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Of course, features such as mute, solo, pan, faders, and switches remain in hardware—just the way your fingers like. And there's also built-in mouse control, a smooth weighted jog wheel, as well as rock-solid transport controls. This multi-control approach lowers the learning curve to the point that most users can start working from the moment the Digital X Bus boots—without digging through the manual.



When equipped with the optional FireWire card, the Digital X Bus can stream digital audio between any Mac OS X Core Audio or Windows XP and ASIO compatible DAW software. FireWire has the bandwidth to allow recording/playback of audio and effect send/returns through a single connection. You can even load up your laptop with plug-ins and use it as a virtual effects rack.

Speaking of plug-ins, the Digital X Bus is the only digital mixer in the world that runs Windows VST plug-ins internally. It supports many of the popular plug-ins from manufacturers such as Waves, Universal Audio, IK Multimedia, and Antares, plus a bunch more—and the plug-in windows are displayed right on the Digital X Bus' built-in screens.

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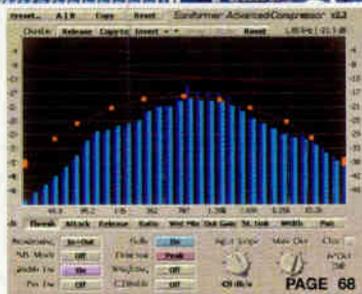
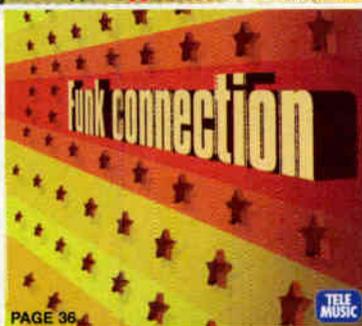
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MIX

PROFESSIONAL AUDIO AND MUSIC PRODUCTION

April 2005, VOLUME 29, NUMBER 5



features

30 Multichannel Mixing for HDTV

This past year has seen a surge in high-definition programming from cable and major networks—spurred on by consumer purchases of HD, digital-ready receivers. As such, TV mixing engineers are increasingly using film-style mixing techniques for 5.1 broadcast—while maintaining tight broadcast schedules.

36 Production Music Libraries 2005

Last year, production music libraries were embracing the Internet as a means of distribution. Today, these companies have expanded their online coverage, while continuing with new and old deliverable mediums to satisfy customers' demands. Whether delivered on CD, DVD, custom hard drives or even iPods, high-quality production music libraries continue to flood this niche market.

44 The New Perforated Screens

Independent acoustician Bob Hodas has tuned numerous post-production rooms, as well as high-end home theaters. Many of these larger rooms require cinema-style installation, placing speakers behind the screen. This begs the question of what is the best screen to use? Hodas offers his research results on selecting a projection screen that leaves minimal impact on audio quality.

50 Fox Television

NASCAR, MLB, NFL—Name just about any televised sporting event, and Fox Sports is often the mastermind behind the audio. Equipped with a bevy of multitalented engineers, SSL C200 digital consoles and other high-end gear, this complex produces hundreds of program and sports promos each week, handling music editing, voice-overs, sound design to full-on production.

68 Dynamics Processor Plug-Ins

If your work involves recording, broadcasting or computer multimedia, chances are, compressors, limiters and other dynamics processors are in your audio toolkit. Offering many features to streamline your work, dynamics processing plug-ins are giving users more ways to shape and control audio to fit into any type of production.

On the Cover: Fox Television, Los Angeles, has installed six SSL C200 digital consoles throughout the Fox Networks Group facilities, to go with Fairlight DAWs and Westlake monitoring. For more, see page 50. **Photo:** Edward Colver. **Inset Photo:** Steve Jennings.



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Visit www.mixonline.com for bonus materials and audio clips for Los Super Seven, the Sony Oxford Reverb Plug-In and much more.

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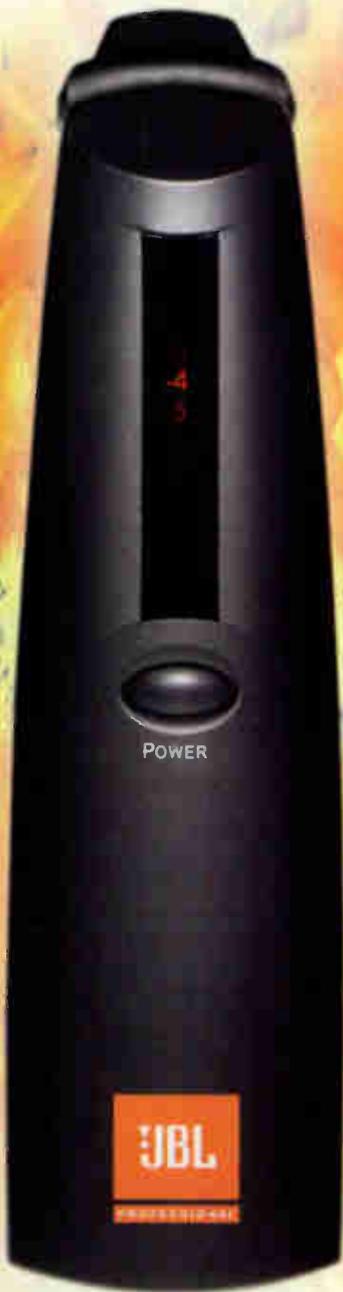


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What's Going On?

Lately, the pro audio community has been abuzz about the closing of key major recording studios across the country. In a matter of weeks, the news was out about the Hit Factory N.Y., Muscle Shoals, Cello and The Enterprise all reportedly closing their doors, and Royaltone being sold to Linda Perry for in-house production. Meanwhile, articles appearing in the mainstream press speculated on the end of the industry. Given the changes in technology, record companies and the economy in general, the business climate for commercial studios is hardly rosy, but before we call the undertaker, let's examine the situation.

Real estate is a major factor in the recording market. Studios in urban centers face enormous pressure from rising rents. In the early '90s, one of New York's most famous rooms, RCA Studio B, was closed despite a campaign to make it an historic landmark; the owner sold the building. As they say, "Location is everything," and in a rising market, a studio space's land value can far exceed its business value, as in the case of the Hit Factory. The effect is not limited to the U.S.: I'm sure EMI Records' accountants would love to put Abbey Road on the auction block as the facility is located in perhaps London's priciest real estate section.

Muscle Shoals is a different case. Its out-of-the-way locale that took advantage of the scenic beauty of rural Alabama, combined with the hottest rhythm section anywhere, attracted top bands worldwide in search of that "Muscle Shoals sound." But ever-smaller (or nonexistent) recording budgets and a move toward sampled sounds—rather than the real thing—eventually took their toll on this legendary facility.

Technology has brought new ways of working. *Mix's* film sound editor Larry Blake works on a Pro Tools rig in a small New Orleans studio mixing feature films, such as the recent *Ocean's 12*. Meanwhile, the film's director Steven Soderbergh has opted for the more personal ease of editing on Apple's Final Cut Pro. But the rise of personal studios doesn't mean the end of commercial facilities. Studios can prosper by serving niche markets: As one example, the audio industry in Vancouver has developed a steady stream of work in ADR and dubbing for English-language versions of Japanese anime releases—a market that's seen substantial growth.

In many ways, studios are no different than other businesses and subject to similar market conditions. When there are more studios (or Chinese restaurant/muffler shop/gas stations) than the population can support, a falling out is inevitable. This happened in Nashville a few years ago; perhaps this is what's happening now in other areas.

Like the closing of a grand movie palace, the loss of any studio is a sad event, particularly when the facility is filled with memories and histories of classic recordings. But if there is any upside to such events, it could be an increase in business for nearby facilities as clients look for new rooms in which to work. And with a finite number of client bookings available, hopefully the passing of one facility can improve the health of the remaining herd.

George Petersen
Editorial Director

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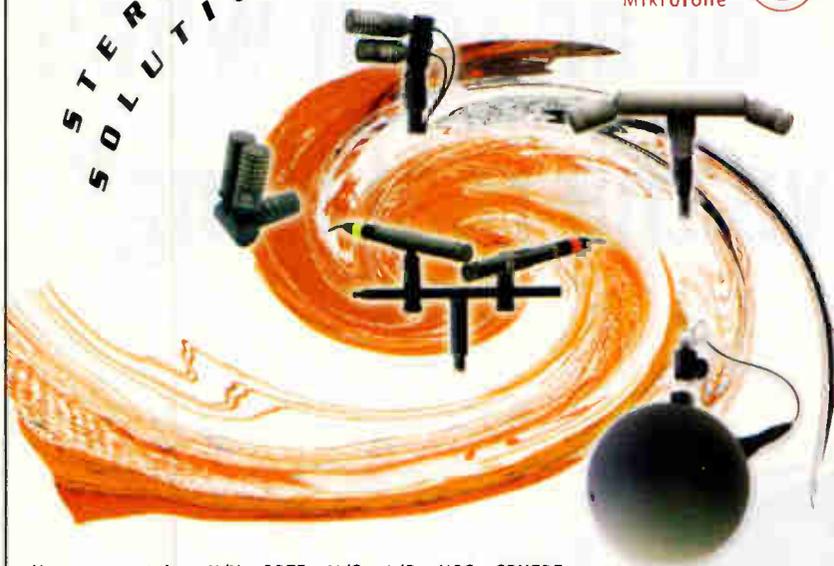
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Naturally, the DV-RA1000 is your logical choice for creating master DSD stereo tracks for Super Audio CDs.

But it has far more uses than that.

Live two-track recording. Because the DV-RA1000 records in real time at ultra-high sample rates, it's perfect for audio-ophile location recording. In DSD mode, frequency response exceeds 100kHz and dynamic range is 120dB.

Archiving. Storing all those old school 44.1 kHz masters? Get almost 5 hours per disk with the DV-RA1000.

Easy transfer to computer. The DV-RA1000 creates UDF discs, a standard format read by Mac®, Windows® and Linux computers. Or you can stream your data directly via the DV-RA1000's USB 2.0 port.

Mastering from any source. We have nothing against DAT and CD-RW recorders — TASCAM makes some of the best — but these formats simply cannot compare to the sonic quality of the DV-RA1000's 192 kHz/24-bit or DSD recording formats.

Get the details of this major recording advancement on our web site or visit your TASCAM dealer today.

| | | | |
|-----|-----------|--------|----------|
| DSD | 2.822 MHz | 1-bit | 109 min. |
| | 192 kHz | 24-bit | 66 min. |
| | 172.4 kHz | 24-bit | 66 min. |
| | 96 kHz | 24-bit | 72 min. |
| | 88.2 kHz | 24-bit | 133 min. |
| | 48 kHz | 24-bit | 267 min. |
| | 44.1 kHz | 24-bit | 290 min. |



- Up to 192kHz/24-bit recording
- Records to DVD+R/RW, CD-R/RW media*
- Multiband compression and 3-band EQ effects
- ±6% pitch control
- USB 2.0 port for use as DVD data drive
- Balanced AES/EBU I/O, running at normal, double-speed and double-wire formats
- Balanced XLR and unbalanced RCA I/O

- SDIF-3 DSD I/O for external conversion & DSD audio processing
- Word Sync in, Out, Thru
- RS-232C serial control
- PS/2 keyboard connector for title editing
- Records to standard CD-DA, Broadcast Wave & DSDIFF formats
- Headphone output
- Supports UDF disk format for cross platform computer compatibility
- Wired remote control

Wired remote control kit included.



TASCAM



* CD recording is at 44.1 kHz/16-bit (Red Book spec) only. The use of fatuous witticisms in our fine print has been temporarily suspended due to the Seriousness of this product. ©2005 TASCAM. All Rights Reserved. All specifications are subject to change without notice. All trademarks herein are the property of their respective holders.

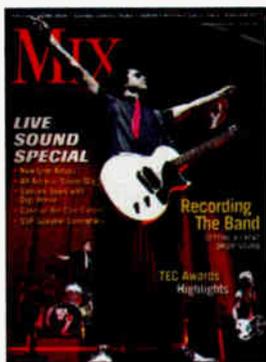
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DJ AND PRODUCER

PERSONAL CREATIVITY

Letters to Mix



STRAIGHT FACTS ABOUT CROSSROADS

Good article on Eric Clapton's "Crossroads [Guitar Festival]," January 2005]. I just wanted to note that Robert Johnson recorded the song "Crossroads" in a San Antonio motel room, not in Memphis. *Mix* is a great magazine. I look forward to each issue.

Kevin Ossenfort

DIGIDESIGN RESPONDS

We're extremely sorry to hear about Toby Gad's problems running Logic TDM with Pro Tools|HD hardware [as reported in the March 2005 "Feedback"]. We've been attempting to contact Toby to discuss his problems, but as of press time, we haven't been able to reach him. While we feel that Toby's problems aren't typical, we all know that's of little comfort when you're trying to complete an important project and meet deadlines!

I'm replying for Digidesign and can't speak directly for the Apple Logic team and the problems that occurred on the support side (Apple may have something to add), but, traditionally, we've worked tightly with the Logic folks to ensure that we mutually run our products through extensive testing. In fact, we require testing of the most recent versions of Logic before our major Pro Tools software or hardware releases, and everything is tested, from track count to automation to plug-in operation.

If and when users experience problems, Apple and Digidesign both provide a combination of Web resources, phone support and a knowledgeable dealer network to assist users. In Toby's case, we took a single support call from him regarding an error he received, gave him some things to try and did not hear from him after that. I wish we had heard from him later so we might have tried to help him through this.

Pro Tools|HD systems are in use in mission-critical applications that music creation pros depend on every day—including live tracking and large-

scale mixing. Working together, our products offer a powerful production environment that is not available elsewhere, with high-quality, large-scale I/O, low-latency, guaranteed high track count and world-class "power on demand" plug-ins, with no dropped samples, glitches or requirements for larger buffers. Users can access the power of host processing in combination with DSP power and can move smoothly and transparently between the "native" world and TDM.

Ultimately, Toby made a tough call that may work for him, but a lot of other working pros continue to draw on benefits and functionality they have experienced with Pro Tools|HD systems (whether with Logic or Pro Tools software as a front end). I personally care a lot about Toby's bad experience—we all do here—and hope that we can serve him again in the future.

*Sincerely,
Dave Lebot
General manager, Digidesign*

THE ACADEMY ROCKS THE VOTE

I read with interest [the February 4, 2005, issue of] "Blair's Blog" [a regular feature by senior editor Blair Jackson in MixLine, one of two bi-monthly online newsletters available from *Mix* at www.mixonline.com], and I think you should pass on to him that members of the Academy vote only in areas in which they feel they have some knowledge. Because there are only 12,000 members worldwide, we vote in only nine out of 40-plus areas. The record companies that produce many of the current nominations have many Academy members working for them and are naturally out in force voting for their artists.

As only Academy members can submit nominations, groups that want to be nominated have to have some relationship with a member. Until this year, we have not had a way of listening to the hundreds of nominations that are presented in the various categories. Members are not allowed to canvas other members to ask for their vote, so it often becomes a popularity contest. Most of us have never heard of many of the artists nominated.

In the final vote this year, the Academy and iTunes joined ranks to give members a way to hear the top picks up for a vote. I had written the Academy more than a year ago requesting that nominations should include a Web address where we can actually listen to who's doing what, and now it seems we're moving in that direction.

*Gary Smith
Gary Smith Productions
NARAS, BMI*

ARTIST VS. TECHNOLOGY

It's true that electronic equipment can take the place of learning instruments, at least for a while, but people still love a great song and a good singer. Alicia Keys and bands like Train play real music on real instruments, while the posers do their thing and the new beat poetry called rap/hip hop grows and evolves. Britune may think that there's no time left to make intelligent music, but that's not really so now, is it?

Wasn't it the Dixie Chicks who went Platinum several times over and had real songs and good looks, too? They had it together and it beats the mixers and posers hands-down.

James

WHO AM I?

I would like to comment on the March 2005 issue, in particular, to once again praise Stephen St.Croix ("Two Questions") and Paul Lehrman ("A Talk With John Chowning"), whose columns seemed obliquely aligned. Both made me question if the technology is really as much of an asset as it seems. While I make no claims to be a great engineer or producer, I always strive to improve.

When I started, my goal was to document a sound as accurately as I could. As time has passed, I have found that clients normally want the recorded sound to be better than the original. This is in direct conflict with the "garbage in, garbage out" mantra I learned as a youth. Now with the common practice of looping, virtual instruments and swapping samples for instruments, we seem farther removed from the source than ever. In essence, by the time we have the production CD, we are hearing a recording of the recording of the recording of the recording. That assumes the sample or virtual instrument is not a fifth-generation recording.

My point is I'm lost. What is our job these days? While I am all for the control and flexibility offered with DAWs, virtual instruments and convolution reverbs, if I have to construct or modify every performance, I am more of an editor than an engineer. I'd rather be invisible. I'd rather capture the sound of air moving in a room. Somehow, I have a sinking feeling that's not the future.

St.Croix and Lehrman's columns are always thought-provoking and engaging and the chief reason I subscribe. Keep up the great work! Thank you.

*Todd Zimmerman
Studio 139*

Send Feedback to *Mix*
mixeditorial@primediabusiness.com



CONSISTENT

Genelec, the benchmark in active reference monitoring, offers the most complete line of active reference monitors for professional audio, no matter what type of audio you are producing.

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Combined with Genelec's 7000 LSE™ Series subwoofers, accurate reference systems can be easily integrated into nearly any environment, whether you are working in stereo or surround.

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HISTORIC MUSCLE SHOALS STUDIO CLOSES ITS DOORS

Less than three weeks after Hit Factory announced it was closing its New York studio, another world-class facility steeped in recording history has closed. Muscle Shoals Sound Studios—the Alabama facility co-founded by Jimmy Johnson, David Hood, Barry Beckett and Roger Hawkins (original members of the Muscle Shoals Rhythm Section)—has welcomed numerous chart-topping artists, including the Rolling Stones, Aretha Franklin, Bob Dylan, Cher (who named her *3614 Jackson Highway* album after the studio's address), Bob Seger and so many more.

The facility has been owned by indie blues label Malaco Records since 1985. Malaco Records principal Wolf Stephenson told *Billboard* that he and his partners were more interested in acquiring Muscle Shoals Sound Publishing (a catalog that includes "Old Time Rock & Roll" and "Torn Between Two Lovers") than the recording studio. "The only reason we bought the studio was the banks we were dealing with wouldn't loan us the money on the publishing company," Stephenson said. "They didn't have any idea what it was. It was just a stack of papers to them." The two-room facility was used extensively by Malaco-backed artists, but the past four years, according to Stephenson, saw a sharp decline in outside projects. "When computer and hard disk recording really got cheap and better at the same time, it just knocked the socks off a lot of studios—Muscle Shoals included. It was just a very difficult thing to compete with."



Lynyrd Skynryd video shoot at Muscle Shoals Sound, circa 1998

DOLBY OFFERS IPO

On February 17, 2005, at the sound of the opening bell—done in surround, no less—Dolby Laboratories' stock made its financial debut on the New York Stock Exchange: 14,625,000 shares of Class-A common stock at \$18 a share. Of the total shares sold, 10.5 million shares have been sold by Dolby Laboratories and 17 million shares sold by Ray Dolby, founder and principal stockholder of Dolby Laboratories. Dolby Laboratories granted



Representatives of Dolby (including Ray Dolby, fifth from left) and from NYSE

an option to purchase up to an additional 4,125,000 shares at the initial public offering price within 30 days to cover over-allotments. Net proceeds to Dolby Labs was \$247,455,000.

Wanting to make an audible splash on the main trading floor, the opening bell rang in a dramatic, random surround sound pattern, while the closing bell was a special 5.1 remix created by Dolby engineers, which incorporated the traditional bell sound with added percussion and effects. Additionally, the television feed of the opening and closing bells was delivered to news stations with Dolby Pro Logic II audio.



Ray Dolby in front of the NYSE building on Dolby's opening day

LOUD BUYS ST. LOUIS MUSIC

Early last month, LOUD Technologies (www.loudtechinc.com) announced that it had acquired St. Louis Music, a Missouri-based manufacturer/distributor/importer of branded musical instruments and pro audio products. As part of the deal, St. Louis Music will become an indirect wholly owned subsidiary of LOUD Technologies.

"This acquisition demonstrates that Sun Capital Partners, our principal shareholder, is committed to the expansion of our portfolio into related markets," explained LOUD's CEO, Jamie Engen. St. Louis Music's CEO, Gene Kornblum, will remain in his current position. Commenting on the announcement, Kornblum said, "Through our mutual commitment to product design, creative marketing, and expansive sales and manufacturing resources, LOUD and St. Louis Music are going to make great contributions to the music industry."

NOT JUST "MUSIC" AWARDS

BY CHRIS WILSON/STAFF WRITER



Accepting on behalf of JBL Professional is Mark Terry (center), Neil Portnow (right) and music editor Daniel Carlin.

JBL, PHIL RAMONE TAKE HOME TECH GRAMMYS

The Recording Academy presented JBL Professional and Phil Ramone each with a Technical Grammy Award at a special ceremony held prior to the 47th Annual Grammy Awards on February 13, 2005.

According to The Recording Academy, "JBL has been pre-eminent in high-end loudspeaker technology for all facets of professional sound

since its formation in 1946. As broadcast, recording and motion pictures entered the stereo era in the early '50s, JBL was there with the world's first 4-inch voice-coil cone drivers and commercially available compression drivers. In recent years, JBL's introduction of VerTec™ line array systems has been heralded as the leading edge in array technology and system synthesis, and has been the sound reinforcement system of choice for the Grammy Awards shows."

A Technical Grammy Award was also awarded to Ramone, who has served as audio supervisor for many Grammy telecasts, including the Emmy Award-winning 5.1 broadcast of the 2003 Grammys. Acknowledged as one of the top creative producers, Ramone is equally respected as a technology leader. He has played an integral role in pioneering many of the advances in the art and science of music and film sound recording. As an early advocate of the CD, it was a Ramone production, Billy Joel's *52nd Street*, that was the first CD pressed. The first pop DVD release, *Dave Grusin Presents West Side Story*, is also a Ramone production. Ramone also helped pioneer emerging technology, including using an EDNet fiber-optics system to record tracks in real time from different locations. Ramone also picked up a Grammy for his work on *Genius Loves Company*, the Ray Charles duets project that won Album of the Year.

THAT'S ONE LONG CONSOLE

ALFRED HITCHCOCK THEATER INSTALLS HARRISON BOARD

A new Harrison MPC4D digital mixing console—with 320/640 inputs and 80 outputs and an integral 4,096x4,096 MADI router and a full complement of I/O—now graces the Alfred Hitchcock Theater (Universal Studios Post-Production Services, Los Angeles). The installation was completed this past September by the engineering staff and was headed by Jeff Taylor, chief engineer. Total installation was done in four weeks, with some pre-wiring done previously.

Digital signal processing is SHARC-based, and the console can be configured for two or three mix positions. Monitoring is provided by TFT graphic displays that show console setups, routing, channel information, panning, levels and waveforms in real time. All console

ON THE MOVE

Who: Joe Sanborn, president of Telefunken NA

Main Responsibilities: direction, budgeting and balancing financial responsibilities, as well as overseeing quality control/sound of our product and capsule research.

Previous Lives

- 2002, Telefunken NA director of operations
- early Telefunken days, ran studio and was in charge of testing/evaluating capsule development
- 2000, chief engineer/studio manager at Toni Fishman's Talcott Mountain Studios while Fishman developed Telefunken North America
- mid-'90s to 1999, opened Audio World Enterprises

The moment I knew I was in the right profession was...when my brother Ron had an 8-track home studio in a spare bedroom when I was just a teenager. We would work for hours making music, recording, mixing and just learning as we went along. Some people have the passion. What can I say? I even enjoy to wrap cables at the end of a session.

The last great book I read was...*The Complete Beatles Sessions EMI*. It chronicles every day The Beatles recorded from start to end, with stories, pictures and track sheets!

Currently in my CD changer...The Beatles' *Let it Be...Naked*, The Pixies' *Doolittle*, Brian Wilson's *Smile* and System of a Down's *System of a Down*.

When I'm not in the office, you can find me...Usually in the studio, making music, mixing or producing; playing guitar; or spending time with my son.



Chris Jenkins, senior VP of Sound Services (dialog and music) and re-recording mixer Frank Montano (effects mixer) are using the new console to mix *The Interpreter*.

functions are automated, including exclusive features known as "toys"—outboard devices such as camera filters and compressors that are created and automated using console DSP.

The console's layout, I/O configuration and functionality of the TFT displays was a collaboration between Harrison by GLW, and the studio's mixing and engineering staffs.

INDUSTRY NEWS

Management update at **Ex'pression College for Digital Arts** (Emeryville, CA): appointment of **Dr. Erik Stilling**, dean of academics; promotion of **Chris Coan** to COO; and **Ellis Gedney** to board of directors...**Russell Waite** is the new executive VP of worldwide sales for **Euphonix** (Palo Alto, CA)...**Studio City, Calif.'s Media City Sound** welcomed **Orville Grene Jr.** as VP of operations...**Jumping over from Ascent Media Creative Sound Services**, **Kim Waugh** is **Warner Bros. Studio Facilities'** (Burbank, CA) new VP, post-production services...**SLS Loudspeakers** (Springfield, MO) appointed **R. Steven Hicks** (chairman of Capstar Partners LLC) and **Dell Furano** (Signatures Network's CEO) to its board of directors...**Retaining his responsibilities as director of Neumann and distributed brands**, **Jeff Alexander** has been promoted to VP

sales, professional products for **Sennheiser U.S.A.** (Old Lyme, CT)...**HME** (San Diego, CA) appointed **John Kowalski** as pro audio sales manager...



Joe Schenk III

Joe Schenk III

rejoined **PRG** (Las Vegas) as director of its labor services division, **Showpay...** **New hires at Meyer Sound** (Berkeley, CA): **Gary Parks**, technical writer in customer service department, and **Steve Bush**, senior technical support representative...**New distribution agreements:** **Smart AV** (Sydney) appointed **Klotz Digital** (Munich, Germany) to distribute its Elite Series Smart consoles in the Asia/Pacific region, including Australia; **Audio Processing Technology** (Tokyo) is the exclusive representative for **Holophone** (Ontario, Canada) in Japan; **Loud Technologies** (Woodinville, WA) named **Tropical Music Export Enterprises** (Miami) as distributor for EAW products in the Caribbean and Central American markets; and **Line 6** (Agoura Hills, CA) will distribute all **Propellerhead Software** (Stockholm, Sweden) products in the U.S.

