter lamps had a dedicated power supply, then it could be trimmed (or modified) down a few volts.

Bulb access for the Trident 65 meters requires removing the clear front cover. You'll need a soldering iron to get them out. Talk about fear factor! Just try to find the perfect bulb: one that's the same brightness and physical size as the others. Somewhat easier are the Soundcraft TS-12 lamps that are soldered to a PCB located behind the meter. These "grain of wheat"-style replacements (12V @ 50 mA) are available from www.mcminone.com as part #25-1370—unbeatable at \$0.26 each in small quantities.

By contrast, just about everything about SSL's 4000 Series was designed for service. It's possible to shut down individual eight-module "buckets" while leaving the rest of the console functional. The bi-pin-style bulbs are socketed inside the meter. Figure 2 shows a standard incandescent and an LED replacement; the latter gets surprisingly hot without a filament!

SCORCHED TASTE BUDS

Last on our theme of "stuff that gets hot" is advice for assistant engineers: Use a candy thermometer when steaming milk for my lattes and cappuccinos! Boiling water is 212° F (100° C), but steam under pressure can be considerably higher. Either way, 140° F is all it takes. ■

Eddie welcomes all to latte-practice. Be sure to bring your fave LPs and 45s. Visit www.tangible-technology.com if ya can't travel.

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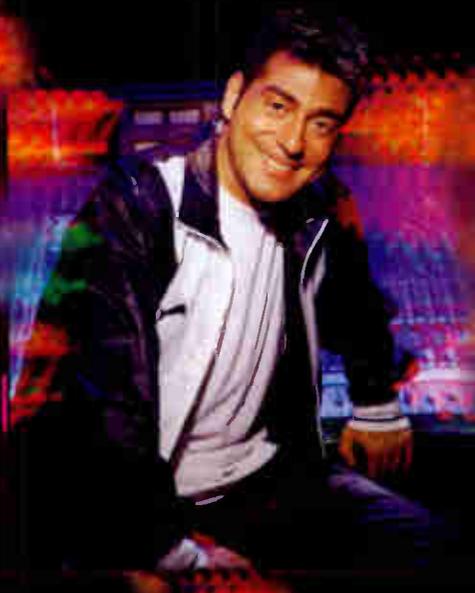
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KEEPING THE COLTRANE FLAME LIT

**ALICE AND RAVI COLTRANE COLLABORATE
ON *TRANSLINEAR LIGHT***

By Chris J. Walker

Ravi Coltrane, son of legendary saxophonist John Coltrane and keyboardist/harpist Alice Coltrane, held on to a dream for nearly 25 years—to collaborate and make a recording with his mother. A classically trained keyboardist, Alice Coltrane had already been in numerous ensembles and recorded many jazz al-

bums before her marriage to John Coltrane in 1965. She played piano in John Coltrane's group following the departure of McCoy Tyner, and after the sax titan's death in 1967, she continued in her mate's footsteps, working with both avant-garde and mainstream jazz musicians, creating her own unique brand of spiritually driven music. In the '70s, she enjoyed her greatest solo successes, including her radiant collaboration with Carlos Santana, *Illuminations*. In 1978, however, Alice Coltrane withdrew from the music world, devoting her time instead to her family, her own inner development and the Vedantic Center she founded in 1975. While she was dropping out, however, her son Ravi was becoming interested in playing music.

"I was a kid and she was an accomplished musician," Ravi Coltrane says by telephone from Elmau, Germany, while touring with his quartet. "When I decided to get involved with music, she helped me out and showed me things to use for the marching band and the little things I was doing, but by the time I really started studying music, getting into jazz and becoming a semi-professional musician, she was starting to leave [music]. She had finished professional recording and didn't want to go on the road anymore. But she was my mom and raised me, so we had a lot of opportunities to play together."

Unfortunately, the general public was never privy to any of those jams, except during the yearly John Coltrane Festival in Los Angeles. The annual fundraising event typically features them together, along with brother Oran (saxophone/guitar) and sister Michelle (vocals). Young scholarship winners and guest artists are also highlighted. In 2004, the Branford Marsalis Quartet headlined; long a Coltrane admirer, Marsalis has even been performing John Coltrane's master-

—CONTINUED ON PAGE 113



ENGINEER/PRODUCER

TCHAD BLAKE

WORKING IN THE REAL WORLD

By Mr. Bonzai

Tchad Blake, one of music's most inventive engineers, moved from Los Angeles to England four years ago. Since then, he has been based in a tiny village near Peter Gabriel's Real World Studios, where he does most of his work in the Big Room. His first major project there was mixing Gabriel's *Up* album, which took three months to complete. In addition, he's been taking on a variety of projects, sometimes as producer and engineer. A few of the artists he has worked with include Phish, progressive jazz group the Bad Plus (whose album, *Give*, earned Blake a well-deserved Grammy nomination this year in the Best Engineered Album category), Swedish artist Stina Nordenstam, Gomez, Sia, Paul Kelly, Sivert Hoyem, Brendon Benson and Travis.

Blake's first big hit was Los Lobos' "La Bamba" with producer Mitchell Froom. He has worked a lot with Froom through the years, and engineered great albums for Los Lobos, Richard Thompson, Suzanne Vega, Tom Waits and Crowded House, to name a few. As engineer and co-producer, one of his best is the Finn Brothers' *Suffer Never*. He has also done memorable work with Sheryl Crow, Soul Coughing and Ron Sexsmith.

Blake is a strong-willed engineer who knows no rules—he uses what is available, whether it is new technology or old, and he is known for creative sonics. We met for this interview at L.A.'s Sound Factory, where he was working with Bonnie Raitt on her new album. Next, he's co-producing an album with Tracy Chapman, recording in San Francisco and mixing in L.A.

What's your home life like now?

I live in a little cottage that was built 400 years ago, and it's on a hill just above a very old village. There are no traffic lights, no street lights, no TV antennas. It's a pretty good little place.

Has this lifestyle change affected your emotional and mental well-being?

Yes, but I wouldn't have been able to tell you for sure if you had asked me over there, but coming back to L.A., I really find the change. I



PHOTO: MR. BONZAI

Tchad Blake in the Sound Factory's Studio B control room, hunkered down at the API console

spent my whole life saying I could never live anywhere else, I loved the city, but I am very happy to have made the change. It's so good.

How about staying in touch with the music industry?

Well, I think I left at a good time because the music industry, at least on my side of it, has gotten a little bit depressed. I'm really fortunate—I haven't stopped working, and I know people who have. I don't know how I have been able to do it, but I think I got some lucky breaks with gigs when I moved. I got a few long-term gigs, including working on Peter Gabriel's record. I also think that being someone new in Europe created interest in my work.

Do you do all of your work at Real World?

Yes, in the Big Room. I love it, almost as much as this—Studio B at Sound Factory in L.A.—which is the best-sounding room I've ever worked in.

What changes have you made with technology? Are you all Pro Tools now?

No, for instance, this session with Bonnie Raitt was started on tape and I'll transfer to Pro Tools. Most of the material I get for mixing comes in on Pro Tools. But everything I've recorded, like two albums with the Bad Plus, has all been tape—no Pro Tools at all. We're going to start a third album in April, all on tape.

What other projects have you worked on?

I mixed Stina Nordenstam's new record. She's

from Sweden and is an amazing writer who sings in English. Very dark subject matter, but she has a beautiful outlook with her music. I love that contrast.

You are well known for having some very odd accessories—your Indian P.A. systems and stomp boxes. Do you still have that arsenal of tools?

Yes, I still have all of it, but most has been in storage until recently. Now I have some good workspaces and I am building a little Pro Tools studio for myself, with all my gear out and ready. It's because many of the musicians I want to work with can't really afford Real World. The studio business has really changed, and I am fortunate to be able to work with artists such as Bonnie, who can afford a traditional studio. But by having my own little studio, I will also be able to work with a wide range of musicians, and I can stay in my village and watch my kids grow up.

What percentage of your work is as a producer, as opposed to being an engineer or a mixer?

Producing is a lower percentage, but since I've been in England...*get this*, I have people calling me up to produce singles! I had to say, "Okay, are you sure you have the right Tchad Blake?" I'm not known for my "radio-friendly" sound. But they are calling me to produce singles, maybe because

—CONTINUED ON PAGE 116

B.B. KING'S "THE THRILL IS GONE"

By Dan Daley

While much of what Bill Szymczyk has recorded during the past 40 years, from The Eagles to Joe Walsh to The Who, now forms the elevator soundtrack to our lives, one record in particular makes him smile when he hears it at the checkout counter in a mall. "I listen to B.B. singing 'The Thrill Is Gone' on the background music and notice people humming or singing along to it and I think to myself, 'Little do you know.'"

In 1969, Szymczyk was just embarking on a career as a producer. After several years in New York City working as a staff engineer at Bob Lifton's Regent Sound and then as chief engineer at Jerry Ragavoy's Hit Factory, the former Navy sonar operator had gone freelance and built a thriving career as an independent audio engineer. But he was willing to take a substantial cut in pay to take on a gig as a staff producer at ABC Records to move his career path toward producing records.

Shortly after signing on, Szymczyk began a four-month lobbying campaign aimed at convincing label executives to let him make a record with B.B. King, whose label, BluesWay Records, happened to be a subsidiary of ABC. Reluctant at first to pair a white producer with a black blues artist, the A&R department relented on the condition that they could sell the idea to King himself.

By 1969, King had already enjoyed a 20-year recording career that included a number of R&B hits. Originally from Mississippi, where he worked as a sharecropper when he was young, Riley King moved to Memphis in the mid-'40s and learned much about blues guitar from his cousin, Bukka White. Later, King had a radio

show in Memphis, and it was his DJ handle—"Beale Street Blues Boy"—that gave him his professional moniker: B.B. King. In 1949, he cut his first sides for Bullet Records and then switched to the RPM label, where Sam Phillips produced his first discs—pre-Sun Records. King's first major hit was "Three O'Clock Blues"—cut in 1951—the first of 18 songs King landed in the R&B Top 20. He didn't fare as well on the charts once Motown started to push the blues to the side in the mid-'60s, though he remained a popular live attraction.

King's records during the mid to late '60s had been produced by Johnny Pate, using King's road band. But once Szymczyk came into the picture, he envisioned a more pol-



Bill Szymczyk and B.B. King make studio magic, circa 1969.

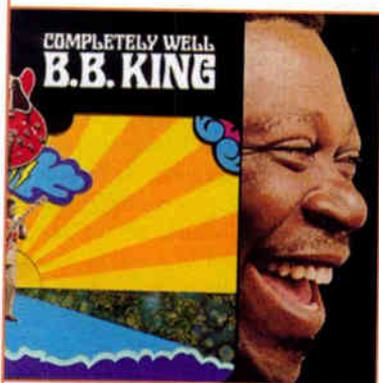
ished, yet still kinetic, recording and, at an initial meeting at King's hotel, pressed the guitarist to use certain New York session players—musicians he had met while working with Ragavoy. "The way it was, B.B. was basically recutting the same record over and over again," Szymczyk says. "I outlined what I hoped to do. He said it was interesting, but he wanted to hedge his bet, so he said we won't do the whole album that way, just half of it, the other half being done the way he always made records—with his band."

The half-live and half-studio *Live & Well* came out in early 1969 and spawned the R&B chart hit "Why I Sing the Blues," which also made a dent in the pop charts. This set the stage for *Completely Well*, containing "The Thrill Is Gone," which would become King's signature song, the franchise that he still rides strong 35 year later. Actually, the song had already been a hit once before for the song's author, Roy Hawkins, back in 1951. Hawkins is largely forgotten today. The song was his last hit and he died in obscurity in 1973.

For the *Completely Well* sessions, Szymczyk repeated the formula that seemed to work well the first time around, recruiting an exceptional set of session players—Herbie Lovelle on drums, Gerald Jemmott on bass, Paul Harris on keyboards and Hugh McCracken on guitar. "It was an evenly mixed band racially—half black, half white—but they were all young guys," Szymczyk recalls. "The energy was there. The black musicians had been doing serious R&B dates for Jerry Ragavoy and Tom Dowd over at Atlantic Records; the white guys were rock 'n' rollers, but they were steeped in the new awakening that America was having with the blues."

On a September evening in 1969, Szymczyk, King and the musicians were at the studio in the original Hit Factory location at 701 Seventh Ave. Ragavoy had built another Hit Factory on West 48th Street between Eighth and Ninth Avenues and was in the process of closing the first studio down, making King's record one of the last to be done there.

Szymczyk arranged the musicians around King, who sat



with his back to a padded wall of the mid-sized (approximately 30x15-foot) recording room, with drummer Lovelle in a corner with low gobos around him, allowing eye contact with the rest of the band but providing some acoustical isolation. In the control room—behind the 12-input, custom-built, rotary fader-equipped console—Szymczyk sat with engineer Joe Zagarino, whom Szymczyk had trained at Regent Sound and who was now a staffer at Hit Factory. Behind them was a Scully 8-track deck. They listened through Altec 604E main monitors and KLH-17 near-field speakers. The guitar played through a Fender Twin Reverb miked with a Shure 57; the bass was a combination of direct and the redoubtable Ampeg B-15 in the room; and the piano was a Wurlitzer recorded with the same sort of signal split.

Like many hit records of an era of limited tracks, the magic was less technical than it was inspirational. “B.B. started playing the song riff in that minor key and Paul picked up on it immediately on the Wurlitzer electric piano,” Szymczyk remembers. “It fell into its groove in minutes. I was freaking out—that’s how good it was. The same musicians had played on ‘Why I Sing the Blues’ and they were pleased with how that had turned out, so the vibe was very up.”

King sang all his vocals live with the track. Szymczyk had placed a Neumann U67, set to cardioid, in front of him as close as possible without being uncomfortable. The amplifiers faced away and the rear wall had acoustical treatment. “This minimized leakage, but there was still plenty of it,” he says. “But what’s a little leakage when B.B. being out in the room singing was part of what made that record so cool?”

The song was rehearsed three or four times before the tape machine was lit up, and by the third recorded take, it was nailed. What sticks out in Szymczyk’s memory is how he let the band continue on with the outro vamp for what seemed like an eternity (actually about eight minutes; long for AM radio). “It was such a great groove,” he says. “Hypnotic and infectious and so damn cool. It was the last track of the last session of the album [which took a total of three days to record] and it was the perfect way to end it.” There were no overdubs, nothing to fix.

A week later, Szymczyk was several blocks away in the new Hit Factory studio on West 48th Street, again at a custom-built console but one with slide pot faders, a novelty at the time. He set up a pair each of U47 and U67 microphones over a 12-piece string section, recording them in stereo to the two available tracks of the original master recording. (The bass and drums had been recorded

The thing I remember most vividly about that session was how B.B. smiled during it. This had never happened to him before—strings on a blues record. I’m not sure it had ever happened to *anyone* before.

—Bill Szymczyk

to two tracks simultaneously during the basic track session; the guitar, electric piano, King’s Gibson 355 “Lucille” and his vocal filled four other tracks.)

“I got the idea to put strings on it,” Szymczyk says. “I called B.B. the next day—in his memoirs, he says it was at 2 a.m. that same morning, but I can’t imagine myself doing that—and he hesitated a bit. But I called in a great arranger, Bert de Coteaux, who wrote this killer, hypnotic chart. Bert had done a lot of charts for Jerry Ragavoy that I had engineered over the years and he was big in the R&B circles. He came up with a great part that plays off the piano lick.

“The thing about the string part was I thought that this is what would put it over the top for the pop charts, make it palatable for a white mainstream audience. And it did. The thing I remember most vividly about that session was how B.B. smiled during it. This had never happened to him before—strings on a blues record. I’m not sure it had ever happened to *anyone* before. When you look at the big picture, this was the track that took him off the ‘chitlin’ circuit and put him in Vegas. I think he could hear that about to happen as we recorded the strings. No wonder he was smiling so big.”

The legato string lines pad the recording and do give it a pop effect that must have seemed radical at the time. Furthermore, de Coteaux’s sharper staccato notes on the vamp anticipate the string parts of the disco era, like those of Van McCoy, whom Szymczyk also listened to avidly in those days.

Szymczyk’s mix for “The Thrill Is Gone” and the rest of the album took place during just two days in the same new Hit Factory location. Effects were minimal: the studio’s two EMT plates. One plate’s decay was set at less than a second to create a small room effect;

most of the tracks were put through that to varying degrees, including King’s vocals. The second plate was used for what Szymczyk calls “the old CBS [Studios] trick”—sending a signal to a “slap-back” effect tape delay and then passing it through the plate set for about a three-second decay, an effect used on the string tracks.

Mastering was done at Sterling Sound, engineered by that studio’s founder, Lee Hulko. “Lee used a Neumann lathe, which was pretty standard at the time,” recalls Szymczyk. “A little EQ and that was about it. No compression. This was before the ‘louder is better’ way of thinking about records.”

Szymczyk says the way “The Thrill Is Gone” came about was emblematic of a career he describes as blessed and serendipitous. “One thing always led to another,” he says. “But ‘The Thrill Is Gone’ was my first big hit; it became my calling card for the rest of my career. When the J. Geils Band hired me, it was because of that record. Believe me, the ‘thrill’ is still here.”

The song made it to Number 14 on the pop chart in the winter of 1970, astonishingly high for a blues record. The album made the Top 40 and stayed on the charts for 30 weeks. And ever since, B.B. King has been the undisputed King of the Blues. ■

ALICE AND RAVI COLTRANE

FROM PAGE 110

work, “Love Supreme,” in recent years.

But it was two other gigs that started the momentum for the Coltranes’ eventual collaboration on the incandescent new album, *Translinear Light*: One was at Joe’s Pub in New York City, the other at Catalina’s in L.A. Both times, Alice Coltrane sat in with Ravi Coltrane’s quartet and enthralled audiences with her wide-open approach to playing and dynamic solos. Ravi Coltrane recalls later saying to her, “Ma, I know you can still play and you enjoy it. Let’s just make a record.”

“I felt for myself that I didn’t want her to leave this world without me feeling I had made a strong document of music with her,” Ravi Coltrane continues. “That was really the goal for me. And the other idea I had was not to make a retro-sounding Alice Coltrane record. But I didn’t want it to be completely out of my mother’s element either, and be like a hip hop or rap thing all of a sudden. That wouldn’t really translate to anyone familiar with her music. So I wanted the record to have a connection to her past, but still be more forward-looking. The choice of the players had a lot to do with that.” Besides

As for the piano, "We definitely talked about it a bit and I mentioned the [Neumann] 149s originally at Capitol [recorded through a vintage Neve 8068]," Genewick continues. For the piano at O'Henry, he used C-12s. "Alice brought in her own organ and it's quite a beast. It has three separate speakers that come out from weird areas. I ended up [using] a 414, the only mic I could get in front of each speaker, which are at her feet. With a couple of decibels of compression, they worked great.

"Sometimes, [Ravi] wasn't sure about different mics, so we put them up and if he didn't like them, we changed them. We had the most problems with the saxophone and changed three or four times for that. We ended up using a [Neumann] U87 on the bell and a KM140 pointed at the bottom of the horn."

They averaged three songs per day and typically did three takes of each. Genewick captured the sessions on Pro Tools|HD (96 kHz/24-bit) through an API board, saying, "Once they worked the arrangement out by talking it through and deciding on solos, that was pretty much it. They're great musicians and had good-sounding instruments—that made it quite easy and there wasn't a lot I had to do, engineering-wise."

Although there were no overdubs per se, there was some editing between takes: Ravi Coltrane and Alice Coltrane selected takes and then Ravi Coltrane would edit on his Mac G4 laptop, usually on a plane, jetting back and forth between New York, where he lives with his family, and L.A., where his siblings and mother live. He additionally whittled down tracks on his home system, which includes Steinberg's Nuendo software, and Grace Audio and True Audio preamps.

"I'm kind of a stickler and like to get in there [technically speaking]," Ravi Coltrane says. "I've been doing hard disk recording since about 1995. I get freaky over microphones and preamps, and I'm very particular about their placement." On this project, "I would make suggestions and if it was cool with Steve [Genewick], that's what we would do. I feel really comfortable behind a console and I've been going to studios since I was a kid. I know what I like and what works for me. Technically, I've got some information, produced my own records and started a record label [RKM Music]. So I'm feeling more and more confident about that side of things."

Final mixing was done to half-inch tape (Genewick's preference for acoustic jazz) at Capitol in about three days through a Neve VR. Genewick says he used very little EQ; in fact, the roughs differed little from the final mixes. He also made minimal use of a Summit limiter and an LA-2A. The initial Ocean Way sessions from 2002, recorded on

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16-track, 2-inch analog tape, were a different story: "I had to use more EQ and they were a little bit more dull than the stuff we had done," Genewick says. "What I did, since I have a big console here [at Capitol], was have a Capitol, Ocean Way and O'Henry drum kit [set up in sections on different faders]. So once I EQ'd and got all of the compression set up for the Ocean Way drum kit, anything that was done there went through those faders. There was a little massaging here and there, but everything pretty much stayed. It would be like, 'We tracked this at Capitol, so let's go to the Capitol faders.' And I had a James [Genus] bass channel along with a Charlie [Haden] one. Overall, once I dialed in one sound, I would keep it."