TEC PROCEEDS AID HEARING AND SCHOLARSHIPS

The Mix Foundation for Excellence in Audio announced that \$45,000 in net proceeds of the 20th Annual Technical Excellence and Creativity Awards has been contributed to hearing organizations and audio education scholarships. The monies were distributed in addition to the \$22,000 donated from the TEC Awards Music and Sound Auction proceeds. Mix Foundation president Hillel Resner (left) and TEC Awards executive director Karen Dunn (right) presented a check to House Ear Institute's Marilee Potthoff (center). The money, representing more than half of the proceeds from the 20th Annual TEC Awards, will support



the efforts of the Sound Partners program of the House Ear Institute and H.E.A.R. (Hearing Education and Awareness for Rockers). The balance was donated to scholarships and student assistance programs of the AES Educational Foundation, SPARS, six existing endowment funds at colleges and universities and to three individual TEC Awards Scholarships—one of which was made possible by a \$1,000 gift from George Lucas, who was inducted into the TEC Awards Hall of Fame last year.

'LION KING' XMAS IN DESERT

PHOTO: CAROL CEFALU



Lion King touring cast members in the Conservatory's Studio A/D

Lion King's cast recently visited Arizona's Conservatory of Recording Arts & Sciences Gilbert location to lay down tracks for a cast Christmas CD. The collection will contain songs from each of the nine *Lion King* companies touring worldwide. The Conservatory's setup allowed the 18 cast members to be recorded in two studios simultaneously: one in stereo and the other in 5.1. Gear used for the recording included the Holophone, three BLUE Bottle mics and two Pearl ELM-C rectangular capsule microphones. "Our Shepherd Boy," written and produced by *Lion King* orchestra conductor Rick Snyder and co-produced by percussionist Eric McKain, was recorded to two synched Pro Tools|HD Accel rigs through Summit, SSL and OSA mic pre's.

"It's the first thing I plug in now.
I love it, it just sounds great."

Garret Lee a.k.a Jackknife Lee - Artist/Producer - U2,
Snow Patrol, Emilliam and others too many to mention.

"Focusrite have made it possible for me
to enjoy sounds I thought you could
only buy at auction in Southbeys."

Guy Sigsworth - Britney Spears, Bjork, Madonna, Julio Iglesias
and many more

"A creative palette; bold strokes,
vivid colours, pure... filth!"

Genzo Townsend - Graham Coxon, New Order,
Ordinary Boys, Kaiser Chiefs, Beastie Boys

"Great idea, sounds fantastic
and you can link several
together for 7... Perfect"
Simon Osborne - Sting

"What a great product
that not only sounds
great, but great value too."

David Harrop - Helloween, Iron Maiden

believe

"For someone who uses all
the vintage units... it's quite
simply fantastic."

Bobbi Grant - Moby Dick, Mx, Sighs

"You don't have to re-catch
a single cable to try
unlimited combinations?"
Chris Green - Three Fox Buddies

"The limited low frequency response
isn't compared to the original control"

Reynolds - Various Originals for Paul Young
and others

"The results are simply better &
that's all you need to know"

Various Originals for Paul Young
and others



Any mic pre and
compressor in history



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World Radio History

NOTES FROM THE NET

ONLINE AUDIO SALES JUMP UP

According to the IFPI (www.ifpi.org) Digital Music Report 2005, music fans downloaded more than 200 million tracks last year in the U.S. and Europe—up from 20 million in 2003—bringing in much-needed revenue to the record companies. Analyst Jupiter Research estimates that the digital music market in the U.S. is worth \$330 million in 2004 and is expected to double its value this year. Additionally, the report showed that the number of legal online sites has grown from 180 to 230 and the number of tracks available has doubled—totaling more than 1 million.

NEW SITE: LASVEGASPROAUDIO.COM

TransAudio Group has launched LasVegasProAudio.com, a conduit between busy pro audio professionals and boutique high-end equipment manufacturers. Offering select imported lines available exclusively in the U.S. through TransAudio



Group—including ATC, Erauner, SoundField and Daking—LasVegasProAudio.com offers immediate assistance to procuring gear without visiting retail outlets or calling a sales representative.

NEW SITE: MP3TUNES.COM

Unlike other online music services, MP3tunes.com (launched by former MP3.com CEO Michael Robertson) operates without any digital rights management protection and offers tracks in MP3 format so users can buy the 192k music on any digital music player or computer (Windows, Mac, Linux) and burn—Unlimited!—songs onto CDs. Offering more than 100,000 tracks at launch from indie labels and artists, tracks cost \$0.88 and albums are \$8.88; there are no minimum payments or monthly service plans.

TAKING TIME OUT FOR THE KIDS

Pyramid: The Institute for Advanced Digital Audio Training (S.F.) held its first class session with new instructor/engineer Frank Gryner (Rob Zombie, Crystal Method, Methods of Mayhem), who showed the students mixing and tracking techniques at Hibiki Studios (Mountain View, Calif.). Gryner recently flew up from L.A. with rap-metal band AWS to record a track for the band's upcoming *Peace of Mind* EP. "The recording session with Frank Gryner went great," said Greg Gordon, Pyramid founder/president. "Having a high-caliber engineer and producer and AWS at the studio was perfect for the students. They really got a lesson in the real world of making a record."



Frank Gryner shows Pyramid students how it's done

UMASS LOWELL OFFERS MASTER'S OF MUSIC DEGREE



The Master of Music in Sound Recording Technology, a new program offered at University of Massachusetts Lowell, provides students with knowledge in current and experimental audio technologies, sound recording technology, production practice, and research practices and techniques. A "music program that uses technology as a vehicle for musical expression," according to the school, students can choose a technical or production path, specializing in the technical/research or artistic/production sides of the audio industry, respectively.

Students will receive hands-on studio time in the school's numerous rooms, including a critical listening and recording space, a 48-track control room, surround sound and DAW suite, sound synthesis and MIDI studio, video post studio, and a equipment maintenance and design lab.

BOOKSHELF

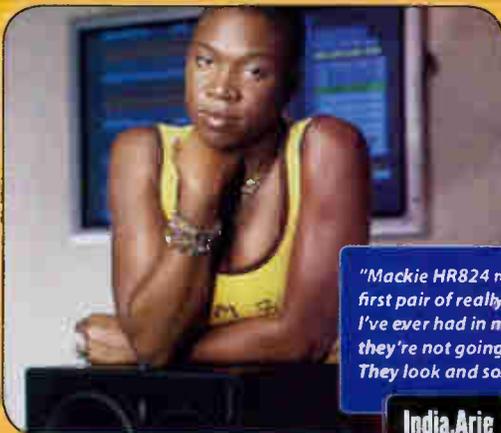
Gotta Get Signed: How to Become a Hip Hop Producer, by producer Sahpreem King (SWV, Wyclef Jean, Beenie Man, Eric Benet, Fat Joe), lays out a step-by-step process on learning the art and craft of hip hop production, beginning with a brief history of the genre and then explains what a producer and beat-maker does. Other topics include building your own studio, assembling a production team and promoting your music. Schirmer Trade Books, \$14.95.



CORRECTIONS

In the "Yamaha Purchases Steinberg for \$28.5 Million" article ("Current," February 2005), Athan Billias' title was incorrect. He is the director of technology products for Yamaha's newly formed Music Production department.

Mix regrets the error.



"Mackie HR824 monitors are the first pair of really good speakers I've ever had in my studio and they're not going anywhere! They look and sound great!"

India.Arie



"I use HR824s in my home studio as my main go-to monitors, and 624's on the bus during our Projekt Revolution tour."

Mike Shinoda • Linkin Park



"My Mackie HR624 Studio Monitors sound gorgeous and don't take up too much space in my studio—they're perfect."

Justin Meldal Johnsen • Beck, Air, Inarobot



"We've got the HR824's in our project studio and we love their true sound. We would be lost without them."

MXPX



"Mackie HR824 near-fields are my audio reference to the real world. What else can I say?"

Ben Margulies • Mariah Carey, Lisa Lavie

"MACKIE MONITORS ARE MY REFERENCE TO THE REAL WORLD."

The artists pictured in this ad can afford just about any studio monitors they want. So we're proud they choose to use Mackie HR Series monitors in their home and project studios—day in and day out—without cash or coercion from us. If you're looking for professional studio monitors you can trust to tell the truth, visit your local Mackie dealer and ask for an HR Series demo. The real world awaits.



With Snake Oil Comes Scales

Double Your Pleasure, Double Your Fun

I have heard that in the late '60s and early '70s, there were those in the music industry who simply couldn't get enough lines. No matter how many lines they had, they wanted more. In fact, more was never enough. This pursuit more often became a lifestyle, a true obsession and finally an addiction. Millions spent, lives ruined.

What if there had been a machine into which they could have simply put whatever they had, and magically *twice* as much came out...Well, hell, I guess we would have had twice as many lives ruined for each dollar spent. This is exactly the type of economic efficiency that solidifies a country.

Yes, this is what they needed back then. A really good line doubler.

But alas, none were to be had, and so the dream unrealized, faded (and not to white).

THAT WAS THEN, THIS IS NOW

About a decade ago, very expensive line doublers that actually sort of worked appeared. Not magic, but very nice. But again, a sort of conceptual plateau was reached as pitiful few needed this technology.

But recently, digital display panels, technologies with actual hard pixels, have begun to appear *everywhere*. Plasmas, LCDs and DLPs at tweak shops, Best Buy, 7-11 and online for 40 percent off. Every native resolution you can think of.

And line doubling is actually obsolete. We need something much more exotic, more like magic...We need to hard-map all of these sources to all of these displays. We need really, really good scaling.

BRING IN THE SNAKES

I *hate* scaling. Everybody cheats—makes up stuff—because they have to. After all, the whole game is making fake stuff up that doesn't exist.

Gearboxing, sample rate conversion...Of course, this barbaric practice is totally unnecessary for music. It only exists there at all because a few sorely misguided souls perpetrated the absurd idea that 96 kHz would be a good place to start when making 44.1kHz CDs.

You don't have to change your sample rate if you buy bigger speakers, though the 96k lobby may say you do, but you do have to change your res when you get that big new plasma. The trouble with pixels. It's just one of those laws of nature, like snow's cold and nobody makes a reverb that sounds real.

LET THEM EAT DATA

Each and every one of us using electronic display

technology—other than those few remaining steam-powered CRTs—finds himself scaling. NTSC to 640x480, 600x800, 1024x768, 1,280. DTV, HDTV, the coming Super-Hyper-Mega-Def. Scaling is a sad fact of life. Apparently, we all voted that this insanity was okay, probably because our spirits were so crushed by 96kHz audio. Without the will to fight, it was done. It seems the eyes have it.

But recently, digital display panels, technologies with actual hard pixels, have begun to appear everywhere.

Plasmas, LCDs and DLPs at tweak shops, Best Buy, 7-11 and online for 40 percent off. Every native resolution you can think of.

Well, many eyes *have* had it—99 percent of all scaling looks like crap. And that means that most people today who have seen HDTV have never seen HDTV at all. Sure, they have seen higher res than analog or DTV, but when you do see a direct-mapped HD feed, you never forget it. It's just that it happens about once a month for those who really try.

And why is that? Well, what comes down the line is never the same res as whatever panel you are using to watch it, so someone, somewhere, is always scaling. Often, in fact, it has been scaled before it was sent, and your system does it again just to ensure that no scary sharp edges or confusing detail appear.

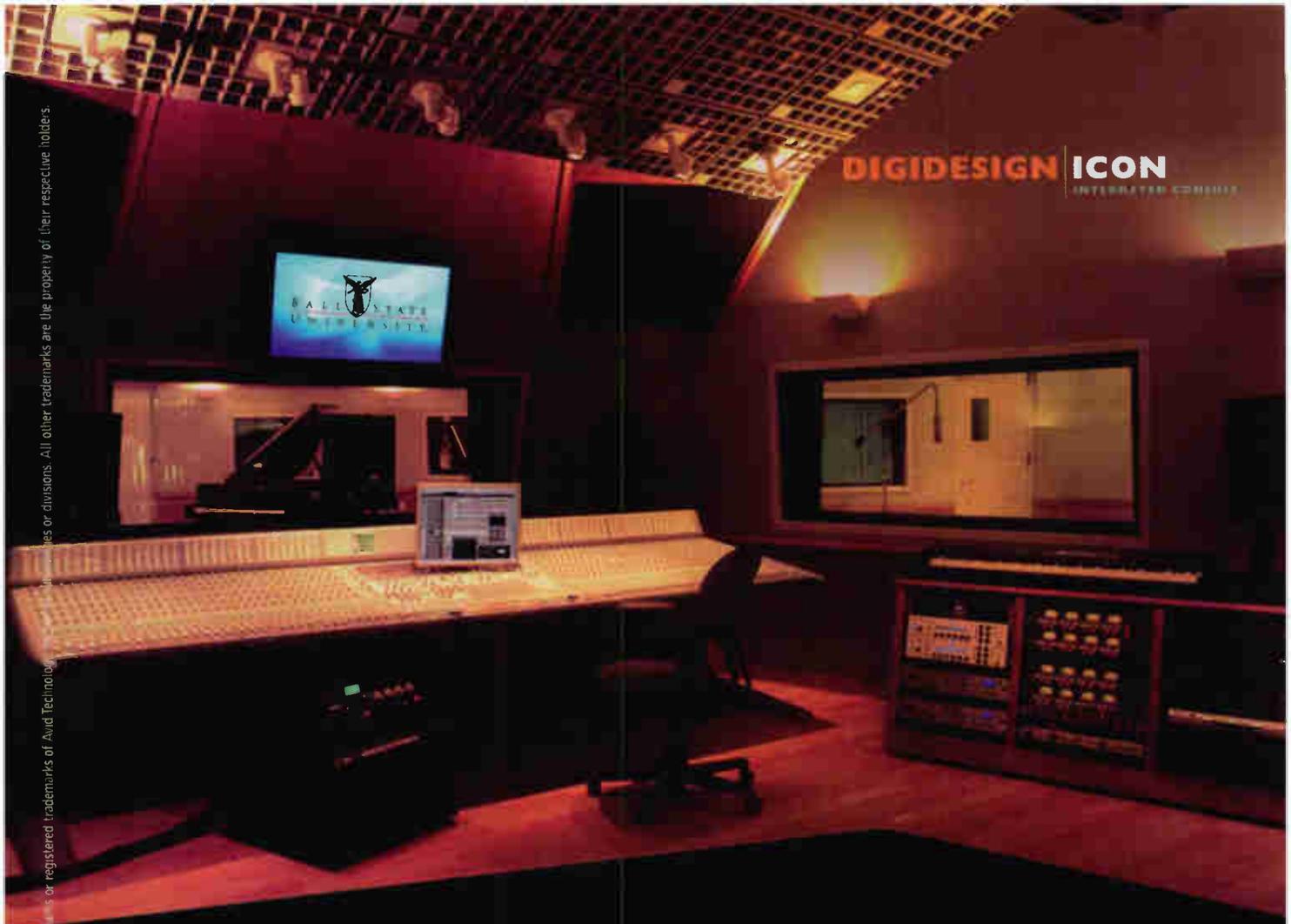
HOW TO TIP THE SCALES IN YOUR DIRECTION

Those of you who want the highest res from your plasmas, LCDs, DLPs and associated technologies should remember the Scaling Prime Directive: Never, and I mean *never*, let your display device do the scaling. While I have seen a Marantz DLP projector do some decidedly impressive scaling, I have never seen any direct-view panel do scaling that I would wish on anyone but my most hated enemy's retinas.

Let's examine our options. Rear projection is twice as good every year and now merely bites instead of being mortally offending. There are no direct-view

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DLPs, of course, so unless you want a projector, this wonderful technology is out of the running. It should be noted, however, that this is the technology that is pulling the quality of rear projection out of the mire.

LCDs are still stupidly expensive and limited to medium panel sizes. They can be impressive, but none are yet fast enough to display rapid motion without blurring. And plasma scaling options range from furry to blurry, from soft to sad.

What to do? Years ago, I reported my experiences with an impressive Faroudja scaler feeding a 50-inch Pioneer plasma. The plasma itself was extraordinary, but its scaling was pretty mushy. The Faroudja fixed that up rat good. The combination was so good that I have only been to a movie theater two times since I got this gear. That's twice in several years.

So why am I bringing all this up now? Well, there is a company in New York that told me over a year ago that they had a scaler that was so good that it could make a DVD look like HD. Yeah, right. I got one right away. And now, some 14 months later, I am prepared to reveal the *truth* about this thing.

**OIL OR SCALES?
THE COLD-BLOODED TRUTH**

Key Digital Systems makes a line of video products aimed at everything from good home systems to hardcore industrial

There is a company in
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a DVD look like HD.

Yeah, right.

installations. All I am writing about today is its scaling technology. Specifically, the company's HD Leeza, a switcher/scaler with some unusual abilities.

To get the best results possible from a DVD, you have to do the logical thing: Put your video signal through the absolute least amount of torture as it meanders

along its path to your display. To this end, Key Digital arranged for me to start with an SDI DVD player. If this means nothing to you, these machines have a BNC connector that outputs raw data directly from the reading laser. They don't scale, don't de-interlace, don't color correct, don't sharpen, don't *anything*.

And it turns out that the HD Leeza has an SDI input. You tell Leeza what your display panel's native resolution is and...and...all hell breaks loose.

IS IT REAL? OR IS IT A MEMORY HEX?

No question at all, this thing is doing unnatural magic within its processors and memory. I have never seen anything like this. To begin with, the outlandish claim of making DVDs look like HD is basically true! Let me establish some ground rules before I go on.

First, it must be understood again that very little HD out there actually delivers real, unique data for every pixel. On those rare occasions when you get a direct-mapped feed that does, it can often look more real than reality. No, really. Remember, unless you have better than 20/20 vision, a well-lighted, well-

—CONTINUED ON PAGE 149

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An Open Letter to the Head Apple

Re: What Have You Done to My OS?

Dear Steve: You know that I love the computers you make. I've been using them for almost 25 years, which is the longest I've been loyal to any brand of anything, with the possible exception of my toothpaste. The first one I owned was an Apple II, which was a joy and a revelation after all the time I spent programming with punch cards on IBM mainframes. And when the Mac came out, I bought one of the first ones, with the understanding that I could henceforth forget command-line interfaces forever.

I helped develop some of the first Mac music software and wrote for several of the early Macintosh magazines. I've owned about 15 Macs during the years, and built four college labs around Macs. Eight or so years ago, when the pundits were proclaiming Apple's imminent death, I stuck to my guns and told anyone who would listen to stay the course: We didn't have to jump like lemmings over to the dark side of Wintel. And I was right.

Today, Steve, my faith continues to be rewarded. The computers you're making are astonishingly capable, versatile and brilliantly designed—from the iBooks up to the dual 2-gig G5s—and they do everything I always wanted to do and much, much more.

But there's this thing you call OS X. Oh, I think it's pretty cool. Core Audio is great: I was getting really tired of trying to keep track of all those ASIO drivers and plugins folders for every device in every application. And I like the way you can bail out of a hung-up application without (usually) having to reboot the machine. The security features are really useful, and Safari is so much faster, cleaner and generally less of a pain in the butt than Internet Explorer that I haven't even bothered to put IE on my new machine.

But it took me a while to warm to OS X. Part of that is just the way I am. Far from being the passionate first adopter I was in Mac's early days, these days, I tend to lag well behind the bleeding edge when it comes to bringing new software into my life. Not having my work disrupted is more important to me than being the first on my block to have the newest cool toy.

And part of it was you: As I wrote in this space just about two years ago, OS X took a while before it was ready for prime time in the audio and music arenas. So I didn't install it in my home studio and school labs until just last summer. That doesn't make me the last to arrive at the party, but it does show you how cautious I've been. And I'm glad I waited.

And yet, there are things about OS X as it stands today—whether you call it Panther, Jaguar, Hyena, Hippopotamus or whatever—that drive me absolutely nuts. I don't mean they're irritating: I mean they make me want to throw my computer out of a third-story window, which

is a feeling I've had before about some equipment, but never my Macs. Oddly enough, some of these are things I thought we managed to leave behind years ago. And I know I'm not alone: Heck, my fellow *MacUser* alumnus John Rizzo just came out with a whole book called *Mac Annoyances*. (Have you read it, Steve?) So I thought I'd let you know about them. Maybe I'll be able to use them in my legal defense when I get busted for felony littering.

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SYSTEM UPDATES THAT CAN'T BE REVERSED

The G4 I use in my studio came with OS 10.0—something already on it, but I knew that its MIDI and audio support was pretty lame, so I never used it. I finally decided it was time to give OS X a fair trial when 10.3 came out. Trouble was, the installation took me three days. I found out later—much later—that there was a problem with some of the third-party RAM I had bought with the machine. It ran fine under OS 9, and it even ran fine under OS X, but when I tried to *update* OS X, the machine gave me all sorts of useless messages about missing Chinese Language utilities—and stalled. Okay, Steve, that's not your fault and there are warnings all over the Internet about using third-party (read: reasonably priced) memory, but how hard would it be to put some kind of error trapping in the installer routines that tells me what's *really* going on instead of blaming it on the Third World?

So I replaced the questionable RAM and now system updates don't stall, but I still dread them. Why? Because they still seem to take forever. The progress bar moves quite nicely for the first couple of minutes in the "installation" phase, but then the software insists on doing some inexplicable kind of "optimization" (it's not disk optimization, which your support docs claim is unnecessary under OS X, but they don't say what it *is*) and that typically takes half an hour, during which time, the progress bar does a fair imitation of the growth cycle of Astro turf.

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And another thing: For 20 years, the Mac was pretty much unique in the computer world in that if there was something you didn't like about a new operating system, you could trash it and go back to an older version. Oh, I know the practice stopped being "officially" supported a while ago, and as the OS got more complex, it became a pretty gnarly operation, but it always worked for me, right up to system 9.2.1. But now, I guess, the operating system has "matured," which means that I'm spewing tons of invisible, locked, weirdly named, artfully buried and otherwise inviolable files all over the disk whenever I do a system upgrade.

The result is that if I make a mistake and installed an OS that's too new for my applications (as I stupidly did when I installed 10.3.7 without checking Digidesign's compatibility pages to see if Pro Tools would cooperate with it, which at the time it most definitely would not), my only recourse is to wipe the hard disk and start all over. This means not only losing all my files (which presumably could be backed up), but also my software keys, registrations, preferences—in short, many hours of my life.

LET A MILLION LIBRARIES BLOOM

The proliferation of library directories in OS

X would make a pregnant sturgeon blush. There are libraries at the root level, libraries inside the system and libraries for each user account. There are ones for audio and ones for plug-ins and ones with different developers' names on them. How do we know what lives where? The answer: We don't! Not me, not the folks who write your support documents and, most dangerously, not the developers.

I'm told this is in the nature of UNIX. Well, guess what? I didn't buy a Mac to run UNIX and neither did 95 percent of the other Mac owners. And you know that, Steve: You've worked really hard to hide some of the more onerous aspects of UNIX behind all that groovy-looking Aqua stuff, so why couldn't you do something about this nonsense, too?

Here's an example: In a well-known audio program, there's a feature that lets you set up a whole bunch of different matrices containing multiple processing modules, and you can step from one matrix to the next as you move through a file. But in a recent version, if there was more than one user on the computer, using this feature crashed the program. Why? Apparently because the program would write the matrix settings to a library, which it then couldn't read because it didn't have permission. I sent several e-mails to the software

company about this, but that company's representatives couldn't figure out how to make it happen, so then I showed it to them at their AES booth—it took me three minutes. One of the company techs turned white and another later wrote me, "You have no idea how difficult all of the libraries make my job."

And how about patch names? Remember them, Steve? Some of us aren't just using the software instruments you throw in with GarageBand and Logic; we still have real hardware synths and samplers that we love. And we'd like to be able to see their patch names show up in our software the way we could ever since OMS first hit the streets. Don't get me wrong: As far as OMS and MOTU's barely functional PatchList Manager are concerned, I couldn't be happier that they're gone, if it weren't for the fact that now we have no way of doing this at all.

What we do have are a dozen or so libraries, where hundreds of factory patch lists that come from God-knows-where are stored in the form of XML documents. Now, you might think that because they're all in the same format, any application would be able to access them, but a lot of programs can't find them because they don't like where the documents are located or because the docu-

—CONTINUED ON PAGE 147

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Multichannel Mixing

Engineers Adopt Film-Style Techniques
Under Tight Broadcast Schedules



Advantage Audio's Melissa Ellis and Fil Brown at the Studer Vista 7, which is linked to Pro Tools and RADAR 24

FOR

HD Television

As we move precipitously closer to the FCC's mandate for broadcasters to complete the transition from analog to digital TV—currently set for late 2006—there is no denying that SD and HD are taking on an increasing importance in the minds of consumers and professionals alike. Sales of high-definition, digital-ready TV receivers and monitors continue to climb (according to *The New York Times*, more than a million DTV sets were sold in October 2004), while mixing for a 5.1-channel broadcast is assuming a more routine definition.

While hi-def programming was kick-started primarily with sports and entertainment programming, in the past year, prime-time offerings—from cable and all major networks—have been flooding the airwaves, complete with discrete 5.1-channel Dolby Digital soundtracks, including those for *Alias*, *Desperate Housewives*, *George Lopez*, *CSI* (all iterations), *ER*, *Joey*, *Law and Order* (all iterations), *Medium*, *24*, *American Idol*, *Arrested Development* and NASCAR—and this is just a small sampling. NBC's *The Tonight Show With Jay Leno* has been in HDTV for a while, and HBO now releases most of its series specials in 5.1. The extra \$10 on the cable bill is beginning to seem almost worth it.

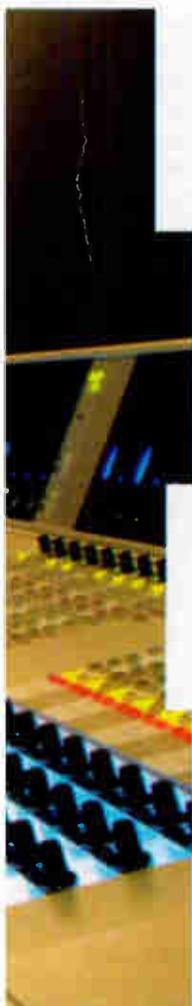
At Technicolor Hollywood, senior film/TV mixing engineer Andre Perreault handles 5.1 sound for a number of TV shows including *Judging Amy*, *Summerland* and *Father of the Pride*, as well as movies of the week. “The key to a good HDTV mix,” Perreault says, “is to use film-style techniques with no compromise. At the same time as I’m developing the 5.1-channel surround mix, I’m also

preparing a [matrix-encoded Lt/Rt] Dolby Surround for conventional 2-channel broadcast.”

Perreault's Stage 2 features an SSL Avanti Plus digital assignable console linked to Digidesign Pro Tools for playback and Fairlight MFX-3s for 24-bit recording of stems and finals. (Stages 1 and 3 at Technicolor Hollywood are similarly equipped.) “I always mix on the large monitors in surround,” the engineer continues, “and then use a normal TV with built-in [2-channel] speakers for playback with the producer. If there are changes, I can modify both mixes at the same time on the Avanti. Everything must sound good on the 2-track, but the 5.1-channel mix is also important for not only the HD broadcast, but also future DVD releases.”