The goal, of course, was overall sonic fidelity and capturing the electricity of the sessions, like what happened on the song "Triloka": "That was just bass and piano [Haden and Alice Coltrane]—what a moment! Charlie came in to O'Henry and he wasn't even playing on those dates. But he came to do one thing and they said, 'Well, let's just play.' Charlie was standing next to Alice and poking around on his bass. I grabbed a microphone, shoved it in front of him with a short elbow and ran into the control room. The two of them started playing and luckily we were in Record. If you listen [closely], you can hear guys moving around because no one knew we were recording."

Summing up, Ravi Coltrane notes, "[*Trans-linear Light*] was a lot of work. I spent more time on it than anything I've ever done. I have to say I got a little obsessed with this record, trying to make it right. But overall, it was a great experience for me and I didn't want anyone else to produce it. I just could really hear the record and what it was really supposed to be about energy-wise, sound-wise and vibe-wise. I guess I took it kind of personally: This is my mother, our music and we were going to do this *together*. But it was really about her, making things comfortable, finding material she was going to sound great on and make the Alice Coltrane fans happy when they hear this music." ■

TCHAD BLAKE

FROM PAGE 111

they finished their record and want me to take things a little further. It's weird, but I am happy to give it a try. I am also being asked to mix singles—who would have thought I would be doing that? When I was here [in L.A.], they would probably take it to Bob Clearmountain to mix which was fine, because I love Bob's work.

It's an odd thing that over in England I have more offers as a producer, though I am a reluctant one. I'm really an engineer/producer, not a composer/producer. I have to be very careful, because if the artist needs a lot of work on songs from a compositional perspective, I have shortcomings. I like working with artists who have strengths in arrangements and are musically adept. I think I am good at contributing atmosphere and helping them flesh things out. That's why it was so good working with Mitchell Froom. We had our little areas of expertise. I miss working with Mitchell immensely. Solo producing is not my favorite job. Some of the material I get asked to mix isn't up to scratch and I think it would be easier to produce than mix, but I am always wrong. Producing is such a huge commitment, so I really try to pick the work I will produce.

Are people flying in from faraway places to work with you?

Yes, for instance, I did a record with Apartment 26, a rock band. They are actually from England, but they were signed in America, where they were living. I produced the record and Chris Lord-Alge mixed it. It turned out really well, but the record company fell apart and I don't know what came of it.

What is your opinion of the digital state-of-the-art gear today? What's new and good?

I don't know. I'm just getting into it. I did a Phish record in January 2004, and up until then, I knew very little about Pro Tools. I always had an assistant or worked with my wife, Jacquie, who is the Pro Tools brain of the family. I don't like to *look* at music. It really bugs me to look at a screen, but it's impossible to ignore now.

The HD system sounds great, and I am hearing mixes that really just blow me away. It makes me want to go there and I have started to learn it. Three weeks ago, I bought a [Digidesign] 002 to start playing around. With the Phish record, I learned how to do the simple things because I didn't like sitting over someone's shoulder and telling them what to do. You just want to do it yourself.

What about plug-ins vs. dedicated outboard gear?

There are some great plug-ins. I have a little story to tell about working with Bonnie. She played a guitar part and she wanted it to sound weird. I said, "Great, here I go." I got up and rummaged through one of the cabinets here at the studio and found some of my old tuned metal pipes, got a trash can, a little amplifier and a couple of microphones. I was going to start my process of getting that "weird" sound. I was out of the control room for a very short time and when I got back, my assistant, Scott Wiley, who is working



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the Pro Tools and is a great engineer, had used an Echo Farm plug-in, plus a filter on the guitar. I was ready to set up to record and he asked me to listen. It sounded great. I [thought] maybe I should take a break and check on the kids, you know?

Do you have any favorite plug-ins?

I love lo-fi. The [Tech 21] Sans Amp plug-in sounds great. All of the Moog plug-ins sound good to me. They're not the same as the originals, but somehow they've made them new again. That's what I love. I am finding

All the stuff that was really cool about the '60s was the mind-set of playing around in the studio. That's what is in hip hop now.

—Tchad Blake

that some of the plug-in compressors are very transparent. Most of the time, I want coloration and if somebody tells me a piece of gear is really "flat," I usually don't want it. Speakers, microphones—I don't care what it is. Flat, to me, is not good. I want color, I might want boost on the bottom for some applications or I might want the top to drop off in a certain way. Having said that, there are times you need a compressor that's invisible. And some of the plug-ins are invisible, as compared to going through an 1176 or an LA-3A. The 1176 plug-in has less character than the real thing, but there is a use for it.

When people make re-issues, the first thing they do is make it less noisy. "Hey, we've got this fuzz box that is exactly like the ones Hendrix used, but we've gotten rid of the noise!" So what did they do to get that? Anyway, there are changes, and I like it all. I've always liked *the process*—I don't care what the equipment is. I don't care if it's a shitty piece of solid-state gear or tube gear. It's all good, and they all do different things and there is a use for all of it. I'm going to be a Pro Tools guy in 2005!

Any records you've recently heard that have blown you away?

The first N.E.R.D. record kills me. Missy Elliott—all of her records sound great, nothing better sonically. Eminem records are great. Dr. Dre, 50 Cent. For me, all the stuff that was really cool about the '60s was the experimentation and the mind-set of playing around in the studio. It's a fantasyland, and

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you have the freedom to try whatever you want. That's what is in hip hop now. For me, it's not happening in pop music or rock music, though there are always exceptions. There is just more experimentation in the hip hop world.

Have you recorded any hip hop?

No, it's not something that I would normally get asked to do, but I would love to. And listen to Timbaland—the experimentation going on with that producer absolutely blows my mind. There are great mixers and many great-sounding records being made these days. I'm not a Britney Spears fan, but her last record is sonically stunning. Serban Ghenea in Virginia did some of those mixes, and also Niklas Flyckt, who works out of Sweden. That song "Toxic" has absolutely brilliant mixing and production.

On a completely different note, I'd like to mention another great record: Nigel Kennedy with Kroke, *East Meets East*. I can't describe the record, but it is so beautifully and flawlessly done. It's a kind of a klezmer classical music. I wish I had recorded it—it is one of the most beautiful records I've ever heard in my life.

With the transformation of the recording industry and the demise of so many studios, have you seen that in England?

Yes, that's why I am getting into my own studio, and I never before wanted to have a studio of my own. But because of the changes, people are listening differently. It took getting an iPod to figure out what's different now. I'm an old dog who just listens to albums, but the guys from Phish gave me an iPod and I started getting into it. I loaded songs in, put it on Shuffle and went out riding my bicycle. All of a sudden, I discovered it was really cool. I'm digging hearing these weird segues between different kinds of music. Now I get it—it's really fun. And it's not about albums, it's about tunes.

The album genre is a lot of fun, but it has become a bit of a dinosaur. I think the whole Internet thing is going through growing pains, but it's going to be very good for the music business. People will figure out how to keep the rewards of their production and learn out how to make a living with it, because the artist has a job like anyone else. People have to make a living, and when the piracy problems are resolved, it will grow and grow and be bigger than ever. More people will have access to the music, more kinds of people will have access, artists with smaller audiences will be able to sell their work and make a decent living. It's brilliant. Soon, it's going to crack wide open and there will be a tornado of new creativity. It's gonna blow our minds. ■



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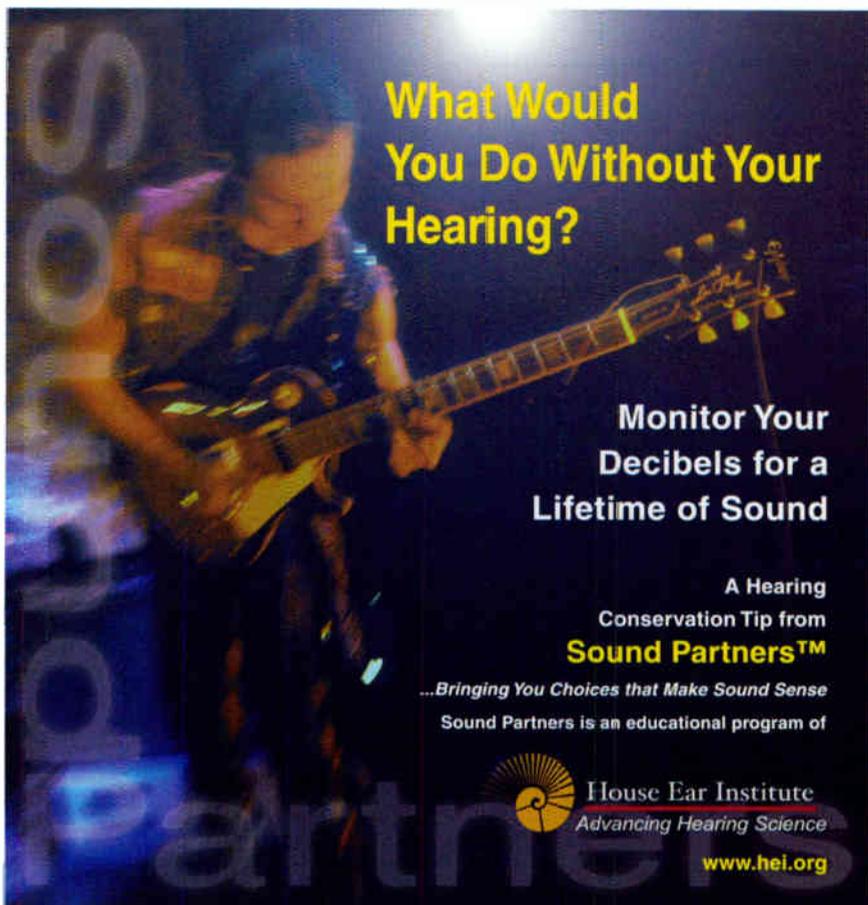


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JA RULE

R.U.L.E.

(The Inc. Record)

Ja Rule's fifth LP showcases a more reflective rapper who draws less on his past albums' thug-like lyrics and bling-bling'n stylized hooks and more on his highly publicized life during the past year (charges of assault and drug possession). Commentating on life in the hood, memorializing fallen soldiers in Iraq and deciphering the difference between strong women and, um, "lady friends," *R.U.L.E.* is infused with powerful lyrics and smooth rhymes geared expressly for R&B crossover radio. Add to the mix appearances by Black Child, R. Kelly, Ashanti, Fat Joe, Jadakiss, Trick Daddy, Chink Santana and many other current hip hop superstars, Rule's latest studio effort is sure to help bring Irv Gotti's Murder Inc. label into the national spotlight—as opposed to the national tabloids.

Producers: Ja Rule, Chink Santana, Gotti, Jimi Kendrix, Cool & Dre, That Nigga Reb, DJ Twinz. Engineers: Won "Engineer to the Stars" and Bee Allen. Assistants and studios available at www.mixonline.com. —Sarah Benzuly



BRANFORD MARSALIS

Eternal

(Rouner Records/
Marsalis Music)

Branford Marsalis'

Eternal is aptly titled. A collection of original and classic ballads, the disc is dedicated to the memory of some of the group's musical and life influences, with each love or loss somberly reflected through a lyrical, sensual music meditation. The adventurous improvisation and experimentation that is a hallmark of the group has been temporarily abandoned here. *Eternal* features songs made famous by Nat King Cole and Billie Holiday, Marsalis' title track and fine pieces by each member of the current band: drummer Jeff "Tain" Watts' "Reika's Loss," keyboardist Joey Calderazzo's "Lonely Swan" and bassist Eric Revis' "Muldoon." Conceptually beautiful and an enjoyable listen, *Eternal* is a newly minted jazz classic.

Producer: Branford Marsalis. Engineer: Rob "Wacko" Hunter. Recorded at Tarrytown Music Hall (Tarrytown, N.Y.), mixed at The Studio in the Country (Durham, N.C.), mastered at Sterling Sound by Greg Calbi. —Breean Lingle



VARIOUS ARTISTS

The Old Grey Whistle Test
(BBC Video)

The Old Grey Whis-

tle Test DVD compilation was culled from the famous BBC British television program of the '70s and '80s that showcased up-and-coming (and a few established) bands from the U.S. and UK. What a treat it is to see early performances by the likes of U2 (still teenagers!), Bob Marley & The Wailers, Blondie, Emmylou Harris (with the first Hot Band), Talking Heads, The Police, The Specials, Roxy Music, R.E.M. (Michael Stipe with hair!), Captain Beefheart, The Ramones, Little Feat, Lynyrd Skynyrd and many others—28 acts in all. Camera work and sound are both superlative, and the extra interview segments revealing. A must-own for serious rock fans, and let's hope there's more to come from the vaults—after all, in England, there have already been three releases featuring many other British and American bands!

DVD producer: Jill Sinclair. Original producer: Mike Appleton. —Blair Jackson



VARIOUS ARTISTS

Enjoy Every Sandwich: The Songs of Warren Zevon
(Artemis)

A little more than a year after Warren Zevon's death comes this excellent tribute album by a wide assortment of his musical friends and admirers. You'd expect spirited and passionate readings of Zevon tunes from L.A. brethren such as Don Henley ("Searching for a Heart"), Jackson Browne and Bonnie Raitt ("Poor Poor Pitiful Me") and David Lindley and Ry Cooder (the little known "Monkey Wash Donkey Rinse"). But some of the gems come from unexpected sources: Adam Sandler with a surprisingly good "Werewolves of London," The Pixies doing "Ain't That Pretty At All," Zevon's son Jordan sounding eerily like dad on "Studebaker" and a wonderful live version of "My Ride's Here" by Bruce Springsteen. A labor of love that's full of heart, soul and great songwriting.

Compilation producers: Jorge Calderon, Jordan Zevon. Mastering: Gavin Lurssen/The Mastering Lab. Individual producers, engineers and studios at www.mixonline.com. —Blair Jackson



JAKALOPE

it dreams

(Orange/Universal)

Jakalope, the all-star industrial collaboration from Skinny Puppy producer Dave Ogilvie, should appeal to fans of current goth/industrial rock-inspired bands such as Evanescence, as well as old-school types who, like me, were into industrial during the *Pretty Hate Machine* era, and who listened to remixes of songs such as "Beers, Steers and Queers" and "Jesus Built My Hotrod." NIN's Trent Reznor produced, wrote and played on several Jakalope tracks, including "Feel It," which features the slow build to wall of angry guitars found on some of Reznor's own tracks. The core lineup includes Ogilvie, former Moev member Anthony Valcic, the "three Dons" (Harrison, Binns and Short) of Sons of Freedom and newcomer Katie B., while the stellar guest list includes members of Monster Magnet, Babes in Toyland and Sloan.

Producers: Dave Ogilvie, Anthony Valcic, Trent Reznor, Jamey Koch. Engineers: Valcic, Ogilvie, Phil Western. Studios: The Fudio, The Warehouse Studio, Orange Lounge Recordings. Mastering: Tom Baker/Precision Mastering. —Heather Johnson



DUKE ELLINGTON

The Centennial Collection
(Bluebird)

There are so many Ellington anthologies available, do we really need another? Yes, and here's why: The single CD contains some of the expected Victor classics from the late '20s and early '30s ("East St. Louis Toodle-O," "The Mooch," "Mood Indigo," "Rockin' In Rhythm"), but also includes seven tracks from a previously unreleased radio broadcast from 1941 featuring Ellington's great band with Ben Webster, Ray Nance, Johnny Hodges and Jimmy Blanton, et al. A companion DVD boasts a number of short films of Ellington and his band in various settings, including a fascinating one from 1937 that goes into vivid detail about how a record is made, from recording through mastering. Great for the casual fan or obsessive Ellington collector!

Reissue producers: Steven Lasker and Barry Feldman. Restoration/mastering, DVD production: Lasker. Original recordings span 1927 to 1941; various studios. —Blair Jackson



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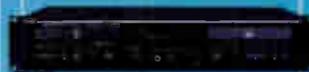
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L.A. GRAPEVINE

by Maureen Droney

A visit with producer Matthew Gerrard at his Santa Monica cottage studio left me amazed: so much music from such a tiny space. One of the busiest producers in town, Gerrard is also one of the most prolific—and one of the hottest—garnering Top 10 singles in pop, hot AC, jazz, contemporary Latin and Christian.

At first glance, it's classic Hollywood: In 2001, after only a year in L.A., Gerrard's

PHOTO: MAUREEN DRONEY



Matthew Gerrard went from unknown L.A. musician with Pro Tools to prolific Top 10 producer after only a year.

career took off with "Get Over Yourself," a Top Five tune he wrote and produced for Eden's Crush that aired on the WB Network's *Popstars*. He went on to help launch Hilary Duff's musical career, producing songs (including her first single, "I Can't Wait," from the *Lizzie McGuire* TV soundtrack) on four of her Platinum CDs, as well as for such other cuties as Jessica Simpson, Lindsay Lohan and Nick Carter.

But overnight success it wasn't. Before Gerrard arrived in L.A., he paid mucho

dues as a multitasking bass player in Toronto. The arranging, producing and engineering skills he acquired made him one of today's new breed of D.I.Y. producers who turn out music quickly, efficiently—and creatively.

"In Canada," he relates, "I had a couple of bands who had reasonable radio success and sold some records, but not enough to keep us going. So I did everything: session work, jingles, infomercials. I had a home studio where I made dance records, swing records, rock records—with full bands! They had all-in budgets and I'd wear all the hats. I became my own engineer because I couldn't afford one. Then I became interested in how to make things sound good."

Gerrard arrived in L.A. knowing almost no one. One of the first things he did was purchase a Pro Tools rig—in retrospect, he laughs, a good decision. "I was a musician with a cell phone and Pro Tools—I was cutting edge." His break came when veteran producer David Foster heard a demo of Gerrard's "Get Over Yourself" and sought him out to re-produce it for *Popstars*.

Logic Audio 7 and Pro Tools are his studio mainstays, although during actual songwriting, he avoids computers. "For composing, I like to sit with a lyricist and a keyboard or guitar and stay as far from the computer as I can. We talk titles and concepts. When something hits me, it inspires the music and the melodies.

Once I have a full song structure, I'll go to the computer."

The demo gets recorded with Gerrard's handheld Sony IC recorder, transferred to Pro Tools as a .WAV file, then burnt onto a reference CD. "When I book a live drum session [at a commercial studio]," he explains, "I'll go through my demos, pick out some that need drums and take them to the session. I might have two songs in a session slated for an upcoming record

—CONTINUED ON PAGE 126

NASHVILLE SKYLINE

by Rick Clark

A few miles northeast of Nashville in the hills of Madison is a sprawling low rancher that was once the residence of country legend Jim Reeves. This is Tone Chaparral Studio, the hideout and workplace of a person some people know as the Tone Chaperone (aka George Bradfute).

It's part-studio, part-creative workshop, part-"boy house," packed with all kinds of instruments, amps and a collection of nutty toys, models and arcane vinyl albums like *Switched-On Buck* (a Moog album of Buck Owens music), *Two Beers and Everybody Sings* and tons of Enoch Light. "It's like bottom-feeders paradise," muses Bradfute, as he plays "I Could Have Danced All Night" from *My Fair Lady* on a violin.

People don't come to Tone Chaparral looking for a studio loaded with a lots of state-of-the-art gear or even sought-after arcane vintage gear. They come for Bradfute's uncanny instinct to set a great vibe (in an already incredibly vibe-y place) and know-how to capture the resulting sparks.

Bradfute first moved to Nashville in 1985 from Memphis, where he was one of that city's top guitarists. He quickly made a name for himself in Nashville as the go-to guy for great custom guitar work at the legendary Gruhn's Guitar Shop, and he even developed a unique line of his own limited-run electric guitars called Rearviews, which were showcased in *Guitar Player* magazine.

One of Bradfute's passions in Memphis was spending many hours working in the studio, primarily Greg Morrow and James Craft's Crosstown Recorders. It wasn't long after arriving in Nashville that he put together his own recording setup and a steady flow of artists started knocking on his door.

"When I first moved up here, I brought a TEAC 2340 tape recorder," he says. "Little did I know that everybody in Nashville was a songwriter, and I immediately began doing song demos in my apartment." Later, he acquired a TEAC 80-8 half-inch 8-track machine and

NEW YORK METRO

by David Weiss

a TEAC 90-16 1-inch 16-track.

Eventually, Bradfute expanded into a house in East Nashville to accommodate the accelerating recording activity that was coming to his door, including projects for David Mead, Bob Bradley, Tommy Womack, Collin Wade Monk, Jason Ringenberg, Royal Wade Kimes, Richard Bennett, Lifeboy, Sonny George and the Legendary Shack Shakers. Another artist who gravitated to Bradfute's digs in East Nashville was Phil Lee, whose debut solo album, *The Mighty King of Love*, earned loads of critical praise for its smartly humorous, rough-and-tumble, singer/songwriter roots rock.

Not only was Bradfute adept at handling engineering and production chores, he was also an extremely versatile musician. "George can play any instrument any way you want to play it; he's fantastic," Lee enthuses. "If you need an English rock bloke from the '60s or '70s, wave a wand and he's that guy. By the same token, if you need a 70-year-old sax player sitting in the lobby of the union waiting for the call, he's that guy, too. He can play anything he puts

—CONTINUED ON PAGE 128

From left: Fats Kaplin, Phil Lee, Richard Bennett and George Bradfute at Tone Chaparral



PHOTO: DEONE JAHNKE

Sesame Street is shot upstairs, but that doesn't mean KAS Music & Sound kids around. Actually, this studio deep inside the historic Kaufman Astoria Studios complex in Astoria, Queens, is one of the most intriguing facilities in New York City.