One of the biggest hurdles to overcome, Perreault considers, is production dialog. “Because of tight schedules, the hard-working production mixers often cannot secure the best dialog tracks. The good crews are the ones that can do their best [under the circumstances] and get the best results.” Perreault uses a number of tools, including Dolby CAT cards and CEDAR units, but prefers well-recorded tracks. “Also, with all-digital systems, you have to watch out for sync problems. We prelay everything here in the room and monitor constantly for ticks and pops.”

Perreault generally mixes hourlong shows such as *Judging Amy* in two days, including prelay. “Day one, we load everything into Pro Tools from the server. Ken Burton, my effects mixer, has a 96-track Pro Tools while I use a 32-track system for dialog. After lunch we add the music, which arrives in a separate Pro Tools drive, and then build the mixes using 6-channel stems.



Dialog is in the center, with group walla in the surrounds and left and right, plus music spread across the soundfield and into the surrounds; effects are a full 5.1 mix. Within the Avant, I have built a submix for the 2-channel balance that follows gain changes made to the 5.1 mix.

"Day two, we go through final changes with the producers, and by lunchtime we have a final playback. Then in the afternoon, we complete the layback of DME stems and the final 5.1-channel print mastering to the MFX-3 recorder. Having digital picture speeds up the process dramatically, and since we automate everything, the final mixes can be played back from RAM."

THE ANIMATION ADVANTAGE

Advantage Audio (Burbank, Calif.) handles a wide cross-section of multichannel programming and has recently completed work on a number of animated series including *Kim Possible* for Walt Disney Television Animation. The facility's pair of identical stages house Studer Vista 7 digital consoles linked to Pro Tools playback and iZ Technologies RADAR 24 systems for stem recording. "Stage A is where Melissa Ellis and Fil Brown handle mixing multiple versions of the [*Kim Possible*] project," points out Advantage Audio co-owner Bill Koepnick. In addition to discrete 5.1-channel and Lt/Rt Dolby surround mixes for The Disney Channel and other outlets, Advantage needed to prepare home-video DVD releases of three episodes edited into a single 70-minute offering, plus a Dolby Surround mix for international release and use on ABC-Television, Disney's Family Channel and others.

"More and more shows are being

mixed in 5.1," Koepnick offers, "even if they are not yet being broadcast in that format. If you plan for it and have the elements, 5.1 doesn't take much more time to mix than stereo—the differences are mainly in print mastering. You need more time to generate the necessary elements and prepare stems, and final print mastering has more steps and takes far longer. We need to be more efficient and have sharper tools!

"The effects tracks [for *Kim Possible*] took around two weeks to build," recalls Koepnick, "including 4-channel backgrounds with diffuse ambiances for the surrounds. The DVD project took six days for the mix and a day for print mastering."

"Our room's quartet of Pro Tools systems," adds mixer Ellis, "played back 24 tracks of effects, as many as 24 tracks of music [prepared off-site by composer Adam Berry], up to 16 tracks of dialog and up to 16 tracks of Foley. Once we have the dialog elements balanced, I begin to work on the effects tracks while Fil [Brown] handles Foley and music." Effects are also prepared in Propellerhead Software's Reason and replayed from various samples. "It's an easy-to-use application," Koepnick considers, "and we can use ReWire to re-record the elements into Pro Tools."

A virtual mix is built in the Vista 7's console automation, with stems being recorded to the RADAR 24 along with a composite master. "We do an effects/Foley stem in 5.1, dialog in 5.0, music in 5.1—although there is not much in the LFE—and the complete mix to 5.1," continues Koepnick. "Having completed the 5.1 and Lt/Rt print mastering, we also lay off an M&E mix."

Regarding the facility's console choice, Koepnick says, "Of all the consoles out there, [the Vista 7] has the most efficient user interface. Our mixers like the knobs-on-glass, icon-based controls that let them see very quickly what a control is assigned to and what setting is being displayed. Speed is very important in today's high-pressure sessions: You cannot look for a control—it must be there and ready to go."



Larry Benjamin of Technicolor Burbank at the Digidesign ICON

MULTILINGUAL WARNER

One of the busiest mixers in TV post—in the hectic world of sitcoms, at least—is Charlie McDaniel, who helms an AMS Neve DFC digital console in Warner Bros.' Stage 8 on the Burbank, Calif., lot. Current shows include *Complete Savages*, *Less Than Perfect*, *That '70s Show*, *Yes, Dear*, *King of Queens*, *George Lopez*, *Half and Half*, *Center of the Universe*, *Joey* and *Wife and Kids*. In terms of complexity, McDaniel says that the WB's *George Lopez* presents some major audio challenges. "We mix a Spanish-language SAP channel for the show in addition to a full 5.1-channel mix," he explains, adding that it is mixed with backgrounds and Foley like a regular mix. "We need to reduce the dynamics for the 2-channel SAP mix and brighten the track to overcome the reduced bandwidth, which is handled using print mastering."

To streamline the SAP mixing process, the show's production company, SPG Studios, delivers Spanish-language dialog tracks via ISDN from a voice-over studio in Mexico. "Using a series of templates that I developed for the DFC console," McDaniel continues, "I can prepare stereo and Dolby Surround balances from the 5.1-channel stems." Edited sound effects, ADR, Foley and backgrounds arrive on Fairlight MFX-3 drives, with everything else on Pro Tools. Stems are recorded to a 20-track format, with final delivery of the 5.1 channel and stereo via Dolby E-encoded tracks on the video master.

"I use the surrounds sparingly," the engineer concedes. "I might place some music back there with backgrounds and some panned effects; I prefer to keep the audience primarily in the front. And for sitcoms, we use the boom [LFE] channel for music and not much else. One problem is that the audience mics [during the live videotaping] can pick up rumble from the soundstage and I need to make sure that the dialog can be held



Sitcom mixer Charlie McDaniel (Warner Bros.) developed templates on the AMS Neve DFC console to prep for George Lopez's incoming Spanish-language dialog tracks.

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above any low-frequency material.

"We mix the show in a day," McDaniel adds. "Assembling the elements onto our Pro Tools systems [assisted by his A2, Robert Bradford III] and getting a trial balance takes around four hours, depending on how complex the show is, and we spend an hour on the SAP mix. Then we printmaster the stereo and 5.1-channel mixes...and we're done!" The mixer says that the 40-channel/four-layer DFC Gemini saves a great deal of time, "because I can store EQ settings, for example, for different shows; each soundstage has its own 'quirks,' and so I developed curves that I can recall at the press of a button. Coming from an analog background, the learning curve [on the digital assignable console] was much less than I thought it would be."

CONTROL MEANS SPEED

With digital audio workstations offering mind-numbing processing power, a number of manufacturers have developed control surfaces for DAWs that enable all editing, processing and mixing functions to be handled within a fully integrated environment. Technicolor Burbank recently installed a dual-operator Digidesign ICON in Victory Stage A, where Larry Benjamin and Ross Davis mix *JAG* and *NCIS* in 5.1. "We have been using the ICON since July [2004]," Benjamin says, "and it is a great time-saver for us. We mix *JAG* in three days: half a day to assemble the elements and lay out the mix; one to two days to mix and handle fixes for the producers; and then the remainder of the third day to make final fixes and printmaster." Currently, the show is broadcast in Dolby Surround, but CBS

Television plans to offer it in 5.1 next year. Discrete multichannel mixes are prepared for possible DVD release and for forward compatibility.

"We access Pro Tools files directly within the machine room," Benjamin explains, "or via our FTP-based server; ADR arrives on CD-ROMs. We end up with eight tracks of dialog, eight of ADR, eight of Foley, eight of group, 16 of background effects and between 24 and 40 tracks of hard effects. Music is supplied as a 3-track/LCR orchestral score, plus individual sources for *JAG* and multiple tracks for *NCIS*."

"Mixing in the box [using ICON] means that all reverb, EQ and dynamics settings are stored with the project," he continues. "The only outboard I use is a Cedar DNS 1000 for cleaning up air conditioning and broadband noise. The ICON's [D-Control] surface acts like a regular console, and the combination of mixing and sound editorial is totally seamless. We use the [Pro Tools] editing functions all the time to move elements or to clear up dialog bumps, et cetera. If necessary, Ross [Davis] can also replace things like gun shots quickly using our effects libraries."

"[Such a system] changes your view on mixing," Benjamin concludes. "Full automation of everything is outstanding. We can accommodate picture changes [from AVID editors] using automated conform, which is very fast. We also use QuickTime Picture, which speeds up moving around a project. We can also run both console sections independently, which means that I can be making dialog EQ changes, for example, while [Ross] handles something else. It can be disturbing for the producers

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Hank Neuberger, left, and Terry Fryer at Third Wave Productions, Chicago

because it sometimes makes it hard to follow what we are doing. But we provide a play-by-play so they know [what we are doing at the console]. This approach of working offline was quickly embraced by the producers who immediately understood the benefits."

QUE UP QUALITY CONTROL

While post stages are capable of producing stunning multichannel mixes for a number of broadcast outlets, it is all too easy for these materials to be compromised before they reach their intended audience. In addition to post-producing 10 half-hour episodes of the hi-def *Fields of Glory* college football series for the new InHD Network with a full 5.1-channel soundtrack, Chicago's Third Wave Productions has also developed a very useful quality-control process. According to co-founders Terry Fryer and Hank Neuberger, it is all too easy to overlook format compatibility.

"For *Fields of Glory*, we need to provide a conventional stereo mix, a [matrix-encoded] Dolby Surround Lr/Rt mix and discrete 5.1-channel mix," Fryer explains. "To create a convincing surround environment, spaced mics are not very convincing. We use a 6-channel Holophone microphone to capture ambiances, locker room and crowd sounds. In addition to creating the sense of 'you are there' in our mixes, the Holophone is far more mono/stereo/surround-compatible than other transducers."

"But we also realized," Neuberger adds, "that we cannot mix and monitor in 5.1 channel and assume that the Dolby Pro Logic II surround and stereo mixes [derived from static downmix parameters] will sound okay. We always listen through the [Dolby] matrix to make sure that sounds panned to specific locations stay there through the Lr/Rt encode/decode process and do not disappear, for example, during mono summing or move from the hard center into left and right channels. To deliver fully compatible mixes, our SOP [standard operating procedure] has been to perform a comprehensive review in all three formats."

The HD-ready sets are now flooding the market, the delivery infrastructure is advancing every day and the networks have made the effort to get programs on the air, with the realization that quality 5.1 audio can improve the prime-time experience. And now that the DVD medium is moving toward hi-def, we can expect multichannel audio to be the norm, not the exception. ■

Mel Lambert is principal of Media&Marketing, a Los Angeles-based consulting service for the professional audio industry.



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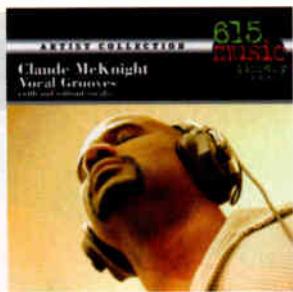


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By Sarah Benzuly

production music libraries

New Delivery Methods for When You Needed It Yesterday



Each year, *Mix* checks in with makers of production music libraries—those music collections designed to be used in just about everything audio: radio spots, Websites, commercials, Hollywood blockbusters, etc. And the market continually gets bigger, with more and more large-scale and boutique companies entering the field, bringing out piles of new releases each year. In such a noisy arena, the key to success is getting product into the user's hands.

That said, production music library companies are focusing on delivery—providing the easiest, quickest way for editors to search for a specific music bed to insert into their work, without stopping workflow. As the number of people with broadband connections has increased, more companies are offering music online, allowing users to quickly search, audition and download specific tracks—and whole libraries—in high-resolution formats. In fact, a recent survey of top music supervisors done by Associated Production Music found that more than 93 percent of respondents either already are or plan to download and audition cues for use in film and television via the Net. 615 Music's Randy Wachtler also sees an increase in downloading activity (though more from blanket licenses than needle-drop) as it seems easier and safer. However, Wachtler says that "the pipes" are still not big enough to download full libraries.

Looking at how Napster has turned the music industry on its side, trepidation remains strong in this field: Many companies prefer not to put their libraries online due to issues surrounding file sharing and ensuring rights protection for the company's composers. For example, JRT Music's clients maintain their own databases or electronic delivery systems, and the company will send out CDs for the user to upload and then send back when finished. "Other clients still prefer the actual CDs, and we update all of our clients with new CDs for free," JRT's Catherine Bogin explains. "Yet another category of clients enjoy our free search services and like to swap CDs per project. DVD delivery is something that should be picking up steam. A lot of clients have expressed interest in this and we anticipate it will be popular because it allows the client to still have all of the music on-hand but in a much easier-to-manage package."

Sonic Implants' Jennifer Hruska adds that DVDs are becoming the most popular delivery mechanism as they can hold a large amount of data. "Even still, the size of the library is starting to push the limits of that [format]," Hruska says. "We are looking into the issues surrounding releasing on hard drives. The main issue for us is user support: We're not really in the business of providing PC hardware user support!"





Doug Perkins, VP of sales and marketing at mSoft, relates that back in December 2004, the company sent out more than 7,500 audio CDs on drives just to *update* its own customers. "I have found more and more libraries that do not currently even exist on CDs. They are delivered on DVDs, on iPods or hard drives with audio files and a searchable text database. This gives them the ability to just send the music a customer needs and none of what they don't need," he says. "I see this more with what we call 'boutique music houses,' which are usually a few composers that feed the trailer houses and other promo-based production houses with new music, fast—they can't wait for CDs to be pressed or artwork to be produced."

Megatrax's Ben Trust is also looking forward to hard drive delivery: "We're continually adapting to the user's needs because there is no one standard for delivery. We've found that the big studios and networks don't do as much downloading because they have firewalls, which puts limits on what they can download. So these companies prefer hard drives. But for the individual, they prefer to go online."

For companies delivering on hard drives, using a Web-based search engine or an included search tool keeps the client in their domain: For example, the "Killer Tracks" search engine won't find the "APM" tracks and vice versa—great for the company, not so great for the client. According to Markus Schmidt at Creative Network Design, "From a user's point of view, it is favorable to have *one* search engine that finds anything from music to sound effects to samples. To take advantage of Mac- and PC-compatible file-management systems like our NetMix, rich metadata for the music CDs is the key element. Music libraries provide us with metadata that we deliver with our CD-ripping software Riplit [Mac, PC]. The Riplit software creates cross-platform-compatible Broadcast .WAV files with embedded metadata. This embedded metadata is scanned by NetMix and becomes searchable in many different ways. In addition to searching and auditioning music tracks, the user can preview music in sync to picture and transfer complete tracks of pre-edited tracks directly into Pro Tools or Avid."

Dan Stein of Musicbox would like to see drive-based and online delivery be the norm, but cites technology incompatibilities, difficulty updating hard drives and networks not up to speed with DVD-ROMs as reasons why most users still prefer a CD. GMP Music has found much of the same results: clients preferring the portability and readability of CDs. "The need for us to begin distribution in other formats such as portable hard drives, DVDs and CD-ROMs has been negated by the built-in ability of nearly all professional editing software or operating systems to allow for audio extraction directly into the production," comments GMP's Gene Ort.

According to Martha Lonsdale at Westar Music, most users still prefer to have a physical CD or DVD in their

hands. "One of the reasons that hard goods are still necessary is that not all production facilities have Internet access in their studios. In the highly competitive production music market, the client is king and any delivery method must take into consideration the physical requirements of your client base." Megatrax's Trust agrees: "It is all a function of the end-user. CDs will continue because of their human element for searching, looking at the covers and reading." Videohelper's Joe Saba also sees CDs sticking around for a while, as most companies keep their video editing software disconnected from the Internet so that they don't contract viruses. "We've seen fewer requests for hard drives than expected because updating is a problem; it's a giant FireWire mess if the company has lots of libraries and they can use iTunes instead. We're format-agnostic: We'll give the customer whatever format they want."

Whether on CD, DVD, hard drive, MP3, iPod or any other storage medium, production music library companies are still shuffling a massive amount of material every year. Here's what's new from these libraries since last April; companies are listed in alphabetical order.

New libraries from 615 Music (www.615music.com) are Dramatic Drones & Beds, Groove Generation, Hip Hop Drops, R&B Vocal Groove (featuring Take 6's Claude McKnight), and *Electro Culture* and *Jazz Now* from Music Shop. In addition to search and download functions on its site, the company also offers Flash drives that are 2 gigs and 2 inches long—about the size of a small Bic lighter.

Relying on the talents of its record label, Amusicom Records & Production Music's (www.amusicom.com) quarterly release schedule brings out 12 new CDs expected to hit the market this year. Headlines is a series of CDs for use in news, sports, promo, advertising, trailers, action, entertainment or magazine shows, featuring urgent grooves and dynamic orchestral pieces to heighten a sense of drama. Bass 'n' Beats highlights the low-frequency beats of modern hip hop and electronica. Users can receive the releases in a number of ways: Production Catalogs ("P-Cats"), which are specially designed cases from Case Logic that hold CD/booklets for the entire library; custom-formatted 250GB drives; and online, where users can download tracks from Amusicom's distributor, Megatrax, in a variety of file types.

Releasing 126 CDs for 15 different libraries in the past six months—including titles for its Ded Good, KPM, Salib, Selected Sound and Siren Cues—APM's (www.apmmusic.com) library can be accessed online via MyAPM, a searchable music-management portal where users can specify between download options or physical delivery (CD, USB hard drive, FireWire hard drive). There, users



can search for Lo Editions (part of the Bruton collection), which comprises six CDs of ultramodern electronica. A new CD from KPM's Bad Ass collection, Rock Candy has 61 tracks with alternate mixes. Also new are collections in world music (North and South India, Persia, Iran, Sudan and Yemen), Sonoton Trailer Tracks, Romantic Comedy and Back End 2.

All CSS Music libraries can be purchased at the company's twin sites—www.cssmusic.com and www.dawnmusic.com—via UltraEdit, the company's search and retrieval system on a handheld FireWire or USB hard drive, which comes with two onboard search systems. Users can also purchase CDs or in the company's Q-Tunes CD-ROM format as MP4s, which are usually priced less than half that of a comparable physical CD. New releases include Target Trax Vol. 42 "Urban Rock," MAX TRAX Vol. 45 "Dramatic," Super Themes Vol. 50 to 54, Project Platinum Vol. 13 "Quirky Music for" and V-Trax Vol. 3 "Winterscapes."

New releases at De Wolfe Music Library (www.dewolfemusic.com) include Beats and Rhymes, a hip hop, producer-created library featuring MCs Butta Verses, Kurious and Black Attack, among other hip hop artists; Latin Dramatic Film Score; American Heartlands; an international collection; and Fantasy & Magic CD, the company's new offering for video games. Each offering can be delivered with the company's new fully searchable Harmony Music hard drive (Mac, PC). This 500-gig LaCie drive provides access to the entire library using multiple search criteria, and users can import music directly into numerous programs, including AVID, Final Cut Pro, Pro Tools, iTunes, etc. Harmony is updated quarterly with a self-installing DVD-ROM of all new releases in Broadcast .WAV format. Users can also take advantage of the company's online search engine; downloading capability is coming soon.

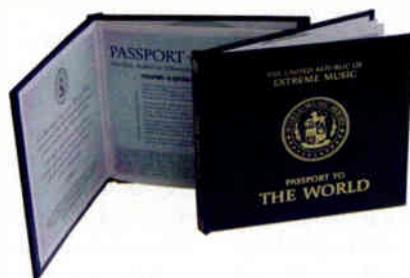
New from Extreme Music (www.extrememusic.com): The Passport Series (a world music series featuring Tashi Lhunpo Monks, El Tanbura, Farida and the Iraqi Maqam Ensemble & Joji Hirota) and The White Label (featuring top names in dance music including John Digweed and Sasha's Maven). The entire X-Series and Royal Philharmonic Classical and Opera collections are available on DVD, Porsche hard drives or downloads from the site.

FirstCom (www.firstcom.com) has added online services and more than 100 CDs since last April, including catalogs Evo, SXS Series and Noise Pump Music

(from the UK). MusiQuick Local, a FireWire custom-loaded hard drive solution, delivers music in .AIFF, MP3 or .WAV files; drives are accessed via AppleShare and supports OS 9/X. Coming this summer: MusiQuick Server, an upgrade on MusiQuick Local. Online, users can audition and download.

New collections available for download (.AIFF, .WAV, MP3) from Fresh Music's Website, www.freshmusic.com, are Acoustic Guitar Moods 1 and 2, Extreme Corporate, Jam Band, Back Road Country, Solo Piano Moods 1 and 2, Headbanger Sports (think X-Games), Party Gras, Geo Political, Fresh X and Open Spaces.

Gene Michael Productions Music (www.gmpmusic.com) offers a variety of music delivery options, including Red



Book audio CDs and custom CD-Rs, while focusing on full-length/high-res online audition/delivery in MP3, .AIFF and .WAV formats. New releases include The Latin Experience, a collection of horns, drums and keyboards; Drum Works, solo drum licks in a wide variety of styles; Swing Time, reliving the sounds of jivin' '30s and '40s big band; Survivor (think the show sans cameras); Next Generation (acoustic/industrial/soft rock); Crash Test (heavy metal/sports rock); Not Quite Real, a quirky collection of techno, acid jazz and ambient; and A Moment In Time—for all you romantics out there.

Groove Addicts (www.grooveaddicts.com) recently added two libraries: They are distributing UK-based Audio Network (you may have heard its work on the *SpongeBob: Squarepants* movie) and Liftmusic, a new contemporary label comprising the work of more than 30 writers. An enhanced online client music project area allows users to save searches by project name, archive them online and e-mail them to associates. Groove Addicts will launch a high-end composer scoring series—Full Tilt, offerings 5.1 stylized tracks—this spring.

JRT Music (www.jrtmusic.com), which represents and is owned by France-based Tele Music, adds 11 libraries to its catalog,

with many of them written/produced in France. Street Beatz focuses on hip hop and rap themes (written/produced in the U.S.); Adrenaline Addict, a collection of intense driving rock tracks; Indie Pop (written and produced in the company's UK office); Electro Pop; Roots, Dancehall, Ragga; Funk Connection; Electro Beats, where electroclash meets big beat; Movie Magic; XXL Jingle Vols. 1 and 2; and Blue Funk. Online, users can search and listen, but cannot currently purchase music; JRT is currently involved in a business partnership with sounddogs.com (which offers download services) for its entire catalog. For tight production schedules, the company provides music via FTP, e-mail or traditional shipping. Due to client requests, JRT expects to release a three-DVD set of its entire collection.

Since last NAB, Killer Tracks (www.killertracks.com), a division of BMG Production Music, has released more than 60 new CDs, ranging from Timewarp, Dark Zone, Sports, Speedway Mullet, Backpackers Delight, Brazilia and much more. This year, the company will unveil Zero to Sixty, composed and produced by Badass Music and featuring youth-oriented titles such as Massive Action, Electro Soul and Teen Machine. In addition to receiving CDs, users can audition and download music (.WAV, MP3, .AIFF) from BMGMusicSearch.com; a revamped KillerTracks.com, coming soon, will streamline this process. Hard drive delivery is optional.

Manhattan Production Music (www.mpmmusic.com) has been promoting its Live Trax Music Collection, which features live instruments and musicians, many of whom contribute lyrics. Live Trax also includes orchestral music with scoring stage and symphony hall mixes. The company reached its "100 disc" milestone with Dark Orchestral Volume II, part of its Apple Trax library. All offerings are engineered and mastered using Sonic Solutions by the Grammy Award-winning team at Chesky Records. While seeing heavy CD usage, the company offers clients the ability to download in .WAV and .AIFF formats; Manhattan Production Music has also been added to the mSoft server system.

Adding to Megatrax's (www.megatrax.com) 160-plus CD library are Sensación and Indie Rock. Composed/arranged/produced by Jorge Calandrelli and Byron Brizuela, Sensación is a six-CD collection of Latin hip hop and pop/dance tracks, including salsas, meringues, mambos and other tropical styles. Artist-driven Indie

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Rock, produced by Pinch (drummer of The Damned), features other punk artists, including Steve Soto (The Adolescents), bassist Warren Renfrow (Manic Hispanic) and vocalist Sean Wheeler (Throwrag). Megatrax offers its MusicSource for searching online, and the company is part of Play Music Finder, a European system where clients can download in numerous formats. Hard drives large enough to hold the company's entire library and updates are also available.

New from Metro Music (www.metro-music.com) are Dancehouse, offering four-on-the-floor tracks; Challenge II, light dramatic narrative stories in a film sense; Light Fashion & Retail, mixing smooth jazz and light radio; Tense Teases (drama promos and danger cues); Prime Time Party (party music from the '60s through the '90s); and Cool Jazz. Need something that has the feel of a '60s TV show? Search online with the company's Music Source for new release Lounge & Kitsch '62. Like what you hear? Contact the company by phone or e-mail with credit card information and Metro Music will send you a link to its FTP site for .AIFF download.

New from Music Bakery (www.musicbakery.com) are categorized thematic CDs. In addition to its self-named library, Music Bakery also offers StudioCutz, MediaTone (new release is Ultimate Drums & Bass) and WinkMusic (new release is World Sounds Collection). Music Bakery's Auto-Ship program allows users to receive a discount on every new CD (\$59 each as opposed to \$99), which is delivered automatically each month. Online, users can search and download tracks as MP3, .AIFF and .WAV files.

MusicBox (www.musicboxmx.com), a partner with mSoft, released a new series of CDs, CINEMATIC, with the first offering titled Action Adventure. The series comprises music associated with the silver screen, providing a blend of modern orchestral music with cutting-edge musical styles. Action Adventure offers 10 themes with various mixes and edits per theme. Also new is a 1,000-track/20-hour library titled CUE—the company's 100th CD release. An online delivery system is in the works.

Network Music (www.networkmusic.com), a division of BMG Entertainment, offers a number of new titles, including a VBM library (which spans funk, jazz

and kitsch to suspense, country and aggression); SLAM!, geared toward radio programmers; and Essential Series, offering multiple genres and the "corporate sound of Wall Street." Also new are ShortTrax, which comprises 7,000 tracks for unique spots, promos and jingles; and Classical, which brings the classical compositions of Bach, Beethoven, Handel, Mozart, Schubert, Tchaikovsky and more straight to the user's sound palette. New in Network's library are Animation Station, Air Guitar, Energizer and Human Drama.

Non-Stop Music Library (www.nonstopmusic.com) is now offering its music on external FireWire hard drives.



Users can house their 700-plus discs on their own servers or a supplied 8x6x1.5-inch hard drive; a connection to an internal server will provide all of that facility's editors access to .AIFF, .WAV or high-resolution MP3 files. Clients can also pull their files into iTunes. For those who still prefer the CD format, Non-Stop has created the space-efficient Producer Series, a re-categorizing and reformatting of its traditional library. Non-Stop's newest releases include Acoustic Guitars 1-2, Attitude 6-7, Suspense 3, Adventure 3, Comedy/Humor 1-3, Corporate 1-3, Epic 1 and Kids/Cartoons 1, among many others. The company's sub-published libraries include Cavendish, Groovers, V, Countdown, Hastings Media Music, Point, TRX, Crashed and Mathambo Music.

Omnimusic (www.omnimusic.com), a 15-CD, 4,000-track music resource, offers seven new releases. I-Tech (from composer Bernd Schoenhart) delivers 14 main themes, five underscoring and 24 broadcast edits; Drama Cues II (from mysterious to chilling to heroic moods) includes 13 main themes, 15 underscoring and submixes, and 22 broadcast edits; and continuing in its line of holiday music, 'Tis the Season comprises 19 themes, four underscoring and 28 broadcast edits. Modern Thinking, penned by composers Erich Glaubitz and Mike Jewell, blends drum loops and synth sounds with virtuoso keyboards and guitar performances, while Nova Jazz lets the user sit back and chill out. Last in this list is Atlantis, full of 16 glistening fantasy themes—all of which can be demoed online in Quicktime, Flash and MP3 formats. Also offered are Omni Blue Dot, Flash-Point Music and CDM Library.



Production Garden Music (www.productiongarden.com) comprises 10 separate production music libraries, offering three types of CD volumes and libraries: Broadcast Production Music Libraries (Music Street, MSE, Series 100, Tune Ranch), Long-Form Theme Music Libraries (which offer additional mix versions and include Manchester, Metro, World Sounds and Series 200) and Production Elements and Work Parts, which feature short stings, sweeps, sparkles, etc., and comprise Air Assault, PowerDisc and Stinger Tracks.

Promusic (www.promusiclibrary.com) has added roughly 100 CDs this year, including Digital Vision, a contemporary library created by musicians who have worked with artists such as Björk, the Brand New Heavies, Jah Wobble and Bryan Ferry. Promusic offers numerous delivery methods, including downloading more than 14,000 tracks in .WAV or .AIFF formats from the site. The company also offers hard drives with MP3 files, where clients can "dump" files onto a local drive or keep the drive locally connected for instant access to tracks. The Promusic libraries are also available on the mSoft server system.

RCB Music Library's (www.rcbmusiclibrary.com) two offerings—VARIETY Vols. 1 and 2—are produced at sister music production company, Barclasion Music. According to owner Rick Barclay, one of the main necessities before launching the library was the Website. It was designed—and is in constant redesign—for members to access music, license forms and other miscellaneous information. New tracks are available online before being available on CD. A search engine is in place for video producers to find the needed track style.

Smartsound (www.smartsound.com) has just begun allowing users to download entire CDs via its site using its software, Sonicfire Pro. (Version 3, launched at last year's NAB show, allows users to download



single tracks.) SmartSound automatically generates soundtracks that fit any length needed through a patented technology: Smartsound employs four musicians who

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work as “blockers” on these new releases, where they listen to each track and decide which small musical segments within the piece work as independent modules. Music CDs are then encoded with information that tells the company’s software how to re-arrange a music track to fit into the length needed while being musically complete. The software can be used alongside other editing programs, allowing the user to continue working on video while auditioning audio tracks. New this year are Greatest Hits (released for Music Bakery and Sound Ideas), Romantic, Riveting, Breakbeat,

Headlines, Groovin’, Motivation, Driving, Bossa, Coffeehouse, Eurobeat and Progress. At NAB, Smartsound will announce an agreement to produce music CDs with the SmartSound encoding system for a major supplier of needle-drop libraries.

Sonic Implants Network (www.sonicimplants.com) now offers Symphonic Collection, comprising Ensemble Strings, Solo and Ensemble Brass, Solo and Ensemble Woodwinds and Orchestral Percussion—all now shipping. The release was recorded by Emmy Award-winning engineer Antonio Oliart and RIAA Award-winning engineer

John Bono at Sonic Temple Studios (now Futura Productions). Limited collections are available for download.

Chilled Electronica, Sopersound’s (www.sopersound.com) new offering, is straight from the London club scene and is packed with provocative downtempo dance and electronica styles. Eighteen full-length themes fill out the release—all of which can be downloaded online in .WAV and .AIFF formats. Need more themes? Continue searching via the company’s MusicSource Online tool and audition something that piques your interest.

Stephen Arnold (www.stephenarnoldmusic.com) is now offering a Sonic Branding News system, which comprises 19 varied music packages titled CounterPoint, Convergence, Elevation, Finale, Fusion, Metropolis, Horizon, News Edge, News Matrix, One World, Overture, Pinnacle, Signature, Stravinsky, Third Coast, Wall-to-Wall News and WWL News. This division specializes in creating audio signatures for a station or network. The company also announced two new musical packages: Extreme and U-Phonix. Each library includes 14 musical themes for high-octane news reports.

New from Valentino (www.tvmusic.com) is the 10-CD Millennium Series, which features volumes on techno, sports, action, drama, Latin pop, funk, classic rock, action/adventure and more. Not library-related, but pretty interesting: Valentino has opened its archives of music and sound effect audio clips for ringtones! Ready for licensing, all 300-plus CDs and 50,000 offline sound effects are ready for ringtones, gaming, photos or other A/V applications.

Videohelper’s (www.videohelper.com) ScoreHelper is chock full of cinematic soundtracks, ranging from huge Hollywood orchestral blockbusters to indie-label alt/folk to experimental sound design to reality TV. The library is now available for searching, auditioning and download at www.playvideohelper.com.

Since last April, Westar Music (www.westarmusic.com) has released 12 new CDs in seven categories, including titles in its Solo Instrument, Sports, Rock, Dance, Comedy/Cartoon, Country and Easy Listening libraries. All music is available for audition and download. ■

Sarah Benzuly is Mix’s senior associate editor.

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THE New Perforated Screens

How Do They Sound?

Lately, it seems I'm getting more calls to tune high-end home theaters. In my experience, most of these home clients care more about how the room looks than how it sounds, so speakers are usually hidden behind a perforated projection screen. Many of my post-production clients—such as Mi Casa Multimedia and Creative Group—use CRT, plasma or LCD video monitors. Others—such as GTN and Fantasy Films—use projection screens due to room size. The latter need to place their speakers using a conventional theater approach: behind the large screen.

In rooms with permanent screens, I generally have to insert some kind of high-frequency compensation curve due to losses from playing audio through the screen. Companies such as THX and Stewart Filmscreen build boxes that do this job in theaters. Rooms where the screen is stored in the ceiling and dropped in for a project require optional filter sets for tunings with—and without—the screen in front of the speakers. Unfortunately, with two curve options, engineers who don't pay attention can sometimes mix a project with the wrong curve engaged.

I don't recommend putting speakers behind a screen; I've never been happy with what traditional perforated screens do to a speaker's high-end response. Does "tissue paper" sound familiar? Not only do I not like how these screens affect sound, I certainly don't like the way they measure. However, due to the popularity of high-end home theater installations, a number of companies offer new alternatives that are said to provide improved audio performance over the standard perforated cinema screens. I'd like to share some of my research on the subject to help you select a screen with minimal impact on audio quality.

My test methodology was fairly simple. A Meyer HD-1 reference monitor was measured in the near-field, both on-axis and 30 degrees off-axis, with no screen in front of it. The same measurements were then made with each of the three screens hung in front and parallel to the speaker face. I measured each at a variety of speaker-to-screen distances, but only published charts for one distance of eight inches. This distance gave an optimal reading for all screens.

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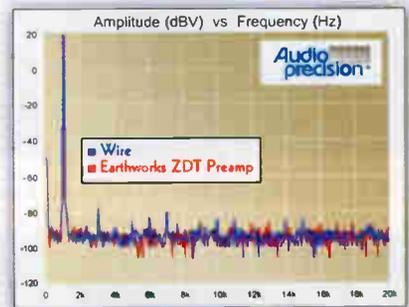
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THE New Perforated Screens

The screens tested were the Draper (www.draperinc.com) AT1200, Screen Research's (www.screenresearch.com) ClearPix2 and Stewart Filmscreen's (www.stewartfilm.com) MicroPerf. The

three screens differ dramatically in how they are manufactured and, hence, how they pass audio. The Draper and Screen Research screens use a woven material that allows sound to pass through the

weave. Stewart punches holes into the screen using a size and pattern that the company has determined to be the most acoustically transparent. The individual MicroPerf holes are about 0.5 millimeters in diameter, much smaller than the 1.2mm holes used in conventional perforated theater screens.

They say a picture is worth a thousand words; in this case, the charts speak quite clearly. So I will simply guide you through the process with the figures.

Figure 1 shows the on-axis impulse response of the HD-1 speaker with no screen in front of it. Amplitude is shown on the vertical scale and the timeline in the horizontal scale is ± 7 milliseconds. The initial impulse is at 0 ms because the propagation delay between the speaker and the microphone has been removed. So all reflection energy will show up to the right of the initial impulse.

Figure 2 shows the Stewart MicroPerf placed eight inches in front of the speaker. Note the initial impulse's reduced high-



Fig. 1: HD-1's on-axis impulse response, without screen



Fig. 2: HD-1's on-axis impulse response with Stewart MicroPerf

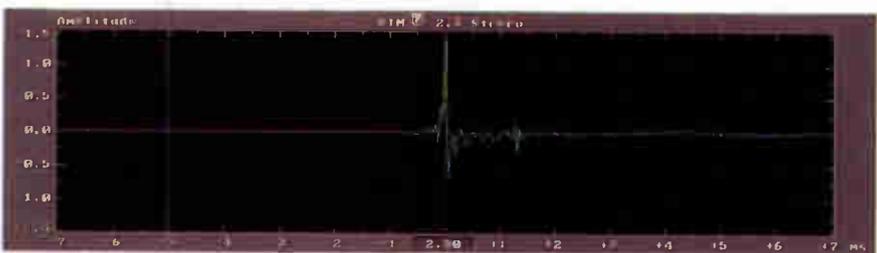


Fig. 3: HD-1's on-axis impulse response, with Draper AT1200A



Fig. 4: HD-1's on-axis impulse response, with Screen Research ClearPix2

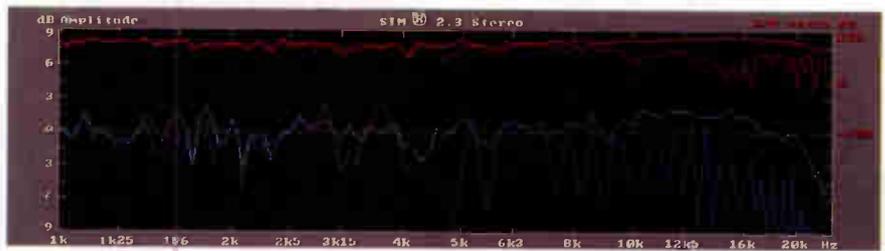


Fig. 5: Stewart MicroPerf vs. no screen (light blue), on-axis

Video Is Important, Too!

This article deals only with audio performance of screens and is not intended to address the subject of picture quality. I'm no expert on video, so I spoke with VGE (Video Guru Extraordinaire) Joe Kane about perforated screens. "Compared to a non-perforated screen, two big problems are loss of light and a loss in image resolution. A perforated screen will lose 10 to 20 percent of the light hitting it, which means that the screen has to be reduced in size by 10 to 20 percent to provide the same amount of reflected light as a solid screen," explains Kane. "In terms of image resolution, we did some WMV-HD versus MPEG-2 comparisons. On a solid screen, no one missed the differences between the two systems. On a perforated screen, no one could see the differences. Also, at specific throw distances, the fixed pixel pattern of a solid-state imager can beat with the perforated pattern on the screen."

The way that a screen is manufactured will affect the above problems to varying degrees, so readers will have to do more research to determine the ideal screen for their particular installation.

—Bob Hodas

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frequency energy and the significant reflection at about 1.2 ms. This reflection is caused by the sound bouncing off of the screen, back to the speaker face and through the screen again. Several lower-

energy reflections may be noted along the timeline, as this process is circular. While one solution to the recycling reflections would be to put an absorptive material on the front of the speaker (such as 1-inch

compressed Fiberglas), this could interfere with the tweeter dispersion and is not considered desirable by many speaker manufacturers.

Figure 3 shows the Draper AT1200 screen, also eight inches in front of the speaker. With this screen, the high-frequency energy is only somewhat reduced in the initial impulse. The reflection is also reduced (less than half of the energy of the Stewart) and there are no additional reflections along the timeline, an indication that the audio is less affected by the screen.

Figure 4 displays the Screen Research ClearPix2 hung eight inches in front of the HD-1. The initial impulse is only somewhat reduced with this screen and the reflected energy is the lowest (and the best) of the group. No additional reflections appear along the timeline.

Now let's examine how the reduced impulse energy and the reflections' size affect frequency response. All measurements are shown in 24th-octave resolution and the scale of the window is ± 9 dB. The response displayed is 1 kHz to 22 kHz because the majority of the differences occur in the higher frequencies. The two curves in each of the following figures directly compare the effects of each screen against the speaker without a screen. The light-blue trace represents the HD-1 with no screen. The dark-blue trace represents the effect of each individual screen. The two red traces at the top of the window show the coherence for each response trace. The traces indicate whether the mic "sees" what the computer actually generated, signifying that the signal has been degraded or changed in some way. This is an important factor for understanding dialog, as an example. As it's difficult to distinguish between the two shades of red, I will point out any significant problems. (The lower the line on the figure, the worse the coherence.) In the first comparison, we'll look at the on-axis response.

Figure 5 (page 46) is the Stewart MicroPerf. Starting at about 1.25 kHz, the response is affected by the screen, with a big hole appearing near 5 kHz. The high end drops off significantly after 7 kHz, and the effects of the reflections are indicated by very rough combing and a significant drop in coherence.

Figure 6 shows the Draper AT1200. Again, there is a rather noticeable hole around 5 kHz and then a general overall



Fig. 6: Draper AT1200 vs. no screen (light blue), on-axis



Fig. 7: Screen Research ClearPix 2 vs. no screen (light blue), on-axis



Fig. 8: Stewart MicroPerf vs. no screen (light blue), off-axis



Fig. 9: Draper ATi200 vs. no screen, off-axis



Fig. 10: Screen Research vs. no screen, off-axis

Time-Align[®] monitor systems

drop in high end starting around 8 kHz. Combing is not as severe as in Fig. 5. Coherence has also dropped slightly in this range. The response is a bit rougher due to the reflection indicated on the impulse response.

Figure 7 is the Screen Research ClearPix2. Here, there is little degradation of the original signal. There is some loss above 10 kHz and only a bit of roughness due to the mild reflection on the impulse response. Coherence exhibits a minor, almost insignificant, drop.

Now let's look at how these screens perform 30 degrees off-axis. This is an important measurement. As in the wider theater-style seating scenario, accurate coverage needs to be as wide as possible. Once again, we will compare the screens to the bare speaker.

Figure 8 overlays Stewart's MicroPerf with the HD-1. The loss above 4 kHz is significant and badly combed out, although it does follow the trend of the bare HD-1. Note: There is also some loss below 4 kHz.

Figure 9 shows the Draper AT1200. It follows the trend of the HD-1 fairly well. The losses are pronounced above 10 kHz but not badly combed. There is some loss between 3.15 and 4 kHz, and some significant dips in the 6kHz region.

Figure 10 demonstrates the Screen Research ClearPix2's ability to hit the trend of the bare speaker, even in an off-axis measurement. There is some roughness but very little loss. This screen performs exceptionally well off-axis.

My preference and continued advice is not to place speakers behind screens. However, practical working conditions necessitate that screens are, indeed, used. Judging strictly on the basis of audio quality, the Screen Research ClearPix2 is the best screen I have measured to date. It exhibits little on-axis loss and is outstanding off-axis. This screen could eliminate the need for those extreme screen-loss equalization curves (a practice that can push tweeter performance beyond its limits and negatively affect the phase response).

It also means that I may not need to do two tunings for rooms with roll-down screens. The ClearPix2 exhibits excellent coherence, as well, which should make the listening experience more accurate, musical and enjoyable. ■

Bob Hodas is an independent acoustician based in Berkeley, Calif.



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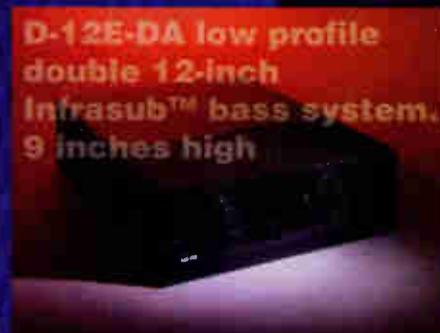
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World Radio History

Fox Networks Group

Digital Control Rooms for Fast-Paced Programming

Fox Television installed six 32-fader, 96 in-line channel Solid State Logic C200 digital production consoles to serve its on-air promotion and sports departments. Four of the consoles are used for on-air promotion, replacing the SSL Scenaria digital post-production mixing systems in use since 1992, and the remaining two C200 consoles are used for Fox Sports projects.

PHOTOS: EDWARD COLVER



World Radio History

M*arried With Children, The Simpsons, In Living Color, American Idol, The Shield, Nip/Tuck*—the Fox Television network long ago branded itself as the leader in edgy, exciting and attitude-laden primetime TV. It's as true in sports as it is in entertainment, where Fox Sports is the go-to station for MLB, the NFL, NASCAR and just about anything in between. These are the folks who put mics on the Green Monster in Fenway, revolutionized hockey and made NASCAR the Number One spectator sport in America.

Supporting all of this out of the Fox Entertainment Group's headquarters in the Century City area of Los Angeles is the Fox Networks Engineering & Operations unit, which provides all physical production, transmission and facilities activities to Fox Broadcasting Co., the more than 30 different Fox Cable Networks and Fox Sports. Outfitted with six 32-fader, 96-channel in-line Solid State Logic C200 digital production consoles, the FNE&O complex is, most weeks, a hotbed of activity.

The high-volume On-Air Promotion department creates hundreds of promos per week, using four C200s with Fairlight MFX editing systems. There are also three edit bays fitted with Pro Tools and ProControl that predominantly provide program material for Fox Sports.

Downstairs at Fox Sports, two mirror-image suites house C200s interfaced with Pro Tools. Grammy- and Emmy Award-winning mixer Jerry Garszva staffs one of the rooms; the other is helmed by Richie Becker. Several other engineers, including Jim Mitchell, Ed Golia, Julie Morgan, Fulton Dingley and Jay Hayes, also cover shifts.

"I mostly do promos for Fox Sports," says Garszva, "but I also work on the production side—like for Super Bowl or when baseball playoffs overlap with football—when the schedule gets really crazy and the rooms are working around the clock."

The facility's heavy workload dictates a fair amount of job function crossover

By Maureen Droney



Pictured (L-R): mixers Andy Harper, Gary Singleman and Matt Wellentin

Grammy/Emmy Award-winning Jerry Garszva staffs one of the rooms.

among the mixers. "Picture comes to us, we record the voice-overs and do the sound design," Garszva explains. "We also do the music editing and sometimes even compose music. Everybody here is multitalented. On the production side, we have pretty free rein, sounds-wise. On the promo side, we work with the Fox Sports Promo creative directors, which involves learning what each of them likes to hear and servicing them as clients.

"We do a really wide range of stuff," he continues. "For certain key games, like the Super Bowl, we'll do the whole package [everything that isn't live action], with pieces that run from 30 seconds to four minutes, like mini-features on a player, Super Bowl memories, et cetera. Then we'll do regional spots that ship out to affiliates. We also do long-format shows that run 60 to 90 minutes on everything from ice skating to poker and golf."

Although Fox has a half-terabyte of sound effects available from its online library, location recording is sometimes still required. "We recorded a number of sound effects for the NASCAR shows by going out on location to race tracks around the country," comments mixer Becker. "We also use Foley elements because our producers prefer real rather than archival sounds."

In addition to promos, Becker handles direct-to-live broadcasts, providing live sweetening during basketball and football events; for example, sound effects that accompany a graphic moving across the screen. "I have access to samplers, plus an [Apple PowerBook] laptop and an effects library," he says. "I need to be able to locate each sound quickly, using Pro Tools as my sound source. I just drag and drop what I need to assigned keys on the keyboard and mix as I go."

Sixty-four digital I/Os interface Pro Tools and the C200s, with Pro Tools being used, in general, says Garszva, "exactly like a multitrack, except we also edit on it and use some plug-ins where appropriate. For the most part, we do mixing on the console."

The staff is highly experienced with digital consoles: Prior to the installation of the C200s the facility housed, for 10 years, SSL Scenarios. A preference that developed over that time, Garszva notes, is for in-line, hands-on pots to operate specific functions, rather than layered, multiple functions that share a single display.

"For its day, the Scenarios were fabulous," he notes. "They worked great and took a real beating from us for well over 10 years. But a real improvement with the C200s is that instead of having multiple EQs and dynamics assigned by one channel, where you are always swapping things

around, they have all the knobs. I'm a technically minded guy; at the time, like everyone else, I bought into the idea that we didn't need all those knobs. But now, I firmly believe, for real speed and efficiency, you do.

"This is the first digital console that I've sat down at and felt immediately at home," Garszva continues. "The EQ sounds phenomenal, the dynamics are spectacular and it has very few—if any—artifacts. It totally does what it's supposed to without getting in the way. In this situation, where everything is last minute and down to the wire, you've got to be able to work really quickly without mistakes. We looked at a lot of different consoles. From a layout and ergonomic standpoint, the C200 was the best."

Thirty-two faders, a mixture of stereo and mono, are housed in five buckets, formatted to follow a template also used in the Pro Tools system. Although C200 software can manage up to 128 inputs, Garszva says that many aren't required at Fox Sports. "The nature of this work is so fast," he points out, "that you can't deal with a lot of individual elements. You've got to condense it down as much as you can before you mix."

Monitoring throughout the facility is by Westlake—large BBSM-12s and small BBSM-4s—which, Garszva says, "translate well to small and large TVs." Other gear in the Fox Sports control rooms includes a Manley limiter used on voice-overs, a TC Electronic 6000 and, at the end of the mix chain, a [Waves] L2. "We have strict rules as to our peak levels, so we use the L2 basically as a brick wall," Garszva comments. "It's got to sound very loud, but short-term peaks can't go above -6. We use the SSL's onboard quad bus compressor to control our average levels, which are restricted to +2VU average."

Although most promos are currently mixed in conventional stereo, within the year, both Garszva and Becker expect to be mixing in Dolby Surround with 5.1-channel projects. Surround capability was another appealing feature of the C200. "We did a theatrical promo for Fox International with a 5.1 mix," Becker notes. "I used the C200 to prepare templates [in surround] and the process was easy with this console."

From Super Bowl to NASCAR, then on to the Daytona 500: "Deadlines are crazy, but in 11 years, we haven't missed air yet," concludes Garszva with a laugh. "But we've come mighty close, to where someone takes the program material out of the recorder, runs down the hall, slams it into another machine and it's on the air. That's when it gets nerve-wracking!" ■

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

Jeff Wexler

Hands on Technology, Heart in the Film

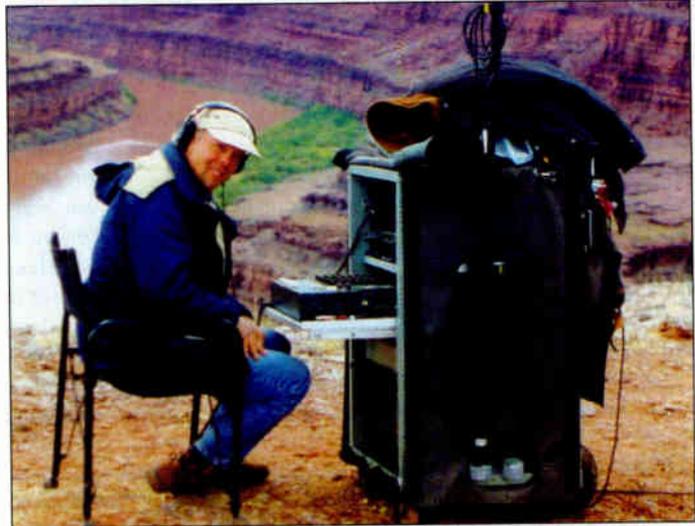
Production sound mixer Jeff Wexler brings to his work a uniquely practical combination of traditionalism and forward-thinking. With more than 30 years of experience in the movie business, he's amassed a treasure trove of knowledge on classical film recording techniques. He's also a digital pioneer. Acknowledged as the first to introduce DAT and the first on the West Coast to introduce Zaxcom's Deva hard disk recording to production, he overcame the film industry's notorious resistance to change simply by using the technology and demonstrating its benefits. Opinionated, but also open-minded, outspoken but subtle above all, Wexler is passionate about his chosen career of filmmaking and making great movies.

Wexler literally grew up on movie sets. His father is noted cinematographer Haskell Wexler (*One Flew Over the Cuckoo's Nest*, *Coming Home*, *Who's Afraid of Virginia Woolf?*), so the young Jeff was actually riding around on camera dollies at age two. Wexler freely admits that the respect his father achieved opened doors, but he was determined to make his own way, ultimately choosing sound rather than picture as his avocation. Although he originally eschewed a career in the movie business entirely, a summer job working on *Harold and Maude* with director Hal Ashby changed his mind. Once set on a career in sound, he dived in with both feet and never looked back.

Wexler's illustrious career crosses genres and has included, among many other films, *The Last Samurai*, *Almost Famous*, *Fight Club*, *As Good As It Gets*, *Jerry Maguire*, *Independence Day*, *Ghost*, *Throw Momma From the Train*, *An Officer and a Gentleman*, *9 to 5* and *Bound for Glory*.

How did it happen that you chose sound mixing for a career?

I had a master's degree in sociology and had pretty much decided I was going to teach when Haskell got me the summer job working on *Harold and Maude*—in the art department, actually. To my surprise, I loved every minute of being on the set and participating in creating something that ended up, at the dailies, right there on the screen. So I made the decision to give the film business a try. Since I'd always been a gadget freak and interested in equipment and technology, I knew it had to be in camera or sound. I didn't want to try to fill my father's very large shoes, so by default I chose sound. As it turned out, I had a real affinity for it.



Wexler on location in Moab, Utah, for *City Slickers II*

How did you learn the craft?