Sporting one of the largest live rooms in the five boroughs and a quirky history, KAS Music has been continually, quietly working with some of the top talent in the industry, including Keith Richards, Plácido Domingo, Tony Bennett, Andrea Bocelli, Destiny's Child and the Backstreet Boys. While the tradition of excellence that comes with Kaufman Astoria Studios, which features six large soundstages (including the largest outside of California), doesn't hurt, KAS Music is also a place for recording on the edge.

"People come here to get a project done that hasn't been done before," says Joe Castellon, executive creative director of KAS Music. "I have that reputation, and I get pulled into jobs like that. For me, it's the biggest joy to say, 'How are we gonna do this?' and then figuring it out and getting it to work."

To trace the roots of KAS Music, you have to go back to 1921, when the space was the original Paramount Studios—conveniently close to Manhattan for the Broadway actors who were doing film strictly as a sideline. After Paramount packed up for the West Coast, the U.S. Army built its own top-secret pictorial center within the



KAS Music & Sound's Joe Castellon at the Neve V-60

space to make all of its wartime films and remained encamped there until 1972. Next, it was a scoring stage, with classic films such as *The Wiz*, *All That Jazz* and *Hair* going to work inside the space until 1984. That's when Castellon—a producer, arranger and audio engineer—showed up, helping to build the current facility within that space.

The decades of creativity seem to have soaked nicely into the walls of Studio A's sizable 40x60-foot live room, which sports 22-foot ceilings. "I feel that it's the best-sounding large room in New York," Castellon states. "When we built it, the R&D that went into the sound of the rooms was incredible. We have two-and-a-half seconds of reverb that's absolutely flat. We're afforded the opportunity to change the sound of the room, and we can even change the sounds of certain parts of the rooms, which helps with orchestras and ensembles.

"What makes this room so perfect is that you're not worried about getting a certain sound from putting mics in a certain spot or worrying about reflections—it's so good that the choice of placing the mics is a lot easier and the room is able to give you that sound," he continues. "For example, they recently re-recorded the

—CONTINUED ON PAGE 129

ABERDEEN RECORDING OFFERS WIDE-OPEN SPACES INSIDE AND OUT

Aberdeen Recording (<http://aberdeenrecording.com>) is centrally located—right in the middle of the U.S. of A. Situated in northeast South Dakota, just 300 miles west of Minneapolis and about a three-hour drive from Fargo, N.D., Aberdeen ensures privacy and convenience with its location inside the recently restored Alonzo Ward Hotel in downtown Aberdeen. Aside from its historic location and charming, small-town setting, the studio's impressive equipment list sets it apart from other studios found in the most central part of the U.S.

Aberdeen's control room reportedly houses the only 60-input AMS Neve 88R console in the middle states. Studer A827 and A820 tape machines, a Pro Tools|HD workstation, two iso booths and a solid roundup of outboard gear complement the 5.1-ready studio, which features a speaker system designed by Allen Sides with Genelec 1032 monitors and JBL subs.

Artists can also take advantage of the massive ballroom two floors up, which is tie-lined to the control room and features a 63x28-foot space with wood floor and a 48x90-foot carpeted area. Additional amenities include onsite hotel accommodations, coffee house, deli, bar and a full-service restaurant, Alonzo's, above the studio. "Clients can just go upstairs and grab an iced tea or a beer and walk back down," says chief engineer/co-owner Tim Andersen, who opened Aberdeen with partner

PHOTO: HARDIN'S PHOTOGRAPHY



Aberdeen Recording's chief engineer/co-owner Tim Andersen at the Neve 88R

Mark Remily after working as an L.A. engineer for several years.

The ballroom recently got a workout when the Pops Blue Rhythm Band gave a live performance to a crowd of 300 recorded by the 88R. In addition to their current mix of local and regional talent, Andersen plans to attract national acts that want to record "without the label hanging over their shoulder."

ARDENT GETS A TASTE OF HONEY TRIBE



From L to R: assistant engineer Curry Weber, producer/engineer John Hampton and Devon Allman

Devon Allman, son of rock legend Gregg Allman, brought his new band Honey Tribe (formerly Ocean Six) to Ardent Studios' A room to track their forthcoming album for Sanctuary Music Group with producer/engineer John Hampton (Gin Blossoms, North Mississippi Allstars, The Replacements).

THE VILLAGE BECOMES ALT-ROCK "OASIS"

Cantankerous Brit-rock band Oasis recently wrapped up a month of overdubs and mixes for the long-awaited follow-up to their 2002 album, *Heathen Chemistry*, at The Village's Studio A in L.A. Producer Dave Sardy and engineer Greg Gordon were onboard for this go-around; the band parted ways with production team Death in Vegas in early 2004.

Industrial linchpin Trent Reznor occupied Studio D to overdub and mix a new album with guitarists Twiggy Ramirez and Gem Archer, engineer Alan Moulder, assistant Jason Wormer and mountains of gear. Meanwhile, Liz Phair tracked songs for her next record in Studio B with producer Dino Meneghin and engineer Joe Zook.



L-R: engineer Greg Gordon, Oasis vocalist Liam Gallagher, producer Dave Sardy, Oasis guitarist/vocalist Noel Gallagher and Oasis guitarist Gem Archer

BEHIND THE GLASS

3 DOORS DOWN TO EMERALD SOUND



L-R, front row: vocalist Brad Arnold, Andy Wallace, guitarist Matt Roberts, manager Fin, Universal A&R rep Tom McKay, producer Johnny Kay. Back row: Pro Tools engineer John O'Mahony and assistant engineer Allen Ditto

Mississippi natives 3 Doors Down skipped over to Nashville, where they mixed songs from their forthcoming Universal release, *Seventeen Days*, at Emerald Studios. Engineer Andy Wallace worked on the SSL 4064E/G Series desk in Studio A, with producer Johnny Kay at the helm.

DJ KAY SLAY KEEPS PACE AT CUTTING ROOM



From left: DJ Kay Slay, assistant engineer Alex Miller, engineer Steve Schopp and Ron Artest

Hip hop artist DJ Kay Slay has been working on various projects at The Cutting Room's (NYC) Studio A, bringing in cohorts such as keyboardist Money Mark (the unofficial fourth Beastie Boy) and rap artists Canibus and The Game. Suspended Indiana Pacers forward Ron Artest, who is reportedly pursuing a music career of his own now, stopped by to hang.

SOUTHERN CALIFORNIA

At Glendale's Real Sound Studios, producer Jaeson Jarrett and engineer Vachek Aghamiantz completed re-eciting and mixing of the six-disc compilation *The PPL Records Story Volume III & IV*. Jarrett also mastered guitarist Riki Hendrix's solo debut, featuring two original members from Jimi Hendrix's Band of Gypsies, at Metrosound Studios (Granada Hills) with engineer Tom Thomas...Henson Recording Studio (L.A.) welcomed Capitol Records' Chingy as he recorded an interview and his hit single "Ballu Baby" for *Sessions@AOL*.



The Thornbirds visited the Record Plant in L.A. to record and overdub songs for their next album and a single for MTV's *Made*. From left: engineer Bryan Davis, producer Jim Ervin, assistant engineer Cole Williams and Mike Eleopoulos, Pro Tools engineer

NORTHWEST

Nettleingham Audio (Vancouver, WA) engineer Kevin Nettleingham mastered releases for indie bands: Eleven Minutes Away and Lord Gore. Producer Jeremy Bruchett mastered Todd Davidson's new album and releases for PDX artists Johnny Martin, Falling Closer, Liftoff, Martyr Reef and Step of Faith, and mixed tracks for hip hop artist Rama, among other projects...Congrats to Bay Records (Berkeley, CA), which just upgraded to a Pro Tools|HD2 Accel system and added an Apogee Rosetta 800.

SOUTHEAST

Tommy Dorsey recently mastered two albums by the Blood Violets for alt-rock producer Michael Quinlan at Masterfonics (Nashville), another new Quinlan-produced album from Everyday Sunday and Cinderella's forthcoming live DVD. Benny Quinn mastered albums for country artists Craig Morgan, Tracy Byrd, Tim Wilson and the Atlanta Falcons' new theme song, "Falcons Fever," by Travis Tritt and Billy Walker...Pat "Sleepy" Brown visited Doppler Studios (Atlanta) to record vocals for Tupac's latest posthumous release, *Loyal to the Game*. Red Spyda produced; Alec Newell engineered. Mario Winans produced and Phil Tan engineered the mix of "If I Hit" by 112 featuring T.I. (Island Def Jam). Other recent Doppler visitors include Teairra tracking for a new release produced by Dre & Vidal Ciara, and Kanye West working on his own project and producing tracks for Beanie Sigel.

SOUTHWEST

Former 5th Dimension singer Joyce Pierce visited SugarHill Studios (Houston) to record her solo debut, *24/7 Intimate Praise*, with producer/SugarHill president Dan Workman and staff engineer Steve Christensen. Blues trumpeter and former B.B. King band leader/arranger Calvin Owens worked with chief engineer Andy Bradley on three studio albums, a live DVD and a rap remix album...Maximedia (Dallas) welcomes Brown Bannister in producing *Mercy Me*, and Jay Joyce, who is producing and engineering Nicole Nordeman's upcoming EMI release.

MIDWEST

Bossa guitarist Carl Brueggen visited Engine Studios (Chicago) with producer Brian Deck and engineer Colin Studybaker. The team is also mixing an album for Minneapolis-based Robert Skoro, while Studybaker tracked and mixed an EP with local punk band The Pedestrians. Levi Fuller tracked with Deck as producer with Balthazar De Ley engineering...New age pianist Lorie Line mastered her latest CD with Greg Reiersen at Rare Form Mastering (Minneapolis). Other recent RFM projects include hip hop artists T-Hud and J-Flo.



Rick Derringer (left) and engineer Rob Wechsler raise a glass at WexTrax Mastering Labs (McKinney, TX) after mixing and mastering the forthcoming *Live@theMax* DVD/CD from the Rick Derringer Band, to be released later this year.

NORTHEAST

Ryan Adams and his band, The Cardinals, stopped by LoHo Studios (NYC) to track with co-producer JP and engineer Tom Schick for two upcoming albums. Ben Jelen started pre-production with engineer Joe Hogan, and Eric Andersen recorded songs for his forthcoming release with producer Robert Aaron and engineer Andy Grassi...Carly Simon visited the Cutting Room (NYC) with producers Richard Perry and Lauren Wylde to work on a new standards record. Dylan Margerum engineered. Engineer/producer Chris Griffin mixed tracks for UK band Vertigo out of the UK, and The Funk on Me wrapped up their new record with Margerum at the board. ■

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and a few others that are demos. A lot of my demos end up being masters anyway; I might as well do them right."