After *Harold and Maude*, I got offered a job on a Gene Corman film—*Cool Breeze*. I told them I was a sound mixer—even though I wasn't—so I had to learn very quickly. Fortunately, I'd absorbed enough from being on sets all those years that I knew how to look like I knew what I was doing! Also, on one of his first jobs as a cameraman on that picture was Andy Davis, who is, of course, now a director [*Under Siege*, *The Fugitive*, *Holes*]. Andy had the idea that I should hire his friend, Tomlinson Holman [co-founder of THX, now professor of film at USC], who was a film teacher, as my boom operator so that I could learn from him. Which is what I did. [Laughs] Tom was not the greatest boom operator, but he was a terrific teacher. By the end of the film, I had a good grasp of the equipment. We did, by the way, a very good job on the sound, and I was offered another film, then another.

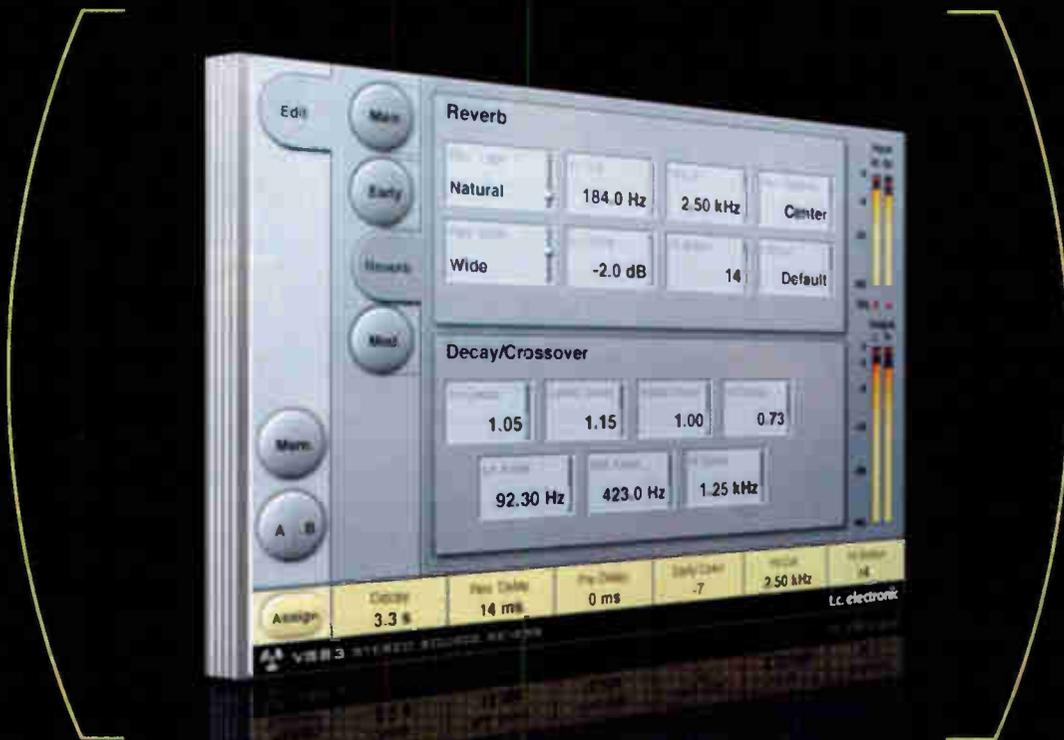
Often, people in film tend to be expert in their areas, but not too knowledgeable about the rest of the production. Probably because you were, from an early age, surrounded by the business, you have a different perspective.

Some people get into motion picture sound through audio engineering or through classes in electrical theory or acoustics—all valid approaches. It was different for me. I came into the business with an understanding and a love for the process of making movies first. Then, I decided that my particular place would be sound. Knowing that we're all just part of the process may have given me a fuller experience.

In some ways, the business encourages people to be



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talked about how they used to receive 6,000 feet of dailies a day with no real questions about what to do with it. Now they can get 30,000 feet of dailies, and once it's gone through, they don't know what to do with it, because it's shot from multiple cameras and the B camera angle was compromised, or the screen direction looks were wrong and things won't cut smoothly. We've gained the ability to shoot a lot of film and record a lot of tracks, but we've lost the sort of focus that needs to happen before you film.

How do you break down a script for sound?

Many people don't realize how important the script is to sound. I may have a draft of the script before we start, as well as a shooting script, so that I can anticipate where there may be difficulties. For example: Our main character goes over to the ice machine in a hotel vending area, gets ice to put in a glass, then does a five-page dialog scene. I'll note that on the day we shoot that scene, we need control over the ice machine. We don't want one that's hard-wired and can't be turned off or it will contaminate five pages of dialog. My note goes on to the production manager who, when he makes the deal with the hotel to shoot that location, ensures that we have a way to turn the machine off.



On *The Last Samurai* shot in New Zealand, Wexler was completely mobile in a Kawasaki "Mule."

If there are scenes with music, you have to get with the music department and maybe the composer. Will they pre-record music and shoot to playback, or do they want to record some of it live? Sometimes my notes may go to wardrobe. Ngila Dickson, the costume designer on *The Last*

Samurai, and I had a conversation prior to shooting. She'd done massive amounts of research about the construction of the armor and its materials, and it was my job to record dialog that wasn't contaminated by the sound of the various materials that she used to create the armor, which weren't authentic.

Do you record sound effects?

Dialog, of course, is the primary charge. But when I'm on the set, I try to record anything and everything that might be useful as much as I can. People in post-production seem to appreciate anything you can give them. Certainly in terms of recording wild sound and various sound effects, I always record what I know will be needed to put together a dialog scene.

What's your current technical setup and how many tracks do you record?

I use the [Zaxcom] Deva; I'll be using the new Deva IV, an 8-track nonlinear production recorder, that will replace my old Deva II 4-track machine. I'm still old school in that I record as few tracks as possible; I treat the work as if we only had one track. But I do take the elements that go into my mix and split them into isolated tracks so that someone later can use them for a different mix or for discrete tracks.

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You mix to mono?

Yes. Even if I'm using several mics, I'll mix them to track 1 of the Deva. Picture editorial demands one track—possibly two—where they can get on with the process of editing without going into lots of tracks. The Deva is full 48 kHz, 24-bit, uncompressed—about the highest quality available at this point. It will record at 192, but the rest of the chain of events doesn't support that yet.

Do you use any limiting or compression?

I do manual compression—gain riding. Even with the dynamic range of digital, a certain amount of compression is necessary. I apply some manually; a lot more is added in post-production. For example, with dialog, there are often performances where there's a drop in level at the trailing end of sentences. I'll help that up a bit so that at dailies, everything can be heard the way they need it to be. I'm not just laying down tracks so that somebody else will have to do everything to it. But with the multitracks, I love that I'm not tying anybody's hands later.

What mics do you prefer?

I use 48-volt, phantom-powered Schoeps condenser microphones—the hypercardioid CMC 41s. I used to use much longer, more directional microphones, as many people in film do. But I discovered a long time ago, on the film *Being There*, that a hypercardioid or cardioid with a gentler, less-directional pickup—although it buys a lot more background sound—gives a much more natural, pleasant and usable sound. We did tests with a shotgun mic and with the Schoeps and the Schoeps sounded like the real world. You heard the background, but in a coherent way that made sense. The extremely directional mics cut down the level of the background, but also negatively affected the sound of the voices.

Your preamps are in your console?

Yes. My console is an Andy Cooper analog design, a Cooper 208, with eight inputs, four outputs and direct outs. I go into the Deva analog line in. Andy's preamps are analog and transformer-based and about the best-sounding. Other people are using digital consoles, but I still like certain parts of our work to be analog.

You just finished working on *Elizabethtown*, another Cameron Crowe picture. What was that like?

It's a terrific movie and it's wonderful working with Cameron. He values the people working with him in such a way that you go out of your way to do things. He does, of course, have a unique way of working with music. Music is at the core of his existence—he plays it on the set all the time, even between sentences of dialog. Often, rather than giving

the actor a direction, he'll play a piece of music to get the reaction he wants. He has his hands on the button, and he'll play a piece right in the middle of a scene, which can be disconcerting for actors who haven't worked with him before!

We've gotten very skillful at preserving the dialog. Previously, he brought in hundreds of CDs, but on *Elizabethtown*, we had the benefit of PowerBooks, iPods and instant access, which made him even more aggressive about finding the absolutely perfect piece of music for a scene!

Any parting words about your job?

The most important thing in the work

that we do is the respect between people. Problems are solved by good working relationships. The equipment I use is very carefully thought-out, but I don't get a job because I use certain equipment. The end result is what's important. Equipment comes and goes; next, we might be uplinking directly to satellites! Who knows? If you haven't established the necessary skills, personal relationships and clarity of thought in your approach to your work, all the latest equipment won't amount to anything.



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

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Deadwood

Electronica-Based Composers Bring Life to Western Score

By Matt Hurwitz

The first thing that comes to mind for fans of HBO's critically acclaimed series *Deadwood* is probably not the score. More likely, it's the nasty Al Swearengen cussin' out his whores (or, for that matter, any other character on the show). Or Calamity Jane stumbling down the street in search of Wild Bill Hickok. The music is there—it just usually takes some looking-for.

The series, which has a rapidly growing loyal fan base, depicts the harsh Western life of the historic South Dakota town *Deadwood* in the mid-1870s, known for its gold prospecting, its raunchy saloons and as the deathplace of Hickok. Most of the series' regular characters (Swearengen, Hickok, Calamity Jane, Seth Bullock and others) are actually known historical figures from the town, depicted with stark realism.

While the usual TV Western surrounds its characters with dramatic, heroic anthems, the music for *Deadwood*, in fitting with the production's character, features subtly placed ditties of period instruments. Now in its second season, the show started out with a few different composers, including Michael Brook and David Schwartz, the latter who is the writer of the show's evocative opening title theme. But since the middle of the first season, scoring duties have been in the hands of a pair of musicians, Reinhold Heil and Johnny Klimek, who are more known for their work in the German techno world. "They couldn't be less connected with the Western form," comments the show's creator, David Milch. "But it's the mark of any artist that you submit yourself to the disciplines of the world, and these fellows work that way."

Heil and Klimek met in the early 1980s when Klimek's older brother, Alf, came to Germany from his native Australia to join Heil's band, the Spliff Radio Show. The pair later formed Babyloon, whose work eventually caught the attention of filmmaker Tom Tykwer, who asked them to compose music for his 1997 film, *Winter Sleepers*. Following a move to California, Heil and Klimek created music for Tykwer's next movie, *Run Lola Run*. "That helped us



PHOTO: PRAJHANT GUPTA

establish a foothold in the industry," Heil says. The team also scored *One Hour Photo*, as well as the theme and a half-dozen episodes of the popular *Without a Trace*, their first television series.

It was a great surprise, however, when their agent suggested them to *Deadwood*'s creators. "When they offered it to us, we thought, 'Can we do a Western?'" recalls Klimek. "We thought, 'Okay, we're known as the techno guys who use sequencers,'" adds Heil. "But surely our horizon is far greater than that. So we thought it would be great to show a little bit of our versatility."

The producers sent them the series' second episode and asked them to create cues. "There was hardly any music in it," Heil recalls. "So we thought, 'Let's use our computers, but let's not use click tracks or sequence in a mechanical way.' We'll just perform and improvise and use collage techniques to cut and paste effects that we have, and create atmospheric stuff that feels organic, yet weird—something that's not what you would expect from a Western series." The two created a layout and sent it to the producers, who then met with the composers and decided it was a match.

Heil and Klimek's approach is unique, both in instrumentation and in concept. To begin with, the show features very little scoring to accompany the onscreen images. "Often, music is used to reinforce the

emotional intention of a scene," explains Milch. "We never do that. And that rules out about 90 percent of musical cues."

Heil notes: "A *Deadwood* episode that has five or more cues in it from us would be called a 'music-heavy' episode. Normally with TV shows these days, you get wall-to-wall music. The viewer is not left to his own devices, emotionally. They always get a little help with what to feel. And this is not what they want here."

Though normally composers meet with series executives and directors for a spotting session to identify candidate scenes for music cues, during *Deadwood*'s hectic first season, there simply wasn't time. "They would send us a cut of the show and we'd watch it and take notes and make suggestions, or they'd send it with a few notes or a temp track," says Klimek. "Sometimes they might just ask us, 'Can you find some places?' or, 'What would you do?' So we'd make our own suggestions. Often, we gave them more than what was needed, and they would just use what they felt was appropriate."

"We would score to picture," says Heil, "but then David might take the cue and move it by 15 seconds. We'd be unsure about it until we'd see the finished product, and it would actually play nicely, which was great."

—CONTINUED ON PAGE 61

KQED Public Radio

San Francisco's Top-Rated NPR Member Gets a Digital Makeover

By Heather Johnson

A station such as San Francisco's KQED-FM—which is consistently ranked as one of the most listened to public radio stations in the nation, with more than 780,000 listeners each week—deserves an interruption-free, crystal-clear signal. Likewise, the announcers, hosts, reporters and producers that drive this station need top-notch equipment and a comfortable environment that aids efficient workflow and quick response time.

For this 35-year-old radio station, significant upgrades—everything from a cosmetic facelift to a complete equipment overhaul—needed to happen so that the facility met the station's historically high standards. One five-year, \$70 million fundraising campaign and a two-and-a-half-year renovation process later, KQED operates out of all-digital, ergonomically correct TV and radio facilities that affirm

the strength of public broadcasting, especially in the Bay Area.

While most of the fundraising proceeds went toward upgrading the television facilities, approximately \$4 million was bookmarked for renovating the radio rooms and to purchase and install the equipment needed to convert its radio transmission from analog to digital. The transition included installing a new HD transmitter and digital consoles, as well as constructing a new master control room, production suite and edit bay, and extensively remodeling the four existing production suites.

"We had a few goals," says Dan



KQED's multipurpose live air studio, home to everything from pledge drives to talk shows

Mansergh, KQED Public Radio director of engineering. "We wanted to 'get digital,' but we took that mandate fairly broadly. We said, 'Let's see how we can improve all aspects of our operation, not just digital audio or digital broadcast."

—CONTINUED ON PAGE 62

Reefer Madness

Campy Cult Classic Redo Receives High Marks

By Blair Jackson

A number of movies evolved from Broadway or off-Broadway plays or musicals, but how many films can claim an anti-drug campaign as their origin?

First produced by a Christian morality group in 1936, *Reefer Madness* began life as an anti-marijuana propaganda film called *Tell Your Children*. It was rediscovered in the late '60s—no doubt by film buffs high on pot—and it became an instant cult classic, playing on the repertory circuit for years and drawing stoned revelers to many a midnight screening. Several years ago, Kevin Murphy and Dan Studney fleshed the slight story into an elaborate, campy musical. It originally opened in Los Angeles in 1999, and then enjoyed a critically acclaimed run off-Broadway in 2001.

Now the musical has been made into a glossy, big-budget film for Showtime, with the director of the original stage production, Andy Fickman, at the helm, Murphy and Studney as screenwriters, and several original cast members reprising their roles amidst a handful of "name" actors, including Alan Cumming, Steven Weber and Neve Campbell. Fickman has described *Reefer Madness* as "*The Rocky Horror Picture Show* meets *Grease*," but it also has some of the decadent spectacle of director Ken Russell's most twisted visions and the razzle-dazzle of a Busby Berkeley musical. The film is one

of the first major original productions to come from Showtime since Robert Greenblatt assumed presidency of the network; clearly, he is out to show the world that HBO is not the only player in



PHOTO: JAMES DITTINGER/SHOWTIME

town when it comes to making high-quality cable features. A screening at Sundance in January drew a sustained standing ovation, so prospects for the film are...um...*high*.

Reefer Madness is virtually wall-to-wall musical production numbers in a wide variety of settings, from a school classroom to a reefer den to an S&M dungeon and a prison. Recording the music was the logical first step: "It all happened incredibly fast," says sound supervisor Glenn Morgan. "The actors met on the set and within minutes, they were rushed off to record their songs, and then, *boom*, they were in the scene." Initial recordings were made in Vancouver; later, much of the music was re-cut at L.A.'s O'Henry Studios, where they also recorded the original score.

Fickman, Studney and Murphy were understandably very protective of the show they'd developed for the stage, but they quickly learned that film had different requirements, especially for sound. "They were new to this world," comments effects re-recording mixer Adam Jenkins. "Glenn was saying, 'Look, we can do big-time Foley on this, add some effects and it'll make everything come alive more.' We can do that and still stay out of the way of the lead vocal, which is what they were worried about. They were nervous about not wanting to hear someone crashing through a window or someone being pulled through the chalkboard by a zombie because there's a vocal there. But once they saw that we could mix it in a way that you could hear the music and the vocals and have effects and Foley in there, they seemed really pleased."

For Morgan, who has been with Soundelux for 17 years "and known [company principals] Lon Bender and Wylie Stateman for 25," one of the greatest sonic challenges on the production was working on the big dance numbers. "When you see the show onstage, there's so much power and energy in the dancing: There's a big number called 'The Truth,' which takes place in prison, plus various others like the jitterbug sequence and one with some native dancers. I really wanted to be able to convey that energy through the screen, so one of the first things I mentioned to Andy [Fickman] was that I wanted to do dance Foley.

"I think that Foley is usually looked upon as two guys with some shoes and a coconut in a small room, but that's not what I meant at all," he continues. "We got a room at Capitol [Studios] and set up a 5.1 Pro Tools recording environment. We had the dancers come in and re-rehearse the numbers for

two days, and then we went and spent a couple of days just doing dance Foley. We set up shotgun mics on the floor to really get the power, and then we had mics left and right to get the spread, and we also recorded left and right ambience mics to give it more density. We gave all the dancers headphones and said, 'Don't worry about what you see around you; just dance to the music because that's where the energy is.' So we ended up layering it quite a bit and then [for the prison scene] accented it with shackle movements. We even did the claps in 5.1. So when it was all said and done, we had 75 channels of dance Foley to work with. We did the same thing with the orgy sequence, which was intense because we had natives wearing grass skirts, some wearing beads and they were barefoot. All that Foley brought a lot of movement and energy to those numbers."

When it came to effects, Morgan and his crew (including sound effects editors Kerry Carmean and Chris Assells and Foley mixer Derek Vanderhorst) had plenty of latitude: "We had a lot of fun with comedic sound effects, but we tried not to go over the top," Morgan says. "But there were certain gags we had to play and make them bigger than life. Like there's this character named Sally who's always running into things and falling down, so we had to play that up. It becomes almost like a cartoon. But all the actors are so in tune with their characters that they bring a lot of humor to everything they do, so our responsibility wasn't to carry every scene but to support their comedy.

"It was more about choices and making the *right* sound," he continues. "For example, opening up a cigar box that has reefer in it: You want to make sure it has just the right creak to go with Stephen Weber's eyes. Then there's a scene where Sally walks offstage to get her baby and you hear this *doon-dun-doon-doon*—it's her falling down the stairs, and you have to make that definitive enough so that you know what is happening instantaneously [without seeing it]. We Foleyed that. We had six different sounds just to make that work. Whenever someone would light a joint, we would exaggerate that: the clicking sound. And then there were all the different kinds of smoking—the inhale, the bogart hit, the

water bong, all very distinctive," he says with a laugh.

Morgan notes, too, that in certain spots where the music and effects seem to clash



Above: Adam Jenkins (left) and Glenn Morgan
Right: Dialog and music mixer Rick Ash

a little. "We would take some of our sound effects and re-pitch them in Pitch 'N Time so they would be more in tune with the music. So there are points where you can't really tell what is music and what are effects." According to mixer Jenkins, "We also used that to cover a couple of musical glitches."

Jenkins and his mixing partner, Rick Ash (dialog and music), did their work on the Neve DFC in Stage 2 at Todd-AO Hollywood, which is, as fate would have it, just two blocks from the venue where *Reefer Madness* got its start: the Hudson Theatre. "We'd have 32 channels of effects—eight channels of mono and 24 of stereo—and 32 channels of background, left and right, and a regular Foley session that was 16 channels wide," Jenkins says. "Then in addition to that, there was the big dance Foley in a couple of reels, which was 70-some odd tracks, though we pre-dubbed that down."

Everything was mixed in 5.1, which Jenkins notes also helped provide some needed separation between the music and effects. "Rick [Ash] did a great job of spreading music in the surrounds, too," Jenkins says. "There were some unusual things he did with the music that were very effective for keeping things away from the vocal. Like in one of the songs, he had a lot of the percussion in the surround. They were wreaking havoc with the vocals—this timpani roll over a female voice—so he said, 'Okay, let's get it out of there and move it to the back.'"

Additionally, Jenkins and Ash created

a “theatrical [Lt-Rt] 2-track mix and a television 2-track. The vast majority of people who see this will hear the television 2-track, and you really have to treat each one separately. Like on that timpani roll that was interfering with the vocal, when you do the television 2-track, you can take some low end out of the timpani—that sort of thing.”

In the end, it all fell together remarkably well, even with the usual time and budget constraints. “This movie was mixed in a quarter of the time it took to do *Chicago*,” Morgan states. “There’s never enough time, but I think we accomplished just about everything we set out to do.”

The stoners will be pleased. ■

Blair Jackson is Mix's senior editor.

Deadwood

—FROM PAGE 58

The basic method of recording, explains Klimek, is to record any number of interesting instruments to create what he calls the “*Deadwood* library.” “We take a lot of organic elements from that period and experiment using acoustic, folk-type elements, guitars, harmonicas, treat them in weird ways and build libraries. You end up with something strange and odd, which feels a bit modern, but still has the feeling of an old instrument.”

For their first episode (season 1, episode 6), the pair created an Indian Funeral cue using hoop drums and odd guitars. “I recorded with a guy called Jesse Voccia in Santa Monica [Calif.], who has a collection of 20 odd, folkly instruments. Some of them are really old and sound like crap. But that was perfect for *Deadwood*.” Adds Heil, “I recently got a hammered dulcimer, which can make some wonderful sounds. Basically, anything goes, whether it’s playing the inside of a piano with mallets or just scraping its strings with something.”

The composers work with a team of three collaborators—Bruce Winter, Shawn Thomas Odyssey and Gabriel Mounsey—at Heil’s studio in Santa Barbara, Calif. “The five of us play everything, record the instruments, chop them up, layer them and mix. It’s a team effort, where anybody’s role can change from one moment to the next,” Heil explains.

The instruments are recorded on Logic Audio (Versions 6 and 7) on Mac G4s and G5s. “You don’t really need to push the technical boundaries for *Deadwood* because everything is fairly minimal,” Heil

says. “I have two [Neumann] M50s, which I use a lot on *Deadwood*. There’s also one from the original East German branch of Neumann—a small bottle microphone with a small vacuum tube in it, which uses an M55 capsule—as well as Schoeps Colette microphones, which are a little more modern.”

Once recorded, the instruments are looped using Sound Quest’s Infinity. “From that, we’ll build a whole library of hundreds of samples,” explains Klimek. “Then for each cue, we’ll create a ‘carpet’: a base sound, an atmosphere. Sometimes, it’s just an acoustic guitar or whatever. But it’s always got to have something a little bit twisted, because that is the show.”

For the second season, the producers finally instituted conventional spotting sessions, the resultant first and second episodes featuring a good deal more music than the previous season. “It’s great to have the producers and the director physically sitting there with us discussing the scenes,” says Klimek. “It just enhances it so much.” The duo also did a set visit, which helped get them in the mood. “We had a look at the town, had lunch with the gunslingers and whores, and got a feel for it,” says Heil.

The music is delivered in stems to music editor Micha Liberman, who won an Emmy for his work on season 1. “We usually deliver 24-bit stems, sometimes in quad,” says Heil. “If it’s very atmospheric, we give them quad, but it’s mostly stereo stems, usually four or five of them.”

Besides Schwartz’s opening title theme, the only music the scoring team does not provide is what’s heard over the closing credits, which is selected by Jane Wallace. “They’re these very, very obscure period songs that are really not known, and they’re really just gems,” says Heil. A collection of the music, along with a few pieces of scoring, was released in February on the soundtrack CD, *Deadwood: Music From the HBO Original Series*, on the Lost Highway label.

Even though two years ago Heil and Klimek likely wouldn’t have pictured themselves scoring a Western series, they’ve fallen into the role nicely. “I find myself really excited every time a new episode arrives, which is really weird for a TV show,” notes Klimek. “It has to do with the genius of David Milch and the beautiful way he handles creating this thing,” adds Heil. ■

Matt Hurwitz is a freelance writer based in Los Angeles.

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KQED

—FROM PAGE 59

We also have to look at the Web and other distribution media as potential destinations for our programming, and we have to have the infrastructure to not only provide the audio, but also the metadata to go along with that."

"From a technical standpoint, they had to establish an infrastructure for both TV and radio that would work together," adds Richard Schrag, an associate at Dallas-based Russ Berger Design Group, who oversaw the project's architectural and design elements. "They really thought through their resources—not only in terms of equipment and how the spaces are tied together technically, but also in terms of how the spaces are used. There are large areas in the facility used for pre-production, and they are considering broadcasting a video feed of some of the radio shows via TV or the Web."

On the technical side, the company installed a Dalet Digital Media Systems broadcast automation and a news production database system that runs on 10 IBM XSeries eServers and a FastT200 SAN storage system, networked with 20 Dell Precision workstations (for the studios and control rooms) and 45 Dell Optiplex desktops for reporters, producers and operations staff. Audio routing is handled by a fully loaded Sierra Automated Systems 32KD 256x256 digital audio network, which resides with the servers, KVM system, satellite equipment, and STL and processing equipment in a central machine room.

Inside the control rooms, KQED wanted a flexible system that could handle multiple tasks, including pulling from satellite feeds or other outside destinations, without endless rewiring and with a short learning curve. The first step in accomplishing this task was replacing its Pacific Recorders BMXII consoles with Studer OnAir 2000M2 digital mixers.

"We're dealing with a station that's been around for more than 30 years, so there's a certain expectation about how a board should work," says KQED's Mansergh. "So we started looking at more traditional broadcast boards. The [Studer] does what you expect it to, just some of the controls are a bit different. You can store all of your settings as presets or assign them to a particular show configuration. If you know that a particular host needs EQ, you can store their mic setting with a particular show setup. Also, an engineer can come in and no matter what anybody's done before, can just hit a couple of buttons and know

that the board is back to the way he or she expects it. That's a real big advantage.

"For a traditional news production, you need computer sources from various output channels, a couple of mics and a CD player," continues Mansergh. "You're not using all the mics in the studio, so you can configure the board so you've got your core stuff at the center. Then, when you want to do a talk show, you can put all of your mics and 'phones in close and move the other stuff farther out."

Despite the board's short learning curve, the transition from analog to digital had to happen gradually to give the staff time to get used to the new desks and keep the station operational throughout the process. "We were changing everything about what we were doing," says Mansergh. "We tried to emulate the existing workflow, which helped the transition a lot. Now people are starting to really get creative about how to use [the new systems], which was one of our goals: to streamline things and add flexibility."