As a bass player, Gerrard's worked with enough drummers to know how to program a decent drum track in Logic on his EXS sampler. He does, however, prefer to use live musicians when possible. "Adding players adds flavors and makes recording more fun. We recently did a track that way for Jesse McCartney, with everything live but the organ."

When it can't be live, there's the studio arsenal: "Some of the new loop things are awesome, like the Stylus RMX," he offers. "Arturia's Minimoog 5, the Moog Modular and the Charlie Virtual retro organ all sound great."

Vocals get recorded using a footswitch talkback system ("I can talk to the singer and edit at the same time") and, usually, a Vipre variable-impedance tube mic preamp, an LA-2A and an Amek 9080 EQ. Mixing tends to stay in the box, both at Gerrard's studio and at the home studio of engineer Krish Sharma (The Matrix, the Rolling Stones). "The key is, we have identical systems," Gerrard explains. "The same version of Pro Tools, the same default settings, the same plug-ins. We take mixes back and forth and get to listen in different environments."

Fast, efficient and, "Ninety percent of the time, I'm having fun," Gerrard concludes. "When I came to L.A., I had no idea what would happen. I allotted a certain amount of money and told myself when it was gone, I'd go back to Canada."

There's no Canada looming: Gerrard's "Breakaway" with Kelly Clarkson hit Number One on the pop radio charts, and there's more in the pipeline, including cuts for Smash Mouth's Steve Harwell, Beu Sisters and Sara Overall.

New year, new business model. You can always rely on studio veteran Skip Saylor for a unique point of view. These days, it's about the changing role of the recording studio. After a foray into expansion at Devonshire Studios in North Hollywood, Saylor has regrouped and re-organized. Now back at his original Larchmont Village location, he's returned to his roots: producing and engineering. He's also allied with a couple of other industry vets—producer/keyboardist John Barnes (Celine Dion, Michael Jackson, Keb' Mo') and programmer/producer Chris Johnson (Evanescence, Josh Todd, Hilary Duff)—to provide multifaceted production services. And although Barnes has taken over the suite of rooms that comprises Studio B,

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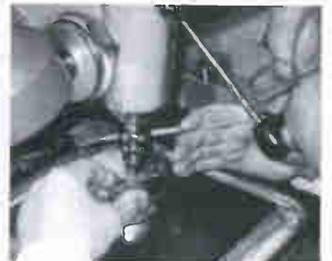
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~ Hugh Robjohns
Sound on Sound



"In all of the applications, the M930's small size was an asset. I found myself writing the word superb over and over. The M930 gave me lovely, unblemished signals, that were easy to mix and required little or no EQ. The M930 is a rare critter. In short, a superb professional microphone, among the best I've used. I bought them."

~ Paul Stamler
Recording



Saylor continues to operate Larchmont's A room as a studio-for-hire.

"The real focus of my business is the work I'm doing with John and Chris: track building," Saylor explains. "In some cases, that's programming and engineering, but it can also be producing, arranging, songwriting and/or licensing. It's project-dependent.

"For example," he continues, "John and I are working on a jazz project with [R&B saxophonist] Ronnie Laws for HDH Records—Brian and Eddie Holland's label. John is producing and arranging, and George Clinton alumnus Larry Ferguson is working with me on recording and mixing. And Chris and I just finished five songs for Amanda and Travis Marsh, a young Christian pop act. We produced all the tracks, recorded their vocals and mixed.

"Things just kind of fell together. I called Chris to help out on a project I'd been hired to do, thinking it would just be for a day, and we've done about 10 projects together this year. John called me to help out with a project and he ended up taking over Studio B."

Studio A now houses the 100-input SSL G+ console previously owned by Music Grinder. It still boasts a trademark Saylor wall of analog outboard gear, and its iso booth has been enlarged for more convenient recording. Black Sabbath's Geezer Butler was in recently with mixer Toby Wright, and artist/producer Butch Walker worked on a number of projects there, including Warner Bros.' American Hi-Fi (with engineer/mixer Paul Hager) and the theme song for Richard Branson's reality TV show, *Rebel Billionaire*.

"What I'm doing now is what I've always wanted to do," Saylor declares. "At one point, I had five studios, an engineer management company with 15 clients and a lot of people depending on me to pull the wagon. Now I'm actively making music with a great group of people.

"A commercial studio will always be part of what I do, but the people that we're working with need more than just a studio: They need help building tracks. Everybody wants to be competitive, but they also want to keep the essence of their music. Veterans like me, John and Chris know how to keep integrity in the music. In addition to live tracking, we're dealing with all formats of DAWs and software-based music production platforms. We know how to provide the right kind of environment and how to fit all the pieces together." ■

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PHOTO: MAUREEN DRONEY



Skip Saylor (left) and John Barnes at Skip Saylor's Studio A

NASHVILLE SKYLINE FROM PAGE 123
his hands on and knows every one of the right knobs to turn."

During the first stages in making that album, Lee brought over Richard Bennett. Bennett, a top-notch producer (Steve Earle, Emmylou Harris, Marty Stuart, etc.) and journeyman guitarist (Mark Knopfler, Neil Diamond), not only fell in love with the whole sensibility of Bradfute and his place, but he also took on producing the rest of Lee's album, as well as his next one at Chaparral.

"Working with Richard and George is like being on an expedition with Lewis and Clark—they've got 'the maps,' those two," exclaims Lee. "They're quite a team and they're very creative and patient."

Bradfute moved to his Madison location in 2000 and the business followed, with artists ranging from Garth Brooks to Steve Earle to Danny Davis (Nashville Brass), Todd Snider and Eddy "The Chief" Clearwater, whose album *Rock 'n' Roll City* was a Grammy finalist.

Bradfute's current setup includes a Nuendo system and the Alesis HD24, though he'll still fire up the 1-inch 16-track when occasions dictate.

Bennett, who cut his new solo album, *Themes From a Rainy Decade*, with Bradfute at Chaparral, comments, "I do sessions all the time in these studios with all the best gear, and the stuff sounds tinny and hard and small. But at George's scene—with his Russian and Chinese mics and his little Mackie board and rack of guitar stomp boxes—somehow everything sounds big and real. Why is that? Everything goes

through the George filter."

Lee describes Bennett's *Themes From a Rainy Decade* as Ray Conniff meets the classic English band The Shadows. That's a pretty good description, but it's much better than that. Each elegant track is like some great timeless theme for a classic movie. Bennett not only acknowledges that sensibility, he is also quick to talk about classic easy-listening music and that genre's giants.

"Funny enough, in the very early stages of this, I kind of got George turned on to this Command Records binge," says Bennett. "He wasn't hip to Command Records or old late-'50s Ray Conniff records—not the things with all the syrupy backing and singers, but the really incredible arrangements and swinging instrumental recordings he did earlier. I then turned him on to Bert Kaempfert and Tommy Mottola. All of a sudden, it opened up a new world for George. Without targeting anything—like 'Let's make this sound like Bert Kaempfert'—we were just kind of in that frame of mind, so when I started pulling these tunes out, all of a sudden he knew they were coming from a certain context and he knew how to approach them sonically."

Both Bennett and Lee are looking forward to returning to Tone Chaparral. In the meantime, Bradfute co-produced two albums with former Jason & The Scorchers lead singer/songwriter Jason Ringenberg: *Empire Builders* and a children's album called *A Day At the Farm With Farmer Jason*, both for the Yep Roc label. Bradfute also just finished Kimes' latest album, *Cowboy Cool*.

"It's Nashville contemporary country with traditional Western cowboy music and some real funky stuff thrown in," says Bradfute of the *Cowboy Cool* release. "There is a great cowboy western story song called 'The White Horse' and another song that sounds like Sly & The Family Stone meets country called 'Wild Love.'"

In closing, Lee offered this sentiment about Bradfute and the Tone Chaparral: "Besides being the perfect place to record, I wouldn't make a record anywhere else or with anyone else. If he ever moves back to his hometown, Richard Bennett and I will either lay down in front of the truck or have to move down to the Peabody Hotel in Memphis." ■

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NEW YORK METRO FROM PAGE 123

music for Leonard Bernstein's *Peter Pan* here with this delicate 25-piece orchestra. It sounded just as at home in the right spot in that room as when two days before we had a very loud [electric guitar ensemble] rocking out."

If you feel an interesting little buzz in Studio A's two adjoining iso booths, it may be from the highly unusual materials used to construct them: Farraday shielding, a conductive enclosure that absorbs radiant energy and directs it from the Earth. "It blocks out radio waves—the Army was afraid of being bugged," Castellon explains. "The Farraday shielding doesn't impart characteristics, but as you pass from the studio into the iso booth, it's just completely dead. We like to record drums and brass there, and it's also used a lot for animators because we're able to put up three stations in there so everyone is isolated but have visual contact."

The control room is also a tight ship, centered on a Neve V-60 with Diskmix automation and Pro Tools|HD3. "It's a Neve V-60 that we've re-capped twice and the preamps are stunning," says Castellon. "This is a wonderful-sounding 'live-end, dead-end' control room, which means there's no reflections within the room. There is a very wide sweet spot behind the console, and just about everywhere you stand in the control room you hear what everyone else hears."

With so many different kinds of projects coming through the studios, flexibility is the guiding principle of the equipment list. In addition to the Pro Tools system, KAS Music features a SADiE workstation

with eight tracks of DSD, three 2-inch analog machines and multiple other analog and digital tape recording formats. A Weiss Harmonium helps maintain 24-bit/96k quality throughout the production whenever possible. "Our normal format is going into Pro Tools at 24-bit/96k, and with that Harmonium, which has EQ, dynamics and some mixing inside, we're able to keep the project in that format through to the master," Castellon notes.

KAS Music is also wired to the other five soundstages throughout the facility. "If they're doing a big musical show on the stages, we have fiber-optic connections so everything can be recorded and processed here and sent back up to them," Castellon adds.

With such productions as *Law and Order: Trial by Jury*, *Sesame Street* and multiple movies, TV commercials and others constantly in motion throughout the KAS facility, Castellon's live and iso rooms are often blessed with a stream of built-in business. "We can work in all these different parts of the business, and we save the producers a whole lot of money and time," he explains. "KAS Music is really a one-stop facility.

"We usually do the work for all the TV shows that are filmed here," he continues. "The shows do their ADR, voice-over and music here, and we're also able to help them when they're shooting movies. Frequently, the movies that the stars were in before they came here to shoot their current project are in post-production, so we end up doing the ADR and those things for what the stars did before. They just come down in the elevator and get it done: Once, Whoopi Goldberg did four different projects here without leaving the building. The people that work here end up loving it. It's also a good arrangement for us because we're able to go into different aspects of the business and get the exposure of being in this type of facility."