In addition to a simplified workflow, KQED Radio wanted to improve its surroundings by building a new master control room and main production suite, and remodeling the rest of the studio area. The company brought in Russ Berger Design Group to oversee the architectural and design elements of the new Master Control area and the older control room and studio renovation. Glendale, Calif.-based National Teleconsultants, who also worked on the KQED-TV upgrade, was brought in to develop a technical plan and provide installation documentation.

One of the design firm's goals was to create cohesion between KQED's new and existing spaces, as if "one hand touched everything," explains Schrag. "They had existing construction that they thought was okay in terms of sound isolation, mechanical systems and electrical systems, so we didn't have to start from scratch with the basic infrastructure."

The Russ Berger Design Group crew converted a corner of office space and some underused technical rooms into a new 20x16, 5.1-capable master control room, a 14x15 multipurpose live air studio and two digital edit booths. Installing new lighting and a large exterior window in the studio and another window leading into Master Control helped eliminate the former space's "oppressive" feeling.

In addition to the Studer desks and a Genelec 1031 monitoring system, the trapezoidal-shaped main control room features a 20-inch flat-screen video monitor,

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KQED's Master Control center features an ergonomic, spacious design built around a Studer OnAir 2000M2 console.

designed for earthquake safety.

"We had to drill holes into the post-tension concrete slab on the second floor, then build plywood bases for the concrete slabs," explains Mansergh. "Then there's steel edging that the walls attach to. It's a really complex puzzle and to make it structurally stable enough, there was a lot of bracing that went into it. Just getting the floors done was a pretty substantial process. You've got all this noise, people are cutting steel and we're trying to keep it all isolated [from the rest of the studios]. Our staff was very patient."

"Any time you're on the upper floor of a multistory building, sound isolation from the building structure is going to be essential," Schrag explains. "But the seismic requirements [for earthquake safety] for the new construction were at odds with what we wanted to accomplish acoustically. We wanted the rooms to be completely floating from the building, but the structural engineer required them to be firmly tied down so that they don't hop around in case of an earthquake. So we had to develop a great number of specialized details for providing the limits on the movement of those individual construction components

without negating the acoustic benefits of having everything floating."

As one can imagine, phase one of KQED's upgrade—the Master Control area—took the longest to complete, partly due to the extensive work involved, but mostly because of scheduling and making sure KQED remained on the air 24 hours a day (without the roar of cutting steel in the background). "We had to keep the old rooms operational while we built the new ones and move people into the new ones gradually, so we had duplicate systems running," says Mansergh. "We had to do production on tape in some of these rooms, while the computers were sitting in the rack already running. It was quite a tap dance."

In an effort to maintain its already well-regarded reputation in the Bay Area (as one might expect, an NPR-friendly environment that's especially interested in current events in its own backyard and the world at large), KQED radio plans to expand its local production, which already fills a substantial 20 percent of its daily

programming. The station also has more to do on the technical side, such as install the HD transmitter for its Sacramento, Calif., satellite station, KQEI, not to mention a recently purchased Studer OnAir 500 Modulo for the Sacramento bureau studio.

At a time when satellite radio is gaining ground over commercial FM stations and when MP3 players seem to have squashed radio's popularity altogether, KQED's commitment to community just may give it the edge needed to keep the company at the top of its game.

"We really encourage our clients to future-proof their place—to realize that they're not building for today, they're building for 15, 20 years out because that's how long these facilities last," says Russ Berger, whose company has worked with more than 60 public radio stations nationwide. "Public radio is such a vital part of life in so many parts of the country. It's real. It's visceral. You can drive down to the station and see the people you hear on the air. It's the last real live broadcast medium." ■

Heather Johnson is an assistant editor at Mix.

cakewalk

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Terry Howard Producer/Engineer

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New Sound for Picture Products



HARRISON TRION

Offered in versions specifically geared for film/video post, broadcast and live performance, Harrison's (www.glw.com) Trion digital console features a traditional surface rather than a central, shared-knobs control panel. Running on Harrison's IKIS™ platform, Trion uses Linux and USB technology with Ethernet connectivity. All consoles feature a 15-inch monitor for every eight faders, offering a dedicated view of each channel's information, along with Harrison's PreView™ waveform envelope display that provides a visual representation of channel names, stem assignments, EQ/dynamics, aux sends, metering and surround panning.

RØDE SHOTGUN MICS

RØDE (www.rodemic.com) debuts two condenser shotgun mics. The NTG-1 (pictured) has a lightweight design that boom operators will appreciate. It features standard 48-volt powering and a controlled polar response, wide-bandwidth capsule paired with low-noise SMT electronics. The mic is also available as the NTG-2, which is powered by an onboard AA battery. Both mics ship with mount and windshield for outdoor recording; options include an on-camera mount. Intended for DV camcorder use, RØDE's VideoMic shotgun has 9VDC powering, a switchable low-cut filter, a stereo mini-jack output, shock-mount and standard hot-shoe fitting.



ROLLS MX422 FIELD MIXER

The Rolls (www.rolls.com) MX422 is a 4-channel mic/line mixer with balanced XLR analog I/O, a 1/4-inch stereo aux input and TRS stereo monitor input. Each input has trim, phantom power, low-cut filter, pan and level controls. Other features include dual VU meters, a 20Hz slate tone/mic, 1kHz setup tone, onboard limiting and 1/4- and 1/8-inch stereo headphone outs. Main outputs are stereo XLRs with switchable -30dB pad. Power is via two 9-volts, and a set of backup batteries can be switched during operation without signal loss. Retail is \$599 with canvas case.

GALLERY METACORDER

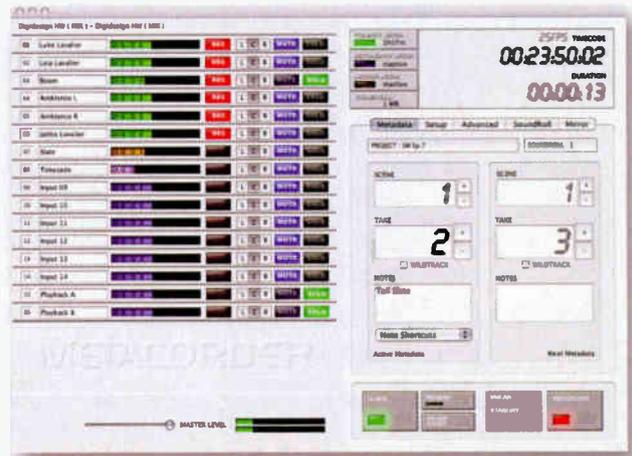
Gallery's Metacorder turns your Mac OS X laptop and CoreAudio interface into a full-function location recorder with sample rates up to 192 kHz and up to 20 inputs. Rather than featuring DAW software that's filled with functions that are irrelevant to field recording, Metacorder offers an intuitive, easy-to-use package with location sound-specific functions, such as 30-second pre-record metadata entry, dual-media recording and a background mirror

that automatically copies recorded files onto slower media (such as DVD-RAM) once you push Stop. The system can also back up completed sound rolls to DVD-R or CD-R drives via FireWire while recording continues. Other features include M-S decoding, an LTC reader and writing next-generation iXML and Avid/Pro Tools-compatible "bext" metadata. Retail is \$1,795; download a free demo at www.gallery.co.uk.



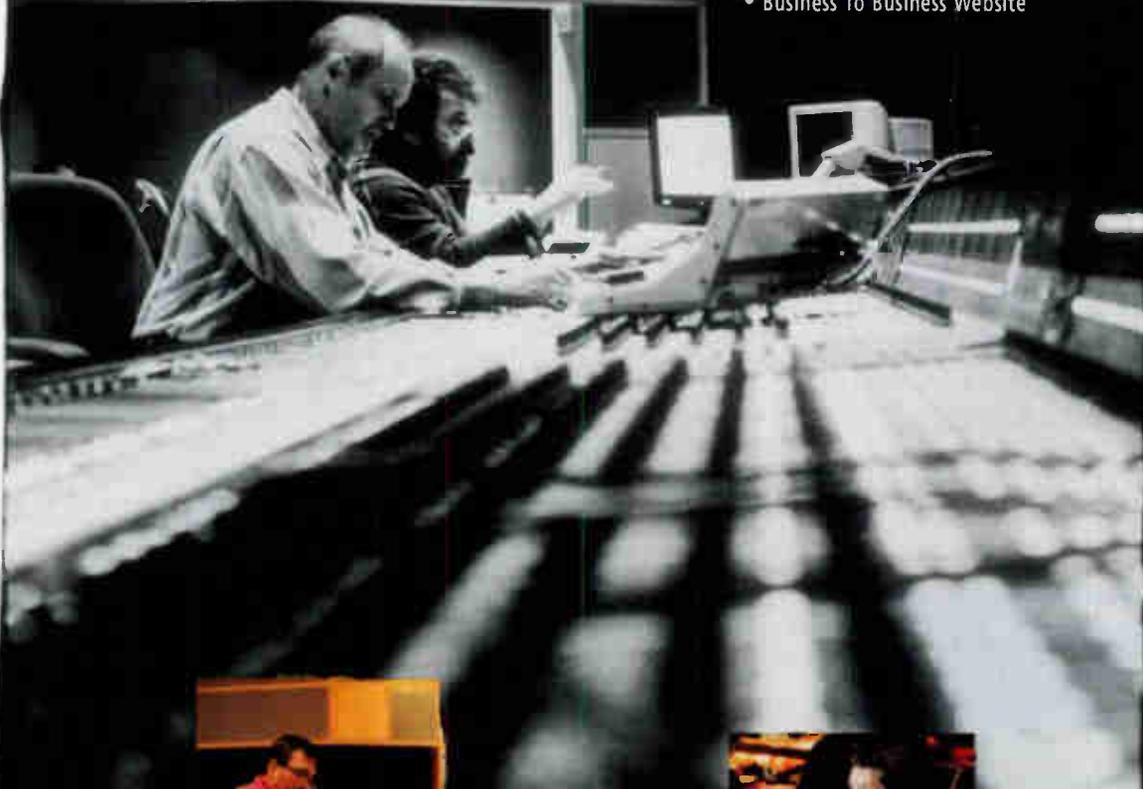
SOUND DEVICES 744T

The 744T timecode 4-track portable disk recorder from Sound Devices (www.sounddevices.com) is now shipping. Storing 16- or 24-bit uncompressed audio (.WAV or Broadcast .WAV formats) at any rate from 32 to 192 kHz onto hard disk or Compact Flash media, the 744T connects to PC/Mac DAWs via FireWire or AES3id outputs. Other features include two mic preamps with phantom power, limiters and highpass filters, two line-level inputs, two mic/line-level outputs, 256 possible input-to-track routings, sunlight-viewable LED meters, a data mode that simultaneously records to HD and CF media for RAID-1-level redundancy of recorded material and more. Retail is \$4,295; the 722 (a non-TC, 2-track version) is \$2,650.



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Cakewalk Sonitus fx:compressor with variable knee



Focusrite D3, bottom, bundled with D2 (top)



IK Multimedia T-Racks mastering suite

instruments or complex mixes. It can also improve old audio recordings by restoring a more natural dynamic and enhanced signal-to-noise ratio. The company's LIV limiter/maximizer can be used to control the dynamics of single tracks and to maximize the final mix's level. Available as VST plug-ins (PC/Mac) for \$69 each.

Arboretum's (www.arboretum.com) Ionizer is a multiband dynamic processor offering spectral analysis and 512 bands of gated EQ per channel. Featuring 32-bit floating-point processing, it can be used for dynamic noise reduction, equalization,

fx:compressor (\$39) from Cakewalk (www.cakewalk.com) is a variable-knee compressor that can mimic the behavior of hard- and soft-knee compressor units, and features normal and vintage-style compression types. Manual attack and release settings are included, as well as an algorithm that adjusts the release time on-the-fly, thereby avoiding fast compression changes and reducing "pumping and breathing." There is also a peak limiter. fx:multiband (\$79) is a 5-band variable-knee compressor with normal and vintage-style compression modes. Each band contains

audio signal and automatically sets the important parameters, if desired. There is also soft clipping to simulate analog tape saturation, an adjustable look-ahead function, brickwall limiting and an Auto-Make-Up function, which automatically delivers the maximum possible loudness. OptiMaster uses 24-bit/96kHz processing and is remote-controllable via MIDI controllers when used as an insert effect.

db-audioware's (<http://db-audioware.com>) Mastering Limiter is a loudness maximizer and brickwall limiter with dithering. The plug-in uses intelligent look-ahead limiting, and offers 16-bit dithering for creating CD masters, 64-bit internal accuracy and support for sample rates up to 24-bit/96 kHz. The Multiband Limiter is an upgraded multiband limiter and loudness maximizer with an interface that displays what the multiband algorithm is doing in real time. It also has look-ahead capability. The Dynamics Processor combines compression, limiting, expander, gate and a brickwall limiter with true sidechain capability, with 64-bit internal processing. They are available as DirectX for PC/Windows. Prices: \$39 each; or \$99, bundled with a de-esser plug-in.

The Digidesign/Bomb Factory (www.digidesign.com) BF-3A (\$245) plug-in, a classic compressor and leveling amplifier, is commonly used for processing guitar, piano, vocals and drums in Pro Tools. Offering more than just a simple simulation of attack and release times, the BF-3A's design captures every tube, transformer and transistor of its hardware counterparts.



Omnipressor is modeled after Eventide's classic compressor/limiter.

limiting, compression and expansion. Ionizer is user-configurable, enabling the processor to limit the low end, expand the midrange and compress the high end in a single pass. With its Frequency Morph function, users can analyze any sound and apply its frequency characteristics to any other piece of audio. Ionizer-DX (\$499, PC) is only compatible with Sound Forge and Cool Edit Pro. Ionizer 1.3 (\$499, Mac) can work within the company's HyperEngine, and is also a plug-in for AudioSuite, MOTU Audio System and Premiere-compatible apps.

an fx:compressor with individual control over threshold, ratio, knee, type, gain, attack and release parameters. fx:multiband also sports a peak limiter, input and gain reduction meters for each band, and an output meter. fx:compressor is available as a DirectX/VST, as well as part of the Sonitus fx:suite (\$299) and included in SONAR 4 Producer Edition (\$959).

Creamware's (www.creamware.com, 198 Euros) OptiMaster, for the company's Scope platform, combines a normalizer, multiband expander, compressor and limiter. The Wizard function analyzes the

Dynamics Processor Plug-Ins

The maximum supported sample rate is 192 kHz. BF-3A works on Mac OS X and PC/Windows XP (TDM HD Accel, TDM HD, TDM Mix, RTAS and AudioSuite). Also from Bomb Factory are the Fairchild 660 and 670 Tube Limiter Emulation Plug-Ins (\$595), which are available for Mac OS X and

Limiter maintains control of signal peaks. The plug-in is geared for Digidesign TDM users: Mac OS 9 (TDM HD, TDM Mix), OS X (TDM HD Accel, TDM HD, TDM Mix) and Windows XP (TDM HD Accel, TDM HD, TDM Mix).

Max DUY (1,295 Euros) from DUY (www.duy.net) is a sound level maximizing tool. It uses the company's ILO (Intelligent Level Optimization) algorithm for seamless level maximizing, zero harmonic distortion at low frequencies and prevents unnecessary level scaling and limiting. It can be purchased as part of the Global TDM bundle for TDM, RTAS, VST, MAS, AudioSuite and Premiere.

Omnipressor (TDM) from Eventide (www.eventide.com) is modeled after the company's legendary compressor/limiter/expander. Identical in functionality to the original hardware, Omnipressor offers simultaneous compression above

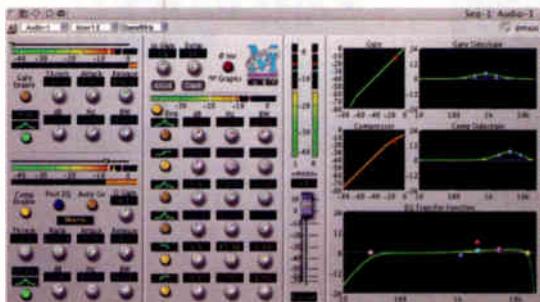
soundcards) is \$75.

Modeled after its respective Red Range hardware counterparts, the Focusrite (www.focusrite.com) d3 (\$595) is a compressor/limiter for TDM and AudioSuite-capable systems that provides two mono or stereo configurations. The d3 supplies compression and limiting at all times, allowing users to select compression or limiting, conserving DSP power for other operations as necessary. One d3 plug-in can be used multiple times simultaneously and is limited only by DSP capacity. Pro Tools software supports sidechain processing with the d3, accepting post-fader input to control dynamics parameters. The d3 provides separate insert configurations and also functions in AudioSuite, providing file-based processing and conservation of DSP resources. The d3 is bundled with Focusrite's d2 multiband EQ processor. d3 works on Mac OS 9 (TDM HD, TDM Mix, RTAS and AudioSuite), OS X (TDM Accel, TDM HD, TDM Mix, RTAS and AudioSuite) and PC/Windows XP (TDM Accel, TDM HD, TDM Mix, RTAS, AudioSuite).

Designed as a mastering plug-in suite, T-Racks includes a tube-modeled compressor, a multiband master limiter and a soft clipper. The IK Multimedia (www.ikmultimedia.com) plug features an analog-modeled sound. The compressor incorporates a highpass filter in its detector

stage for analyzing the incoming signal and determining how gain reduction can be applied, as well as mastering-oriented time constants. The multiband master limiter provides ultra-fast peak detection, a 3-band limiting stage and a soft clipping stage with variable clipping shapes. T-Racks works on Macs (HTDM, RTAS, VST); OS X adds support for AudioUnits. The plug-in is also PC/Windows-compatible (RTAS, VST, DX). Prices: \$399; TDM for Pro Tools is \$499.

Ozone 3 (\$249.99) is a 64-bit mastering suite from iZotope (www.izotope.com) that includes a multiband compressor featuring RMS detection, an adaptive attack/release time setting, several types of meters and "gain when bypassed" for comparing the bypassed signal and full undo history. Further, Ozone 3 provides real-time visualization of the dynamics within each band, level histograms and X/Y compression curves. Additional



Metric Halo ChannelStrip provides compressor, gate and EQ.

PC/Windows XP (TDM HD Accel, TDM HD, TDM Mix, RTAS and AudioUnits). Digidesign offers additional dynamics processors that extend beyond the scope of this article. For information, please visit www.digidesign.com.

Based on Drawmer's (www.drawmer.com) DS201 noise gate, the Gate/Compressor/Limiter Plug-In (\$595) is designed for processing percussive and highly transient material. The Sidechain Trigger can be set to key the gate off of any audio track. For less-percussive signals, the company's "Program-Adaptive Circuits" can gently control excessively dynamic passages. This Expander/Compressor/Limiter Plug-In is based on the Drawmer DL241 Auto-Compressor and DL251 Limiter. Auto-gain adjusts the compressor's gain when the



Sonic Timeworks CompressorX employs true stereo 64-bit processing.

threshold point and expansion below. The app operates at 48/96/192kHz sample rates. The plug is shipped as part of the Clockworks Legacy bundle (\$795) or the Anthology bundle (\$1,195), which includes the five plug-ins found in the Legacy bundle, plus Octavox, Eventide Reverb, H3000 Band Delays and H3000 Factory.

The n-Track Compressor is a compressor/expander/noise gate plug-in for DirectX from FASoft (www.fasoft.com). This plug-in allows you to define a custom dynamics graph, so even complex dynamics processing can be obtained with a few mouse clicks. The n-Track Compressor features independent left and right controls and processing (with stereo audio data), and operates on mono and stereo 16-bit and 24-bit audio material with an internal 64-bit resolution. Standard registration costs \$49; 24-bit registration (for use with 24-bit



PSP MixPressor emulates tones of classic devices.

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Dynamics Processor Plug-Ins

components include paragraphic EQ, a multiband harmonic exciter, multiband stereo imaging, a mastering reverb, a loudness maximizer and a Dither function. It is available for Pro Tools, VST, MAS, AudioUnits and DirectX formats.

Channel G (\$995, Mac OS X TDM) from McDSP (www.mcdsp.com) is a console strip featuring an expander/gate, compressor/limiter, equalizer and filters, plus a surround compressor/limiter configuration comprising L/R, C, Ls/Rs and LFE compressor sets. The expander/gate has adjustable range and threshold controls, as well as a continuous ratio for editing. The compressor/limiter also has a continuous ratio control and a knee control offering choices to smooth the transition into the compression region and between the modeled console dynamics processors. CompressorBank (\$495, Mac OS X TDM/



TC Electronic Master X5 offers 5-band processing for PowerCore (Version 1.7.6 or higher).

RTAS AudioSuite) provides control of dynamic compression; common controls such as output, threshold, compression (ratio), attack and release are provided. Non-standard Knee and Bite controls facilitate articulation of compression characteristics. Multiple peak-detection circuits emulate different compression units.

ChannelStrip provides EQ, gate and compressor functions. This Metric Halo (www.mhlab.com) plug-in provides input gain/trim, an expander/gate with integrated sidechain filter, a compressor with integrated sidechain filter, output gain/trim and high-resolution metering for each processing block. ChannelStrip ships with more than 100 presets and is available for Mac OS 9 X. The Mac TDM version is available for \$699, while RTAS, AudioSuite, VST, MAS and AudioUnits versions are available for \$345.

PSPaudioware's (www.pspaudioware.com) VintageWarmer (\$149) is a simulation

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Dynamics Processor Plug-Ins

of an analog-style, single or multiband compressor/limiter with considerable presets. Within its feature set are shelf filters for bass and treble frequencies in single-band processing mode, as well as VU and PPM meters with overload indicators. This plug-in processor can also be used for brickwall limiting. VintageWarmer provides 96kHz and 192kHz compatibility. Part of the PSP MixPack, the MixPressor compressor enables users to obtain a sound quality typical of classic devices with valve and optoelectronic circuits. MixPressor's

XP or 2000 and Mac OS X 6-channel-capable VST host applications, the plugs cost \$499 each.

TC Electronic's (www.tcelectronic.com) Master X5 (\$249) offers PowerCore users 5-band processing with adjustable crossovers, expander, compressor, limiter and dithering. Optimized for 44.1 and 48kHz processing tasks, Master X5 also has a look-ahead feature with up to 10ms adjustable digital ceiling and accuracy up to 0.05 dB, plus high-resolution metering with selectable hold modes and a consecutive clippings counter. Requires PowerCore software V. 1.7.6 or higher for Mac OS X and PC/Windows. For Mac, the host application must be VST- or AudioUnits-compatible. For PC/Windows, a VST-compatible host application is required.

Universal Audio (www.uaudio.com) offers a number of dynamics processors for its UAD-1 DSP card—all developed to extend the legacy of its hardware predecessors. Among them is the CS-1 Channel Strip, which includes the EX-1 EQ/compressor module. The 1176LN and 1176SE



Universal Audio Fairchild 670 Compression Emulator

Limiting Amplifier Emulators both provide compression. The 1176SE uses considerably less DSP power for situations in which DSP resources are limited, and the 1176LN employs vintage FET compressor emulation. The LA-2A Leveling Amplifier Emulator provides compression akin to the original hardware. The Fairchild 670 Compression Emulator is modeled after Allen Sides' favorite unit at Ocean Way Studios (Los Angeles). The UAD-1 is available in three configurations: the Ultra Pak (\$1,499), the Studio Pak (\$1,199) and the Project Pak (\$499). The CS-1 is available in all three configurations, while the remaining plug-ins reside (for the most part) in the Studio and Ultra Paks. Most plug-ins are also available separately for \$149 each. The plug-ins work for AudioUnits, VST, DX, MAS and RTAS; Pro Tools versions are also available.

Essentially a spectral compressor, Voxengo's (www.voxengo.com) Soniformer (\$59.95) uses compression to adjust spectral balance, with a 32-band spectrum analyzer, 64-bit internal precision and mid/side processing. Voxengo Elephant (\$69.95) is a mastering limiter plug-in providing sound limiting and loudness maximization functions. There are seven limiter modes, noise-shaped bit-depth conversion and support for sample rates up to 96 kHz. Crunchessor (\$49.95) is a general-purpose

level detector can operate in peak and RMS modes, and attack and release times can be regulated across a wide range or set to automatic. MixPressor's limiter can operate as a warm-sounding peak limiter or as a limiter saturator with a sharper sound. VintageWarmer is available for PC/Windows (VST, DirectX, RTAS) and for Mac OS X (VST, MAS, RTAS). MixPack Suite is for PC/Windows (VST, DirectX, RTAS) and Mac OS X (VST, AudioUnits, RTAS).

Designed to emulate compressors such as UREI's 1176 and the dbx 165, Sonic Timeworks' (www.sonictimeworks.com) CompressorX employs true stereo 64-bit internal processing with hard- or soft-knee compression, and peak or RMS limiting. Mastering Compressor includes soft-clip compression/limiting, 64-bit internal precision, loudness maximization, two separate compression algorithms and dithering to 16-bit. CompressorX is available for Mac (\$149), PC/Windows (DirectX, RTAS; \$179) and Pulsar/Scope (\$149). Mastering Compressor is available for Windows (DirectX, \$179) and Pulsar/Scope (\$149).

Part of Steinberg's (www.steinberg.net) Surround Edition of real-time surround effects plug-ins, OctoComp is an 8-channel single-band compressor, and OctoMaxx is a loudness maximizer for surround. All parameters are automatable. For Windows

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Dynamics Processor Plug-Ins

track compressor featuring valve warmth, fast and slow attack modes, and mono-to-stereo and stereo-to-stereo processing, among other features. Polysquasher (\$49.95) is a mastering tool offering transparent

band equalizer, a switchable crossover and a real-time FFT spectrum analyzer. All plug-ins are for Windows and run on VST-compatible host applications.

Wave Arts' (www.wavearts.com) Multi-

Dynamics is a multiband dynamics processor useful for mastering, noise reduction, volume maximization, de-essing and related tasks. Features include up to six bands with independent compression or expansion/gating per band, 18dB/octave and 30dB/octave crossovers, adjustable knees and look-ahead capability. TrackPlug is an EQ, compressor and gate plug-in with adaptive

RMS/peak detectors. Final Plug is a peak limiter plug-in with bit-depth truncation and noise-shaped dithering. It provides comprehensive noise-shaping options and supports operation up to 192 kHz. The offerings are for VST, MAS, AudioUnits, RTAS and DirectX and cost \$149.95 each.

Maximizer L3 from Waves (www.waves.com) is a multiband limiter with phase

linear equalization. The L2 Ultramaximizer is a peak limiter and level maximizer that uses ARC™ (Auto-Release Control) technology. The L1 Ultramaximizer, a brickwall limiter/maximizer, offers look-ahead peak limiting. Renaissance Compressor re-creates the warm sound and simple operation of classic analog hardware, while Renaissance Vox is a vocal compressor with compression/limiting and gating/upward expansion. TransX is a dynamics processor made to control and shape transients. The C4 provides 4-band up/down expansion, limiting and compression, plus dynamic and standard EQ. The C1 is a frequency-selective dynamics processor allowing two simultaneous dynamic processes. These offerings are for TDM, RTAS, AudioSuite, VST, DirectX, MAS and AudioUnits. While these plug-ins are available separately, the company recommends cost-saving bundles. Many of these plug-ins are found in the Diamond bundle: \$3,800 (native) and \$7,000 (TDM). ■

Roger Maycock is a freelance writer based in Los Angeles.