KAS Music may have found just the right balance of tradition, audio precision and the experimental spirit to thrive. "With a lot of the studios going away, we're really one of the last places that can do certain types of work, like movie scoring with large ensembles," Castellon points out. "On the other end of it, rock bands and jazz projects are just incredible here. Because of our sound and experience with doing so many different types of music, and our love for the music, we have a real home-type environment. It's a nice way to work." ■

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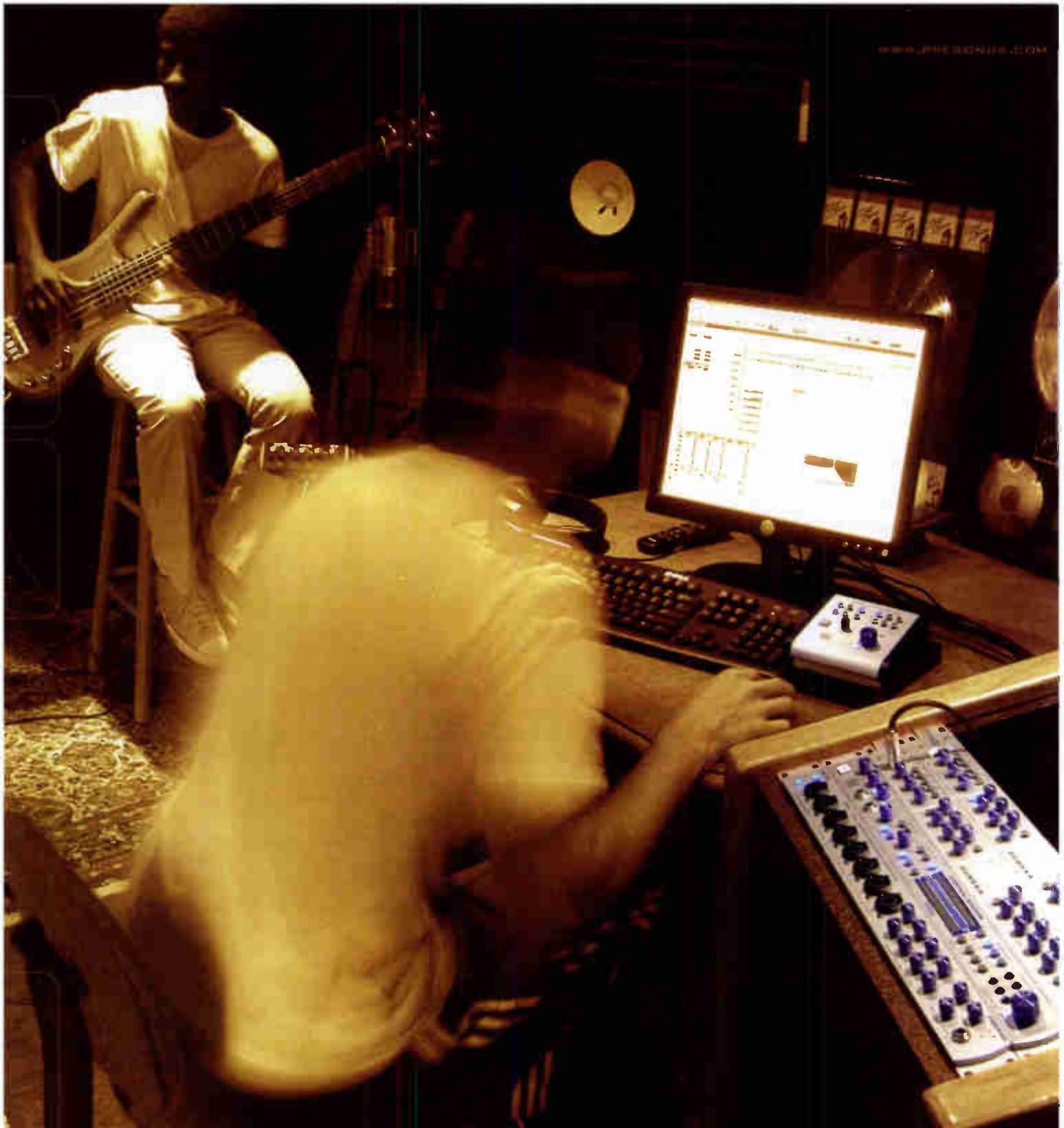
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—FROM PAGE 30, A TALK WITH JOHN CHOWNING
until I could finally get an answer in a way I could understand it. That's how I learned physics and acoustics."

Chowning's first work at the computer center at Stanford in the early '60s was with reverberators and other spatial illusions in a 4-channel surround environment. "When I started out," he says, "someone told me I would need vector algebra, and I said, 'Yeah, right,' but instead I thought, 'How else can I capture this information about distance and Doppler Shift?' Well, I just did it graphically. The lab had an arm with potentiometers in two angles, like a drafting machine, that plotted points on a CRT—sort of a precursor of a mouse. It plotted the points at a constant rate, so if you moved more slowly, the points were closer together, and if you moved faster, they were further apart. So I would just measure the points and that would give me the velocities. And it worked. Some of the mathematicians there laughed at me, but I got this 4-channel system to make these sound paths.

"That was the single most important point of learning for me: the importance of programming. I couldn't solder—I still can't—but I could make all these things with just a modicum of programming skill. I could bypass all the [engineering] detail and go directly from brain to output with just programming. I would write a subroutine to do a spatial path and another to do a circular path, and just use them whenever I needed to. The essential notion of efficiency came to me like a knock on the head."

In Chowning's view, musicians and computers are not at all an unlikely combination. "Music is a symbolic art," he says. "A painter gets the sensory feedback immediately, but musicians are used to writing things on paper and hearing them later. So they have to deal with symbols, things that are some distance away from where they are at the sensory level. It might be why music was the first of the arts to make so much artistic use of the computer. I know that other artists were working with computers at the time, but there wasn't this rush of activity—I've got to get back to the computer center to work on my piece—that musicians had. And this wasn't the electronic music I heard in France. There was now this whole other dimension besides just producing electronic sounds."

The idea of a musically oriented research environment with a variety of brains to pick resulted in the founding of CCRMA. Chowning usually gets the credit, but, he says, "I didn't create it—it just sort of happened. Andy Moorer, John Grey and Loren Rush were grad students there, and

we were doing projects that came out of a collegial need. We'd ask each other, 'What are you doing?' 'Can you modify that?' Lots of applications would develop from that. Because what we were doing was interdisciplinary, it didn't fit in the music department, which was dominated by musicologists. So we decided we should form some sort of center that would allow

I couldn't solder...but I
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directly from brain to out-
put with just programming.

—John Chowning

us to apply for funding. I was the one on the faculty, and so I became the director. I chose good people—the idea was to make an open, accessible system and then leave people alone. The downside was that I became the administrator. There were fights to keep it intact and funded."

Initial money came from the National Science Foundation and the National Endowment for the Arts, but a big break came when the Systems Development Corporation came across with \$2.7 million. "Systems Development Corporation was a Defense Department contractor, and they had made an enormous amount of money," says Chowning, "which they had to dispose of. We were one of four centers to get grants for computer music." The grant came in large measure because of the efforts of John R. Pierce, another Bell Labs scientist (among whose myriad major accomplishments was coining the word "transistor"), who was so enamored of the center that he worked at CCRMA for more than 12 years as a "visiting" professor without ever asking for a salary.

It was in 1967 when Chowning first discovered the idea behind FM synthesis. "I was experimenting with extreme vibrato," he recalls, "and I heard these inharmonic sidebands. I did a bunch of experiments, and I brought in an engineer to see whether what I thought I was doing was what the science would say that I was hearing. He looked at the equations and said, 'Yeah, that's right.' It was all very counterintuitive: Not a theoretical

discovery, it was an ear discovery.

"But I was deep into the quadraphonic stuff so I put it on the back burner," he continues. "In 1971, I was thinking about work that Jean-Claude Risset had done in additive synthesis [among Risset's contributions was showing that the harmonic spectrum of natural sounds changes with overall amplitude] and that Max Mathews had done in analysis synthesis, and I realized I could do the same sort of thing by coupling an amplitude envelope to a modulation index." In other words, by varying the amount of frequency modulation over time, he could control the spectrum of a sound by using just two oscillators. "I realized it was all predictable, and within a few tens of minutes, I had some pretty passable brass tones. So then I wrote an article for the *AES Journal*, which was published in September 1973."

Like The Beatles being turned down by the first few record companies their manager went to, Chowning's ideas on FM synthesis were rejected by several companies that Stanford's Office of Technology Licensing tried to get interested. Among them were Hammond and Wurlitzer. Chowning says of these companies, "Frankly, I don't think their engineers understood it—they were into analog technology and had no idea what I was talking about.

"But then the office put a Business School graduate student on the project, and he found out that the world's largest manufacturer of musical instruments, even though they didn't have much of a presence in the U.S. at the time, was Yamaha. One of their engineers was visiting their American office, so he came up to Stanford for the day. I guess they had already been working in the digital domain, because in 10 minutes, he understood exactly what I was talking about." The rest, as they say, is history.

Though not exactly linear history. "Of course, the Yamaha patents made a huge difference," says Chowning, "but they didn't begin to pay off for a number of years." And in the meantime, Chowning had lost his job. "Like many universities, at Stanford you teach for seven years and then they either give you tenure or you're out," he says. "No one understood what was going on in computer music so they didn't promote me, and in 1973, I had to leave."

Next month: The answer to my question on the future of instruments, the meaning of the DX7, what musical instrument designers should be working on today and how the professor got his spot back. ■

Paul D. Lehrman is working on music for a film about the Governor and has a nontenured faculty position at Tufts University.

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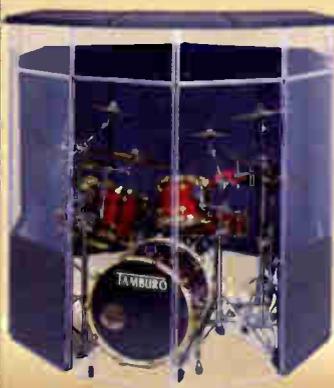
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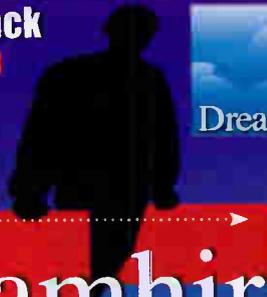
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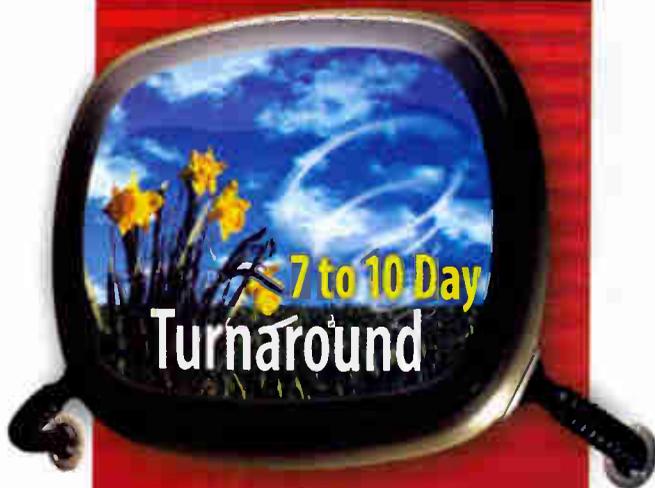


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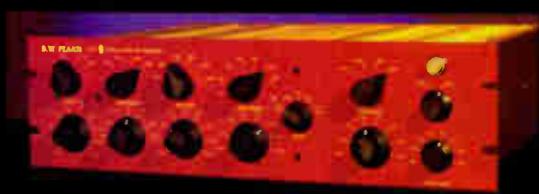
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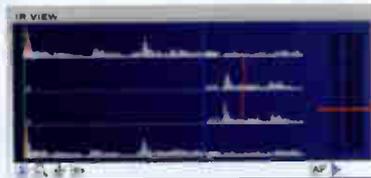
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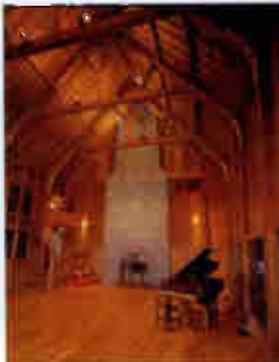
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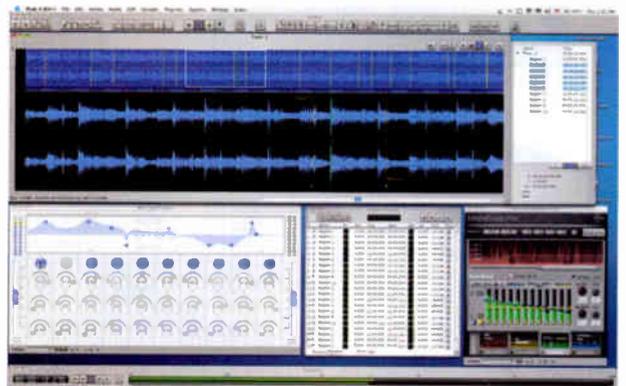
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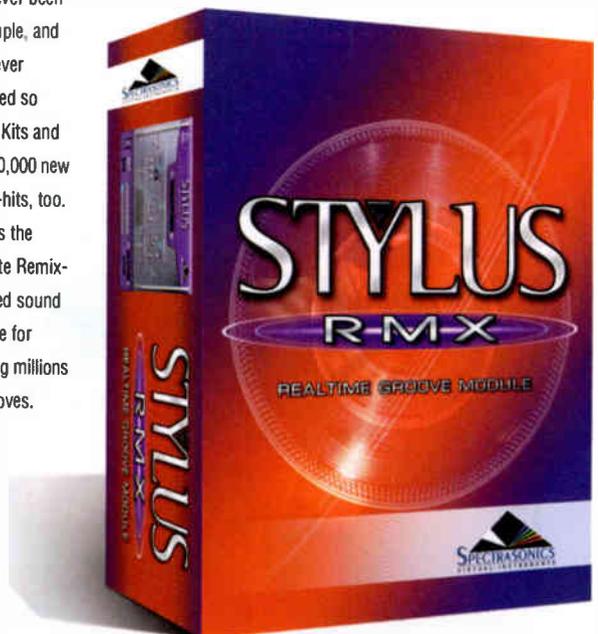
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clearly and minimize ear fatigue. In addition, the Central Station features a complete studio communication solution with built-in condenser talkback microphone, MUTE, DIM, two separate headphone outputs plus a cue output to enhance the creative process. A fast-acting 30 segment LED is also supplied for flawless visual metering of levels both in dBu and dBfs mode.



Mackie Control Universal™ Automated hands-on control for the DP4 studio

Imagine the feeling of touch-sensitive, automated Penny & Giles faders under your hands, and the fine-tuned twist of a V-Pot™ between your fingers. You adjust plug-in settings, automate filter sweeps in real-time, and trim individual track levels. Your hands fly over responsive controls, perfecting your mix — free from the solitary confinement of your mouse. Mackie Control delivers all this in an expandable, compact, desktop-style design forged by the combined talents of Mackie manufacturing and the MOTU Digital Performer engineering team. Mackie Control brings large-console, Studio A prowess to your Digital Performer desktop studio, with a wide range of customized control features that go well beyond mixing. It's like putting your hands on Digital Performer itself.



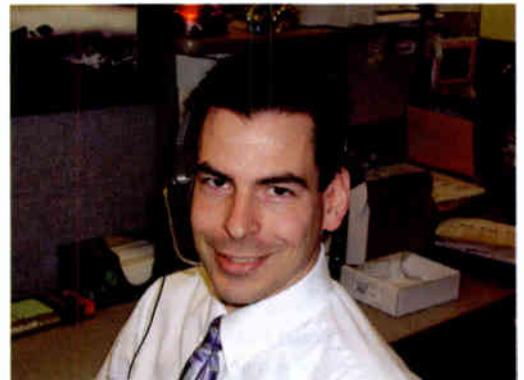
Mackie HR-series Active Studio Monitors Nearfield monitors for your MOTU studio

Mackie's HR-Series Active Studio Monitors are considered some of the most loved and trusted nearfield studio monitors of all time, and with good reason. These award-winning bi-amplified monitors offer a performance that rivals monitors costing two or three times their price. Namely, a stereo field that's wide, deep and incredibly detailed. Low frequencies that are no more or less than what you've recorded. High and mid-range frequencies that are clean and articulated. Plus the sweetest of sweet spots. Whether it's the 6-inch HR-624, 8-inch HR-824 or dual 6-inch 626, there's an HR Series monitor that will tell you the truth, the whole truth, and nothing but the truth.



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Native Instruments B4 Organ Software

Digging Beyond the Presets

During the past couple of years, Native Instruments' B4 has become popular in studios and touring rigs everywhere—and with good reason. Essentially, B4 offers fool-the-experts simulation of that classic Hammond B3 organ sound from an inexpensive (the full version lists at \$235) software disc that runs stand-alone or as a VST/RTAS/AudioUnits plug-in for Mac or PC. Besides, weighing 400 pounds less than a real B3 does have its advantages. The program is straightforward and about as close to plug-and-play as it gets. Operation is easy, thanks to its simple control and keyboard screens to access parameters, presets, drawbars and rotating speaker controls, but here are a few tips that can take your B4 experience to the next level.

START FROM THE BOTTOM

The B4 is capable of awesome performance, but it can be crippled by poor hardware. The software's minimum system requirements are not lofty, but a cheap soundcard will hardly spotlight the B4's great audio. Even worse, inferior hardware can also lead to latency issues—hardly what anyone needs in a serious musical instrument. The bottom line? Solid hardware equals good sounds, and if latency is a problem, then the hardware's to blame.

SHORTCUTS

B4 isn't the kind of software in which you have to spend a lot of time navigating around, but there are a few shortcuts: Switching between the control and keyboard views is much faster by simply clicking anywhere on the top bar between the View menu and the B4 logo. And to find that sound you need in a hurry, scroll through the B4's presets quickly by right-clicking on the preset number and then moving the mouse up and down.

A SWELL IDEA

The B4 Control screen has a small fader for Swell, which does the job but hardly replaces the pedal action of a real B3. However, any MIDI pedal can do the trick: You can get the proper punch and feel of a real Swell pedal by assigning the pedal to

MIDI Continuous Controller #11 (Expression) rather than MIDI CC #7 (Volume).

ONE THING THAT'S MISSING

The B4's Leslie simulation is spot-on and not only gives multiparameter control access for the treble and bass rotors, but also "miking" spread, angle, pan and distance. If you're looking for the sound of the classic 2-speed Leslie 122 highboy, it's all here. It doesn't happen often—unless you do a lot of jazz—but every once in a while, what's needed is that good ol' single-speed sound. Fortunately on the B4, it's no sweat. Turn the low-speed parameter on the bass and treble rotors to minimum, and you're set in case Joey DeFrancesco drops by for a session.

AIN'T NOTHING LIKE THE REAL THING

Now that we've talked about how cool the B4's rotary simulation is, I gotta add that working with a real Leslie (or Motion Sound speaker) is a gas and opens up all kind of creative possibilities. This combination offers the best of all worlds: no hassles with tuning, aging electronics or the logistics of a real B3, while you can have convenient organ overdubs in the control room and send a line out to the studio, where a real miked cabinet adds just the right feel to the track.

Coming out of your (quality) soundcard or D/A converter, the first part of the fun begins: the preamp. This can range from a traditional Leslie Combo preamp to the new Speakeasy (www.speakeasyvintagemusic.com) Vintage Studio Platinum Series tube preamp (designed for B3 clones, as it models the original B3 A0-28 tube pre) or even a SansAmp guitar rack. I once got a monster sound driving a Leslie with a Hughes & Kettner Metal Shredder!

But once you get your sound, the (real) miking fun begins. Stereo. Left/Right. Up/Down. Even five mics for surround—things Mr. Leslie never dreamed of.



The B4's Keyboard view offers access to the most needed controls (drawbars, rotor on/off/slow/fast, vibrato, distortion, percussion) and more.

THE HARDWARE SIDE

Nearly any B4 function can be mapped to MIDI (such as the Swell pedal), and there are various USB mix controllers that have used the B4's popularity to squeeze control features into their design, such as faders that double as drawbars. A few of these include Tascam's USB-428, Event Electronic's EZbus and the Evolution UC-33Ce, where the latter even includes physical templates that fit over its sliders to transform the unit into a B4 controller. You might already own a B4 controller without realizing it!

Better still, check out Native Instrument's new B4D, a hardware controller with real drawbars, switches and faders—designed specifically for the B4.

B4 AND BEYOND

The B4 was fine enough when it came out, but Native Instruments couldn't leave it alone. It was followed up by an accessory "Vintage Collection," which, in addition to the pristine original B4, provided "alternate tonewheels" that re-created B3s in every stage of condition or disrepair—just the thing for cheap roadhouse music. This is now provided as part of the B4 package (as a bonus, it also includes another organ set with Vox, Farfisa and Indian harmonium organ sounds) and previous buyers can upgrade for a nominal fee. More recent are upgrades that add Mac OS X support and RTAS under Windows XP and OS X.

Visit www.native-instruments.com for more details. ■

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