Waves L3 Maximizer: a multiband limiter with phase linear EQ

compression action. Key features include real-time gain reduction scope, variable knee compression, a highpass sidechain and support for sample rates up to 192 kHz. Voxformer (\$59.95) is a multifunctional vocal channel strip featuring one-knob vocal compression. There are two compressor types: 2-band or two-stage (serial) vocal compression. Voxformer includes a 4-

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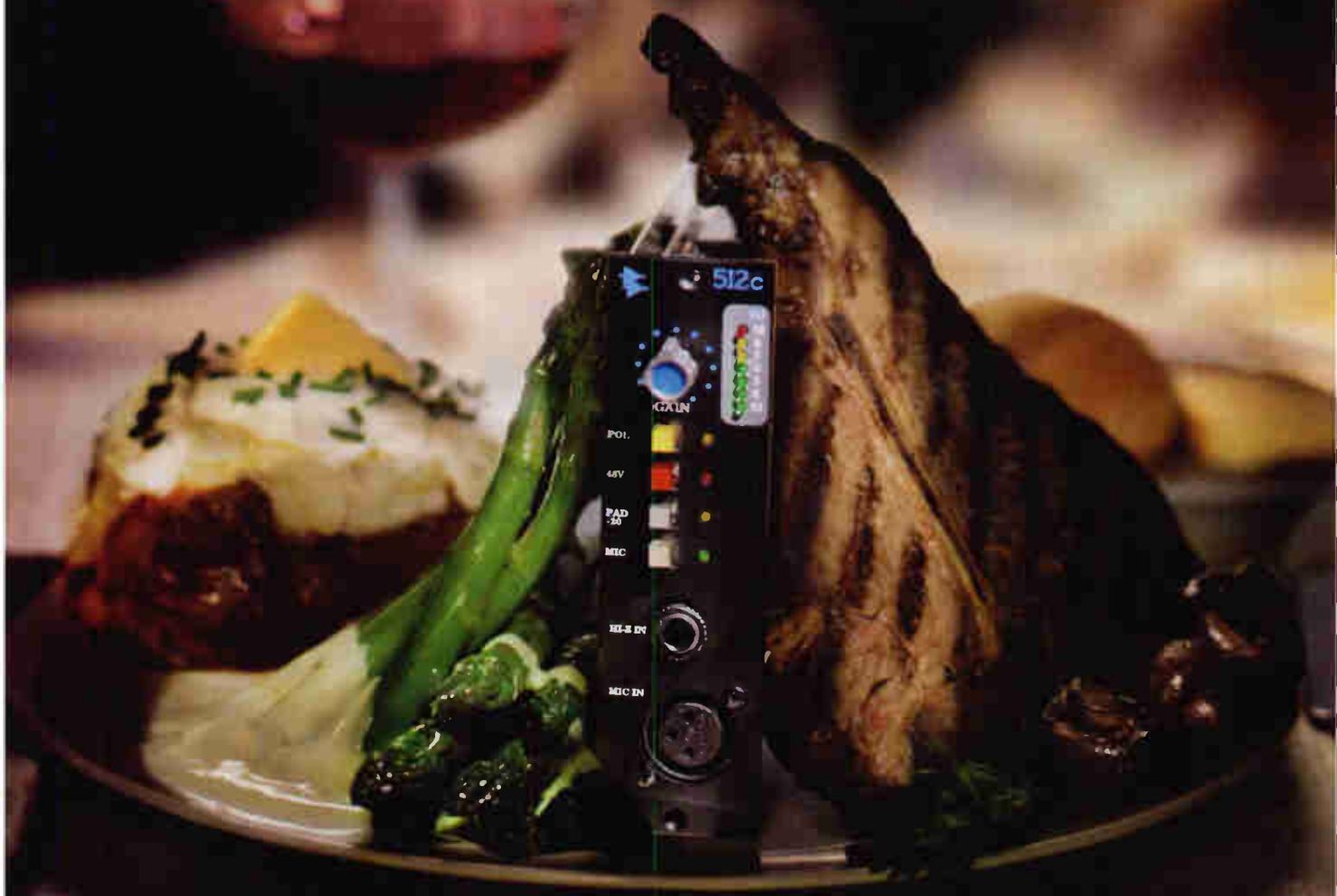
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Modest Mouse



Text and Photos by Steve Jennings

Modest Mouse played to a sold-out house at the Berkeley Community Theater (Berkeley, Calif.) in early February. *Mix* spoke with front-of-house engineer Chris Chandler—who has mixed the band since 2003—about their current tour. Thomas Wright (monitor engineer/stage manager) and backline techs Trevor Keen and Derek Linaman are also on-hand for this jaunt.

According to Chandler, “Things can change when you’re not carrying full production. [At the Berkeley show, Sound on Stage provided the P.A. and Yamaha FOH mixing console.] On this tour, I’m using Shure Beta 57As on Isaac [Brock, vocalist/guitarist] and Dann [Gallucci, guitarist/keys] and Shure SM58s on Tom [Peloso, upright bass/fiddle] and Jeremy [Green, drummer]. For Isaac’s second vocal, we use a Shure 104C for that ‘telephone’ sound.”

Chandler’s outboard rack includes Mercury M76m mic pre’s (with a dbx 160 and 6-band

EQ inserted) for Brock’s vocal, and a Discrete Plus stereo pre for Peloso’s vocal and bass. Bass also has a dbx 160 and 6-band EQ on it. Chandler inserts a Ridge Farms/The Boiler compressor into a stereo bus on drums for the “compressed drum sound from the album.” Also in the rack are Drawmer DS404 quad gates and a DL 441 quad comp, and a TC Electronic M2000. Drums are miked with Shure Beta 91, Beta 52, SM57s, 98s, SM81 and a pair of KSM 137s. Percussion is treated with an SM57, Beta 57A, 98s and SM81s. Guitars are miked with Sennheiser MD409s or 421s.



FOH engineer Chris Chandler

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News



Linkin Park vocalist Mike Shinoda records to a Mac-based Pro Tools setup on the road: “We do a lot of recording on the tour bus, so the rig is important. [The Mackie HR624s] have a really tight low end and a sound that consistently translates.”

JBL celebrated the sale of the 500,000th EON portable powered speaker. JBL’s Gerry Tschetter notes, “It took EON’s unique combination of technical innovation, light weight, reliability and affordability to move powered speakers from a specialty niche into mainstream pro audio.”...London’s *Autograph A2D* recently sold two DiGiCo D5T (theater) consoles, which will be used for upcoming Broadway premieres for *Dirty Rotten Scoundrels* and *Spamalot*...The University of Albany’s (Albany, NY) recreation center recently had SimplexGrinnell (nation-wide) design and install a new sound system; SimplexGrinnell project head Dominick Campana says, “Dilemmas posed by the sheer size of the structure are compounded by the building’s harsh, reflective walls. When a loud crowd is present, the noise floor hovers around 80 dB without even turning the sound system on.” Campana chose QSC loudspeakers, powered by 17 CX Series amps (1102, 902, 702, 502, 302 and 1202) distributed in a fan configuration. Four ModularDesign enclosures/cabinets and 36 AcousticDesign loudspeakers help create the desired tight pattern control.

Future Sonics Celebrates 20 Years in the Biz

Future Sonics founder/president Marty Garcia’s work in the live sound biz started in 1979, when he opened regional sound company Crystal Sound, which would become Crystal-Taylor Sound. Garcia notes that client Todd Rundgren was getting great monitor sound in halls and theaters, but had problems in arena-sized venues; when Rundgren had to sing out over the roar of instruments onstage, vocal fatigue would follow. Crystal Sound’s custom wedge-based monitor rig and console sounded so great to Rundgren that the artist bought it and brought Garcia on tour for the next five years to run it—while still developing custom-built transducers into ear pieces. Fast-forward to 1991: Garcia sold Crystal-Taylor Sound and founded Future Sonics. What’s in the company’s future? Products that will “blend in” with professional and consumer interests. Think MP3s and iPods.



Live sound guru Marty Garcia



LINN

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PHOTO: KRISTY JO HAIMA

On the Road

Sugarcult

Southern California-based punk/pop quartet Sugarcult kicked off its Take Action tour in early February before moving on to a series of Japanese dates with Green Day in mid-March. Front-of-house mixer Scott Ralston describes himself as simply a "sound engineer," as he divides his time between live gigs and studio work with bands 311 and Shuvel. *Mix* caught up with Ralston as he was setting up for a Sugarcult show at The Quest in Minneapolis on March 2, 2005.

What's your approach to live mixing?

I try to bring the studio aspect into the live world, and tuning the room is probably the most important factor in live sound. I play a DAT of dry, raw drum tracks that we made in the studio to tune the house. I've found that if you can get the drums sounding good, then everything else falls into place.

How much gear are you carrying on this tour?

We're hardly carrying anything. I do have some dbx 166 compressors and an Eventide H3000 Harmonizer and two old [DeltaLab] Effectron analog delays that I'm absolutely in love with. And we carry our own mics—the Sennheiser e935s sound really good on vocals, and we're using the 900 Series instrument mics. We're also carrying in-ear monitors. It's helpful to have at least a few things that are consistent. But every day, it's a new console, new speakers, new everything—it's kind of like mixing without a net.

What do you like to do when you're not on the road?

After four years out with 311, I couldn't be stationary anymore, so I bought a motorhome, put a Pro Tools rig in it and spent time visiting every beach on the West Coast. Lately, I've been producing a new album for Shuvel. I'm also obsessed with disc golf, which—believe it or not—has become a real sport.

Now Playing

Mercy Me

Sound Company: Spectrum Sound (Nashville)

FOH Engineer/Console: Garry Brown/96-channel Yamaha PM1D

Monitor Engineer/Console: Bobby Georger/96-channel Yamaha PM1D

P.A./Amps: d&b C4 system with C3s long throw and B2 subs/d&b P1200, D12
Monitors: V-DOSC SB218s, Sennheiser EW300 IEMs, PWS helically polarized antennas

Outboard Gear: TC Electronic Finalizer, M-Ones; Meyer Sound CP10; PreSonus Eureka; Lake Contour with PC tablet

Microphones: Shure Beta 52/91/98/86, SM57, KSM32, SM7B, KSM137, UA wireless system with B86 capsule; AKG C414; Audio-Technica 4031, 4050; Sennheiser MD421, SKM5000N with KK105 capsule

Assembly of Dust

FOH Engineer/Console: Jack Trifiro (also production manager)/venue-supplied, usually Crest or Midas with minimum of 32-input channels with eight VCA submasters

Monitor Engineer/Console: Josh Cohen (also backline tech)/venue-supplied, usually Crest or Midas with split from FOH snake

P.A.: venue-provided, usually McCauley, Adamson, EAW or Meyer

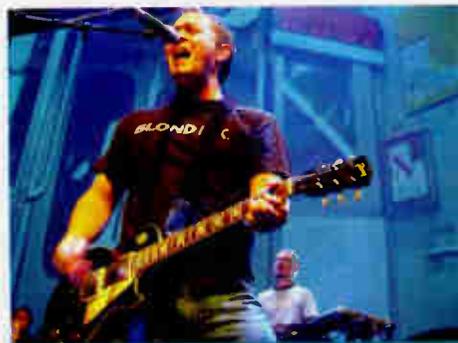


PHOTO: GREG KESSLER

Monitors: Sennheiser EW 300 IEMs with Shure E5 earbuds

Outboard Gear: Klark-Teknik or Ashly EQs; Drawmer or dbx comp/limiters; TC Electronic, Lexicon or Yamaha reverb; TC Electronic, Roland or Korg delay; Eventide or Avalon compression

Microphones: Audix D6; Shure SM91, SM98A, SM57, Beta 56; Oktava MK012; CAD e100; Sennheiser 409/609, 835; AKG 414

Ram's Head Goes Live!

Baltimore's Ram's Head Live!—a live music venue that opened in mid-December 2004, and has been host to saxophonist Maceo Parker, Chris Isaak and B.B. King, among others—boasts a high-end combination of video, audio and lighting, complementing the 26,000-square-foot space. To provide customers with a pristine view of the night's entertainment, a 20-foot projection screen and 40 42-inch plasma screens are included, while two Lake Contour 2-in/6-out digital loudspeaker processor units optimize the main house, under-balcony and fill speaker systems. Washington Professional Systems' Greg Lukens led the project.



A sneak peek inside Ram's Head Live!

Adjustments can be made to the Lake Contour system, which features an analog 1/3-octave equalizer that can be patched into the house system; additional features include EQ overlay, crossover, dynamic and delay processing capabilities. Lukens reports, "Whatever the engineer does to the house system, [he/she] does to all the speakers. We're running the delay zones off of additional Lake Contour outputs so all the zones run under the master EQ screen." The venue's FOH engineer, Jamie Rephann, says of the Lake Contour, "You can pretty much do just about anything you want with it. It's an incredible unit."

Paul McCartney

Iron Maiden

U2

R.E.M.

Bela Fleck

Los Lobos

Pearl Jam

Neil Young

The finest line.



When R.E.M.'s house engineer Brett Eliason looked for a FOH sound system for their North American Tour, he needed a very flexible rig that would sound stellar in a wide range of venues. He found his solution with Carlson Audio and the renowned EAW KF Series line array modules.

"One of the things we particularly like about the EAW KF Series is that it offers very good pattern control in the lower mid-range and upper low-end," commented Carlson Audio's Senior Engineer Allan Bagley.

"Being a fully horn-loaded system, it tends to be tight in an area that can get messy vocally — and we felt like some of the other line array choices tended to be much less controllable down in that region. Plus the KF Series goes up and comes down quickly, it's been easy to hang and configure throughout the tour."

The KF Series: Engineered to Solve Problems

Here at EAW, our loudspeaker engineers were pleased to hear of Carlson's success with the KF Series, but we weren't surprised. Both the KF760 and KF730 Series line array systems were designed for extreme output, superb articulation and maximum ease of use — providing all the benefits of line array while simultaneously improving upon the shortcomings of many other manufacturer's systems. One listening test vs. the competition and we're sure you'll agree.

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The complete EAW package for the R.E.M. tour included 24 KF760 long/medium throw boxes, eight KF761 nearfield boxes, and 16 SB1000 subwoofers. Four KF750 and four KF755 downfill boxes worked in combination with four EAW JF260z and two JF290z two-way cabinets to provide rear and side fill.

Carlson Audio employed the EAW KF760 Line Array for R.E.M.'s recent North American tour.

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World Radio History

Scissor Sisters

Photos and text by
Steve Jennings

Genre- and gender-defying five-piece Scissor Sisters—whose music brings in a mix of rock, pop and dance inspired by burlesque shows, drag queens and glam rock—played to an exuberant crowd in late January at San Francisco's Warfield Theater.



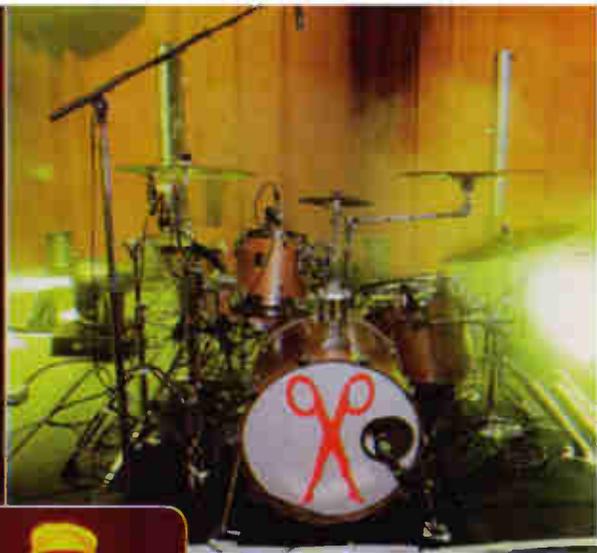
Vocalists Ana Matronic and Jake Shears (left) use Sennheiser MD845s and Evolution G2 handhelds.

The Yamaha PM5D RH has digital gain, so I can pick a board up anywhere in the world and load my show in with all the gain," says monitor engineer Ben Booker. "The RH also has a clearer top end than the standard PM5D as it uses the PM5000 preamp. With the board's recall, I can have a different EQ for each song. I like mixing on faders—it's like doing six FOH mixes for the ears."

Monitor engineer
Ben Booker



"Everybody is on Shure ES in-ears, except Jake. He likes to be free, so I have wedges around the stage to cover him and I ride him on the faders," Booker continues. "We use Sennheiser G2 IEMs. They are self-scanning, sound good and are well put together."



Drummer Paddy Boom's mic setup includes Sennheiser's new 901 ("the fattest-sounding mic ever!"), 902 (kick), 903 (snare top), 604s (snare bottom, toms), 614 (hi-hat) and 844s (overhead ride).

FOH engineer Dave Kay



"In the U.S., we are not yet touring with much production," says FOH engineer Dave Kay. "We do carry small things to make our lives easy and to keep a certain level of consistency. The only processing I carry is a dbx 120 to warm up some of the acoustic songs and an XTA 3100—my get out of jail unit. We're carrying our monitor desk and IEM systems, so the stage sound is very minimal and always consistent."



Each night's rig is supplied by an outside vendor. (Hayward, Calif.-based Sound on Stage supplied P.A. for the Warrfield show.)

On the tour's UK leg, Adlib Audio provided a Verline 460 system. "We were using the BSS 366 1 crossovers with the new Think Filters and we had some fantastic results, even in some of the notoriously bad-sounding venues," Kay explains.

"I have 26 channels coming from stage and I prefer to run zones of the P.A. system from matrices so that the system can be fine-tuned, but the whole system is still controlled from the L/R mix," Kay continues. "I also route the vocals through a subgroup so I can dial in more to the front-fills and other zones that need lift."

My desk of choice is a Soundcraft Series Five complemented with a rack of BSS DPR-402 compressors—as many as I can get my hands on—some dbx 160s for the vocals and four channels of Drawmer DS201 gates. I use a TC Electronic D2 or 2290 for a tape delay, an M3000 for vocal reverb, a Yamaha 990 for some chorusing and a PCM70 for the drum reverb. I am a big fan of BSS VariCurves because of their great interface. We've recently been using the BSS SB2 platform for total system control with a tablet PC.

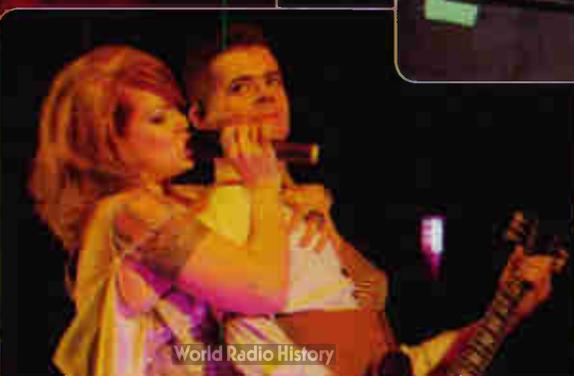
"They are a great, fun band to work with," he concludes. "It isn't possible to categorize our typical audience because we have people from all walks of life and all ages—dressing up and definitely letting their hair down in a serious way."



Keyboardist JJ Garden uses two Korg MS2000s and a Korg SP200 piano through a Line 6 POD XT Live for his delay and flanging effects, and the odd wah-wah.



Bass, keyboardist Babydaddy uses a wired mic for backing vocals.



Guitarist Del Marquis' foot pedal system is built around a Line 6 POD XT Live. "I can edit sounds on-the-fly and save it to my PC for backup," explains monitor engineer Ben Booker. "We don't mike the onstage amp—just take a DI straight from the POD."



Yonder Mountain String Band

Bluegrass That Rocks the Stage



Just as one should never judge a book by its cover, one should never prejudge a performance by its stage. On the evening of February 24, 2005, someone unfamiliar with the Yonder Mountain String Band could have easily walked into Greensboro, N.C.'s historic Carolina Theatre, glanced upon the ornately trimmed 1920s-era stage and assumed that the evening would be filled with tranquil acoustic sounds. Dimly lit and occupied by four vocal microphone stands, two instrument mics and four evenly spaced racks of gear, the stage simply did not foreshadow the impending intensity of the evening's performance.

Yonder Mountain String Band (Adam Aijala, acoustic guitar; Jeff Austin, mandolin; Dave Johnston, banjo; and Ben Kaufmann, upright bass) and their crew must be used to such erroneous assumptions by now. After all, quartets featuring banjo, acoustic guitar, mandolin and upright bass rarely attract rabid fans that uninhibitedly dance and sing in the aisles—or with tonight's show, in the orchestra pit—from the show's very first note. But the difference between this band and most other bluegrass-influenced acoustic groups is that Yonder Mountain *rocks*—pure and simple.

MAKING AN ACOUSTIC ACT LOUD

According to front-of-house engineer Ben Hines, his job with Yonder Mountain String Band is pursuing the high levels before feedback—a tough task for an acoustic act generating virtually no

onstage volume. "We've gained the 'jam band' title and a rock 'n' roll crowd," he explains. "I'm basically pushing toward the last five percent before feedback to get these meaty volumes that the crowds are expecting—and I have zero stage volume. Basically, I'm 100 percent out of the speakers."

Long before his gig with Yonder Mountain, Hines began his career as a musician and later attended Eastern Kentucky University on a Music Education scholarship for trombone. "While I was there, I realized that I didn't have the nerve to perform onstage," he admits with a laugh. "I then decided to get into electronic music and moved to Dayton, Ohio, to go to the International College of Broadcasting. They had a small audio recording program there."

Prompted by the encouragement of an ICB instructor, Hines soon took a job at a local 200-seat club—the Canal Street Tavern—where he began to hone his skills as a live sound engineer. "I got thrown into the fire there," he recalls. Hines continued to work various house sound gigs until finally—albeit briefly—moving to Austin. "It was October 2000 and I was working at Big House Sound when the [Yonder Mountain] guys called me. Previously, I had a house gig in a 400-seat venue in Kentucky where I had mixed them. I remember that they really enjoyed the way I mixed, and after the show, I gave them a business card. Later when I got that call, I was humping P.A. in the hot Texas heat so I said, 'Yeah, I'll

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BROADCAST

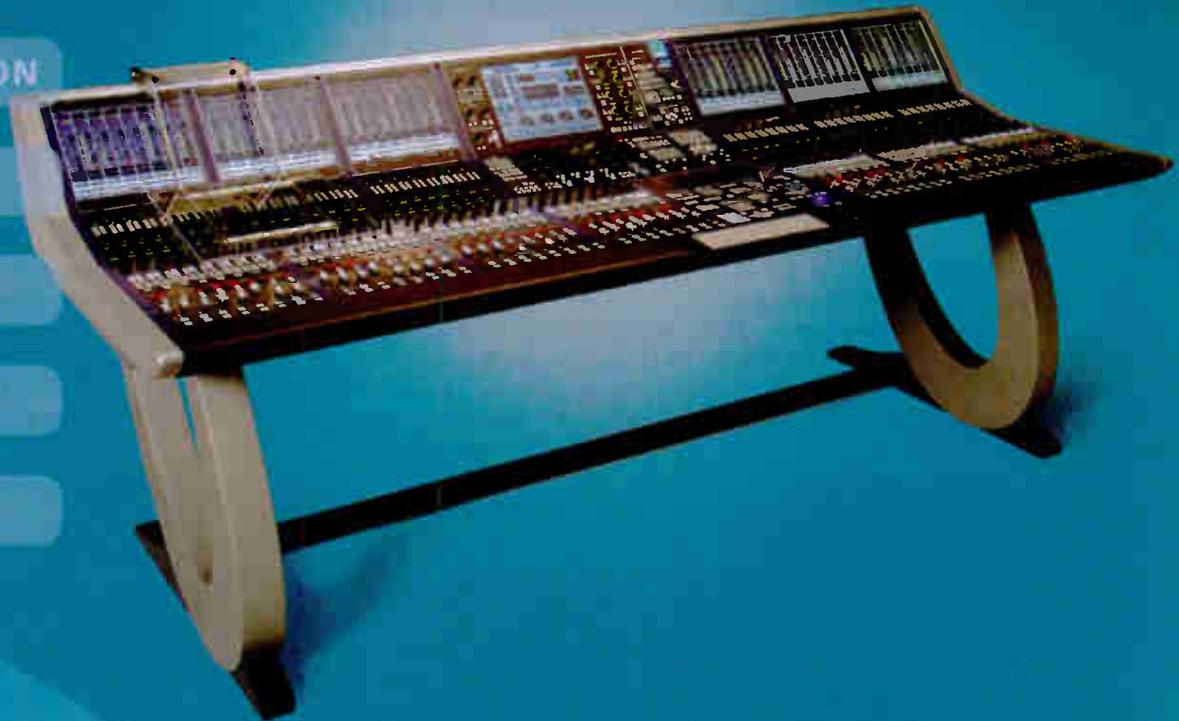
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World Radio History

take that gig!"

Since then, Hines has enjoyed Yonder Mountain's growing success, moving from "sleeping on floors and driving all night" to traveling as any hot ticket act should—on a large, comfortable Prevost touring coach. But to Hines, the best thing about his gig is the constant musical surprises, courtesy of the highly improvisational musicians he collaborates with every night.

"I obviously don't hear the same show every night, which is what you'd get when working with other bands," Hines offers. "They do weird segues, go into different songs and I feel that I'm in tune with what the guys are doing onstage. They definitely make me feel like I'm part of the band."

OUR STORY TAKES PLACE WITH A NEW VERONA

Yonder Mountain recently acquired a new Midas Verona 4008 for FOH, which Hines adores. "I had fallen in love with anything made by Midas, and because we don't have a major-label budget, everything is financed in-house," he says. "We were looking closely at price. I had worked on the Heritage, the Venice and a couple of Veronas. While the Veronas didn't have

all the bells and whistles of the others, it had those great Midas preamps. Plus, this console fits nicely under the bus; they don't have to travel with a trailer."

In regards to processing, Hines cites the BSS DPR-404 quad compressor/de-esser, Rane Model DC-24 dynamic controller and BSS FCS 966 Opal graphic EQ as the most crucial bits of gear in his racks. "I use the DPR-404 for vocals and the Rane DC-24 with the crossed-over compression for bass," he explains. "I have the BSS Opal graphic EQ on both of my guitar channels, which gives me a great acoustic sound. Adam plays semi-light, so I take the tinny-ness out of his pickup channel and use the lows while graphic EQ'ing out the high part of his acoustic's internal mic. It turns out to be a really nice blend."

Onstage, Aijala and Austin use rack-mounted Pendulum SPS-1 stereo preamps in their respective racks and internal Joe Mills acoustic instrument mics. In addition, Austin frequently steps up to a stand-mounted Neumann KMS 105 for solos, which is phase-corrected with a Little Labs IBP alignment tool. Banjo player Johnston uses an internal pickup/external Shure SM98 combination with an Avalon U5



Monitor engineer Kevin Gregory (left) and FOH engineer Ben Hines in front of the new Midas board

mic preamplifier. Kaufmann's Eminence Gelbass—a miniature acoustic upright bass with standard-size neck and scale length—runs direct via two bridge-mounted pickups. "Those things give me a consistent sound everywhere I go," Hines boasts.

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The Professional Standard

"Most songs—at a minimum—are two-part harmony," says Hines. "But everyone sings, sometimes in four parts."

On this particular night, a P.A. featuring Meyer Sound UPA-1A speakers and Crest Audio FA-901 amplifiers was used. However, this varies from show to show, as Yonder Mountain relies on house systems. This often presents extra challenges for Hines, who says that some venues simply "don't get it." "The last thing I want to hear is, 'You're not a rock band so you don't need a big P.A.' It's a complete misunderstanding." On some occasions, Hines supplements the house system with additional front-fill and sub cabinets. "One of the next purchases I'll make is front-fills, probably the Meyer Sound UPM-1P models. That will make sure that I always sufficiently cover the front rows."

HANDS OFF THE WEDGES

For Yonder Mountain's "no wedges" monitoring situation, recently appointed monitor engineer Kevin Gregory mixes on a Crest Audio XRM rack-mount mixer for the band's Shure personal monitoring systems, which comprise two PSM600 and two PSM700 packages. "It's pretty

straightforward," says Gregory. "By using in-ears with acoustic instruments, we eliminate a lot of the inherent feedback problems of using monitors. I may have the same ear mix ready each night, but it will change because of the way it reacts with the room's size and acoustics."

"If your gain's too hot, you'll get so much slapback inside the instruments that it will cause a wash in the band's ears," offers Hines, explaining how FOH can drastically affect the band's mix. "The main thing the band hears from the mains is the highs, so we roll 5 kHz out of their ears." Recently, the band noticed an improvement in their monitor mixes, says Hines, because of the new FOH desk. "They would occasionally ask me if the new console had anything to do with the monitors, and I would say, 'Nope.' But when we started using the Verona, they could hear a lot better—they're even playing better!"

Along with keeping levels at an optimum point—hot, but not too hot—Hines feels that getting good separation is a significant nightly job. "I don't do hard compression on anything because I think that takes a bit too much life out

of each instrument," he says. "I do some cuts at front of house with graphic EQ, but the way the preamps come up, as long as I have good, strong gain, I will add frequencies instead of getting rid of them. There are some drastic cuts at 160 Hz and 400 Hz for guitar, but I make those up in the mandolin, where I add 400 Hz. I try to fill four parts of the EQ spectrum with the four instruments. Since all of those strings are so close to each other, getting separation is important."

Hines confirms that aside from all of the technical and acoustics considerations of his job, it is fan participation that makes for a perfect performance. Judging from the Carolina Theatre crowd's spirited orchestra pit jigs and transfixed attentions, Yonder Mountain nailed it. "It's all about crowd reaction," Hines concludes. "A perfect show is where we can get to a loud point with the crowd in a complete frenzy, and one of the guys stops and starts tickling the instrument. Then it's dead silence. That's when you know everyone's into the show." ■

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



studio furniture



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- ▶ Footswitch jack for punch-ins
- ▶ In/Out point buttons
- ▶ Mac OS X and Windows XP compatible



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

100mm touch-sensitive, high-resolution motorized faders and twenty-four complete channel strips plus Mute, Solo and Select buttons.

For more info on the first *affordable* DAW controller with enough faders to handle typical recording sessions without lots of bank-switching, e-mail us for a brochure at tascam.lit@teac.com or visit a TASCAM dealer.

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The US-2400 is compatible with Digidesign® Pro Tools®, Steinberg Cubase® and Nuendo®, MOTU Digital Performer®, Emagic Logic®, and Cakewalk Sonar®.

TASCAM



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DBX DRIVERACK 4800

The next generation of DriveRack processors, the DriveRack 4800 from dbx (www.dbxpro.com) offers all of the familiar processing and a host of new algorithms, including Advanced Feedback Suppression (AFS™). The 4800's 96kHz processing engine and standard digital I/O extends bandwidth and reduces latency, while four analog and AES/EBU inputs with eight analog and AES/EBU outputs and an optional CobraNet™ card enhance versatility. Retail is \$3,749.95.

AUDIO-TECHNICA

AT892 HEADWORN MIC

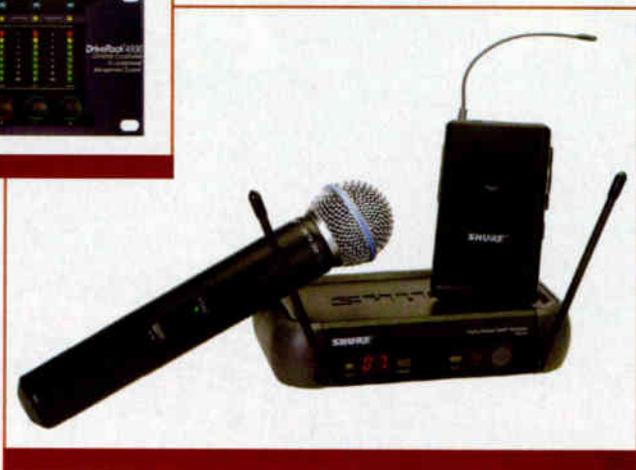
The AT892 MicroSet™ omnidirectional headworn condenser mic from Audio-Technica (www.audio-technica.com) puts accurate sound in an inconspicuous, 2.5mm capsule. Offered unterminated or in versions designed to mate with popular wireless bodypacks, the AT892's high-comfort under-the-ear design provides a secure fit and is ideal for users with eyeglasses. The MicroSet includes two windscreens, two element covers, a cable clip and a protective carrying case, and is available in non-reflective black or theater-beige finish.



TC ELECTRONIC SHIPS XO24

SPEAKER MANAGEMENT CONTROLLER

TC Electronic (www.tcelectronic.com) is shipping its XO24 digital speaker management controller. Offering flexible routing and state-of-the-art AD/DA converters, the XO24 has two inputs and four outputs with a routing engine that sends any input to any output. Each signal path includes crossover filters, 4-band parametric EQ, delay, limiting and an additional 4-band "speaker tuning" parametric. The XO24 can configure a stereo bi-amped system, four channels of full-range passive speakers or can add a subwoofer to a two-way full-range system, ideal for main/monitor setups in smaller venues. All functions are accessible via a simple "one-click" front panel interface, and the unit stores 20 factory and 100 user presets. Retail: \$995.



SHURE PGX WIRELESS

Offering diversity operation and audio reference companding in an affordable, simple-to-use system is the PGX Wireless Series from Shure (www.shure.com). Priced from \$558, the series is available in instrument, lavalier and handheld versions, with the latter offering PG58, SM58, Beta 58A or SM86 condenser capsules. Other features include the simultaneous operation of up to nine systems per band (up to 12 systems using multiple frequency bands) and eight hours of continuous operation from two AA batteries.

CORRECTION

MACPHERSON AXIA

The following was inadvertently omitted from the January 2005 "Line Arrays" article: Available as a three-way bi-amp or tri-amp system in both install and road versions, MacPherson (www.macpherson-inc.com) AXIA's three-way design can be used stand-alone or coupled to form a powerful broadband vertical line array. The hardwood-ply enclosure houses one 600-watt RMS direct-radiating 15-inch driver, two 8-inch twin-coil direct-radiating cone mids and a 2-inch high-frequency compression driver mounted on a 90x55° slot-CD horn. Up to 12 cabinets can be flown from a single point. Response is given as 50-17k Hz, ±3 dB.



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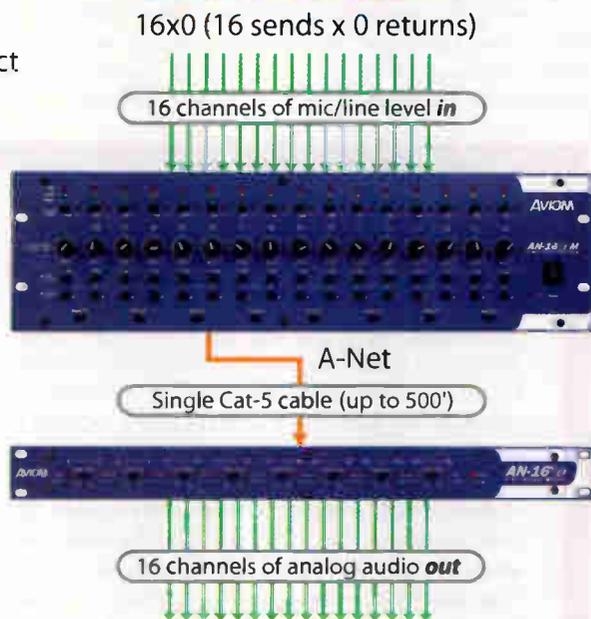
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Rays of Hope

How Dolby Sees the Future

A while back, I was down at Moscone Center (San Francisco) at the Fall IDF (Intel Developer Forum) finishing up a piece on Intel's HD Audio initiative ("Bitstream," November 2004). Near the end of the shindig, Dolby Labs announced a follow-on consumer drive that continues its ongoing push to brand every piece of IP it holds dear.

To me, the interesting thing about this announcement is not the initiative itself, but what I see as Dolby's continuing push to enhance interoperability. By hawking its brands, the company reinforces its power in the CE marketplace, and, in turn, that strengthens its ability to control the ad hoc standards that underlie much of the A/V CE gear that we take for granted. So this month, I'd like to give you a glimpse into Ray's World and how Dolby's insistence on quality control is a positive force in the world of audio production and consumption. [*Of course, since OMas wrote this, Dolby went public in a very public way. The consumer push was under way long before the announcement.—Eds.*]

In the Hindu pantheon of gods and other celestial beings, one entity can have multiple aspects. In the Dolby pantheon of consumer brands, its intellectual property also has multiple aspects—three to be precise:

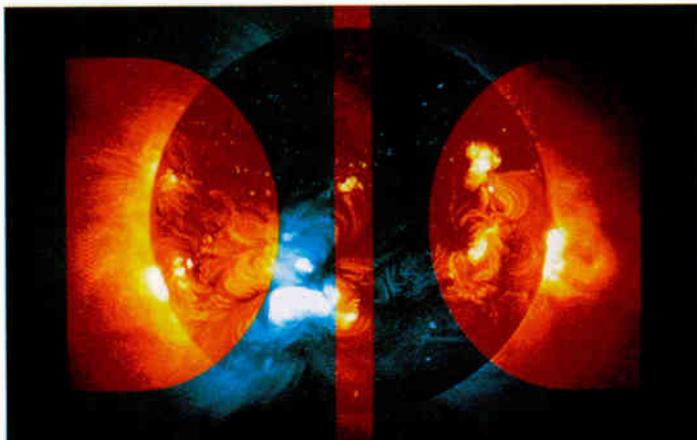


PHOTO COLLAGE: LIZABETH HEAVERN

technology-driven feature sets, reliable quality and overarching compatibility. The last two are constants, but, given its long list of intellectual property that has become entrenched in the CE marketplace, Dolby's consumer marketing folks can reach into the IP basket, grab a handful of tech—including Dolby Digital Plus, MLP, Dolby Surround Pro Logic II, Dolby Virtual Speaker or Dolby Headphone—and bundle them into a new brand that will speak to some segment of the buying public at large.

According to Greg Rodehau, Dolby's director for PC technology marketing, the company's emphasis on quality and predictability makes it "possible to have compelling audio capabilities on the PC." The newly

Bag of Tricks

For your inspection, here's an item from Waves' consumer division: If you've had any seat time with Waves' Renaissance suite, then you've probably listened to Ren Bass, its second-generation MaxxBass plug-in. Those same psychoacoustic subharmonic synthesis smarts appear in a range of well-received CE offerings from Altec Lansing, Microsoft, Samsung, Sanyo and Sony. Last year, the folks at Waves were nice enough to send me one of them. Its Home MiniWoofer is a 7-inch cube (think Auratone) that weighs less than six pounds. This mains-powered widget is designed for bass-anemic playback systems such as TVs, tabletop entertainment systems and computers.

From the sound of it, MaxxBass' juju is a good bit more advanced than the original Model 100 from dbx that I worked on as a callow youth. If I recall correctly, that beast used a surprisingly simple analog/digital hybrid circuit to

provide rough-and-tumble low end suitable for the disco dreck—the musical hallmark of the era. Hey, in those days, we all got away with lots of things—like polyester shirts and el cheapo subharmonic synths—that we wouldn't be caught dead in today.

Anyway, the woofer includes the now-standard signal sensing, "auto" power switch, "phase" reversal switch and power receptacle connector for the soap-on-a-rope power supply, all on the back. It also has gain and synthesis knobs that, if set carefully, provide satisfying bottom while naturally filling in the hole between the lowest octave of my generic computer speakers, Yamaha YST-M101s, and the onset of overt woofing. In fact, the MaxxBass algorithm provides an octave or more of perceived extension, while keeping dissipated power requirements and speaker box volumes low.

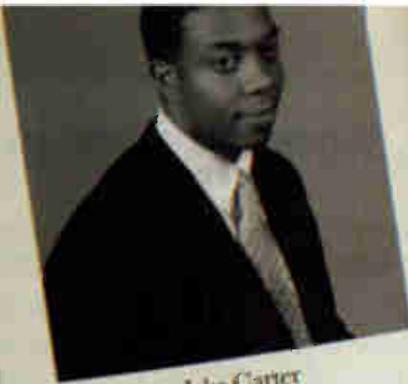
—OMas



Thomas Williams



Mandy Adams



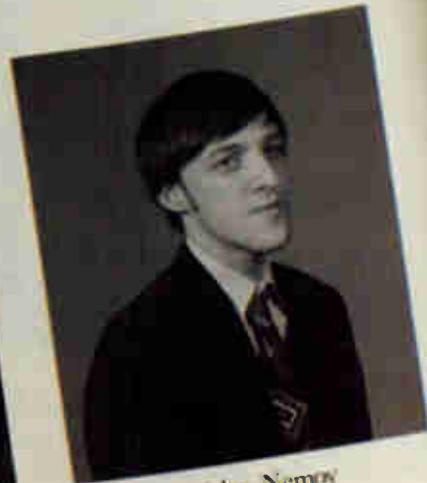
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BITSTREAM

announced branding, PC Entertainment Experience, is designed to be used with the TV-optimized, “10-foot user interface” known as Windows XP Media Center Edition. For the PC Entertainment Experience, Dolby has provided “system-wide access [to Dolby’s technology] for the very first time...through integrated audio on the motherboard.”

Let’s take a look at some of the items in Dolby’s IP basket.

Dolby Digital Plus: At last year’s NAB, Dolby announced this “enhancement of traditional Dolby Digital designed to accompany future video broadcasting formats,” according to a company release. The more scalable Plus reworking of the AC-3 codec is “designed to meet the four major qualifications of a next-generation broadcast audio codec: backward compatibility, spectral efficiency, cost savings and compatibility with future formats.”

Dolby Headphone: Released in 2000, Dolby Headphone is a multichannel-to-binaural convolver. It models a calibrated listening environment that simultaneously affords excellent computational efficiency with fairly convincing phantom imaging of a variety of program material and pincé shapes—no small feat. In addition to processing multichannel sources, it also handles 2-channel material, running it through, as Rodehau explains, the “Pro Logic II decoder [to] expand stereo content into surround over headphones.”

Dolby Virtual Speaker: Released in 2002, Dolby Virtual Speaker is an über-Schroderizer, a convolver that does for two loudspeakers what Dolby Headphone does for, um, headphones, though not as successfully. Let it be known that this is a devilishly difficult task, which makes it all the more remarkable that the listener can enjoy a somewhat wide range of locations relative to the stereo speakers and still experience a satisfying “surround” soundfield.

THE NEW STUFF

New branding initiatives include the Dolby PC Logo Program. Here’s what Dolby had to say about these packages.

Dolby Sound Room: “Users can enjoy a personal Dolby surround sound experience from the very best seat in the house without a complete 5.1-speaker system. Includes Dolby Digital, Dolby Headphone, Dolby Virtual Speaker and Dolby Pro Logic II technologies.”

Dolby Home Theater: “Enjoy a true 5.1-speaker home theater surround sound experience that places you, your family and friends right in the middle of movie action. Dolby Home Theater immerses

"I Switched"

Who: Ray Benson

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

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

Why He Switched to Studio Precision 8 Bi-amplified Direct Field Monitors:

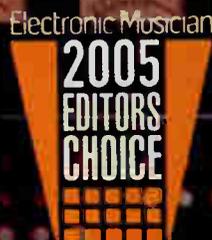
"Flexibility and accuracy are imperative when tracking and mixing—and that's what I get with the Studio Precision 8s. The easy-to-use tone controls allow me to work in different environments without sacrificing accuracy or the monitors' pleasing sound. And compared to many 'industry standard' speakers, the Studio Precision 8s have proven to be more sonically reliable, and they deliver greater dynamic range. I switched . . . and my ears are glad I did!"

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you in music and gives you the power to create DVDs with Dolby Digital technology. Includes Dolby Digital, Dolby Headphone, Dolby Virtual Speaker, Dolby Pro Logic II and Dolby Digital Stereo Creator.”

Dolby Master Studio: “The ultimate set of audio presentation capabilities designed to bring your entertainment to life and give you the power to author DVDs with Dolby Digital technology. Amaze family and friends with 7.1 channels of surround sound—for the most natural and engrossing entertainment experiences possible from DVD movies, music, games or broadcast television. Or create your own dramatic presentations and home videos on DVD with true-to-life Dolby Digital audio. Includes Dolby Digital, Dolby Digital Live, Dolby Headphone, Dolby Virtual Speaker, Dolby Pro Logic II and Dolby Digital encoding.”

Now let me say that not everything Dolby Labs does is crystalline, flawless and straightforward. Its dealings with the pro audio community with regard to the DVD-Audio format, in my mind, leaves a great deal to be desired in terms of “truth in advertising.” Nonetheless, the company, for the most part, has the best interests in mind of the public and the content producers that feed the distribution

channels. This is not altruism; it's simply good business and engineering practices at work, and here's where the other two aspects of Dolby come into play: quality and compatibility.

Len Layton, senior VP at PC motherboard audio component vendor C-Media Electronics, told me that Dolby's role in the CE industry has been very positive. “They act as a last quality-control check” before a product goes out to the marketplace. C-Media has squished Dolby's AC-3 encoder into a software version, a driver for its onboard “codec” suitable for CE applications. One of those CE brands is Dolby Digital Live, a highly optimized real-time encoder with very low CPU utilization. Another is Dolby Digital 5.1 Creator, another version of its AC-3 encoder, available in low-cost DVD authoring packages suitable for the shelves at Wal-Mart.

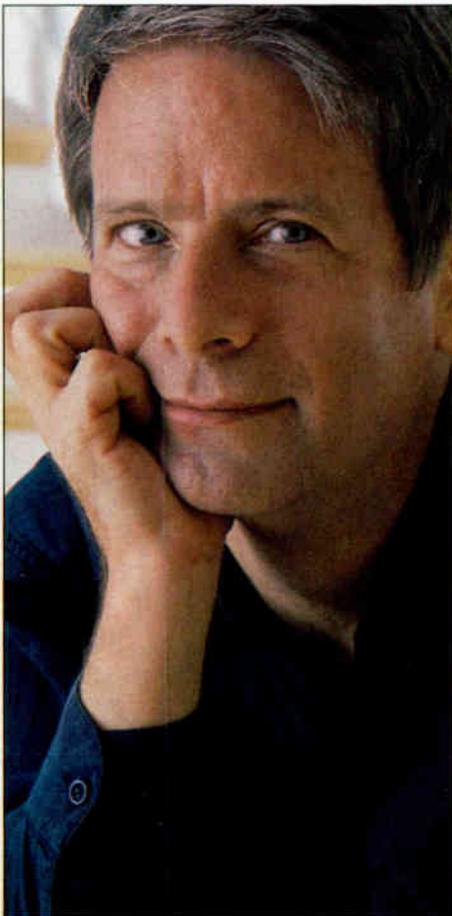
Dolby's PC Entertainment Experience, as with all of its re-branding efforts, will make it easier for consumers to purchase an Intel-based PC that meets their expectations for a multimedia hub.

Granted, modern hardware may be up to the task, but a secure and easy-to-use package is definitely a stretch for the operating system that most PCs are

saddled with. “While the Media Center devices resemble somewhat stylish stereo components that could fit easily into a home entertainment system, they still require home networking that's on the sophisticated side,” opines Jay Greene, Seattle bureau chief for *BusinessWeek*. Indeed, his understatement illustrates why home A/V installers are salivating at the thought of all that installation and, more importantly, ongoing maintenance revenue.

Dolby's Rodehau uses the word “credibility” to describe one of the qualities that its initiative confers on PC manufacturers, and, in the crowded world of consumer electronics, that credibility is as good as gold. I can't help but think that all this flurry of marketing activity may have something to do with Dolby's recently announced IPO. Nonetheless, the commoditization of advanced audio processing and easy-to-use delivery of that power to consumer desktops will have a significant impact on our industry's long-term services mix, so plan for it and don't cry if you get caught off-guard. ■

OMas promises to finish his ongoing “geek speak” dictionary next month. Really.



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World Radio History

Tools of the Trade



GENELEC 8130A DIGITAL MONITORS

Genelec's (www.genelec.com, \$995 each) 8000 Series monitors feature 192kHz/24-bit digital audio interfacing, AES/EBU digital (single and dual-wire) and analog inputs, and automatic bit and sampling rate detection. The aluminum enclosure has a 5-inch woofer and ¾-inch tweeter powered by two 40-watt amps. Frequency response is 58-20k Hz (± 2 dB); peak SPL is 108 dB/pair. Extras include new crossover filters and the customary bass tilt, bass roll-off and treble tilt room response controls. Up to eight 8130As can be chained in digital or analog mode for surround applications, and the system is compatible with Genelec's 7050A subwoofer.



HUSH ATX SILENT COMPUTER

Designed for on-air and audio production rooms, the Hush ATX PC (dist. by Logic Supply, www.logicsupply.com/radio) uses convection cooling for silent operation. The PC has a fanless power supply, large heat sinks and can be configured with

a choice of Intel CPUs; multiple RAM, storage and drive choices; dual 8-inch PCI slots; four USB ports; and optional FireWire interfacing.

TASCAM DM-3200

Big, full-featured and affordable describes Tascam's (www.tascam.com, \$3,799) DM-3200 digital desk. Based on the DM-24, the 48-channel console operates at up to 96 kHz/24-bit, carries 16 XLR balanced mic/line inputs with phantom power and includes interface software for Mac OS X or Windows. It has 17 touch-sensitive 100mm motorized faders, and includes 8-channel ADAT I/O,



24-channel TDIF I/O and two expansion slots for DM-24-compatible I/O cards. Each of the 32 channels offers 4-band parametric EQ and dynamics, 16 buses and eight aux buses. There are four stereo effects or two 8-in/8-out surround effects.

MONSTER I STUDIO LINK CABLES

A high-end option to patch audio directly to computers, the balanced 12-foot iStudioLink mic and instrument cables from Monster (www.monstercable.com) terminate to an 1/8-inch gold-contact connector. The mic cable features a female XLR, twisted-pair

construction, special copper windings and a Duraflex jacket. The instrument cable has a ¼-inch jack, dual solid-core conductors and heavy-duty strain relief.

GENERAL VIBE VECTORSECTOR

Retro-loving DAW music-makers will be interested in this General Vibe's (www.generalvibe.com, \$199) soft synth that recreates the Prophet VS' sound. Not only does it include reconstructed versions of the original factory presets, but it adds polyphony (up to 16 voices), expanded control ranges and additional modulation routings. VectorSector includes 100 presets and is available now as a VSTi plug-in on Windows XP; Mac OS X (AudioUnits and VST) hosts are scheduled to be released in mid-February.

UEBERSCHALL LIQUID SAXOPHONE/ELECTRIC BASS

These new VST instrument plug-ins from Ueberschall (www.ueberschall.com, \$199) use Celemony Melodyne technology to create a new class of virtual instruments. The samples, played by top studio musicians, can be

edited, stretched, quantized and reshaped using the Melodyne editor, which is included within the plug-in. Once edited, the samples can be imported into the standard version of Melodyne using the Melody Manager.

DISCRETE HEAVY METAL DRUMS

This new collection of hard rock and heavy metal drums features drummer Tony Morra recorded in the cavernous Big Boy room at Nashville-based Sound Kitchen by engineer Steve Marcantonio. The collection from Discrete (www.discretedrums.com, \$249) offers more than 4 GB of individually recorded drums on 13 tracks, crossing a variety of hard-hitting styles and tempos. Separate hits, crashes, stops and starts are included, allowing the user to craft a unique track.

The individual .WAV files are easily imported into any DAW for editing and assembly.

ADK AP-1

ADK's new Custom Shop (www.adk-microphones.com, \$1,195) offers a mic preamp with a twist. The AP-1's input transformer is mounted on a removable circuit board. By conforming to the API 2520/Jensen 990 footprint, other new and vintage op amps can be swapped. ADK will offer optional input transformer daughter boards using such transformers



as the Lundahl 1538xl, Jensen JT-110K-HPC and Sowter API 2622 vintage re-creation. ADK will also assist users who want to make custom boards for other transformers. Other features include ¼-inch DI, impedance loading switch, phantom power, polarity reverse and -20dB pad.

ALIENWARE MJ-12M 7700

Perfect for portable PC production, this compact yet beefy laptop from Alienware (www.alienware.com) features a 17-inch screen, Intel Desktop 915 PCI-Express chipset, dual hard drives with RAID 0 or 1 support, dual optical drive slots and a 7-in-1 media card reader. Other features include up to 4 GB of RAM, four USB 2 slots, 802-11g and Bluetooth wireless support, a high-performance cooling system and four built-in speakers with subwoofer. Prices start at \$2,400.



TELEFUNKEN R-F-T M16 MIC

Telefunken USA (www.telefunkenusa.com, \$1,399) now offers an affordable mic incorporating the same tube technology and renowned craftsmanship as its pricier models. The handmade, multipattern R-F-T M16 offers high-end sonic performance and features a circa 1980, new old-stock Phillips JAN 12AX7WA tube and dual gold-sputtered, 6-micron center-contact capsule. The system includes a remote-controlled, a nine polar pattern power supply, shock-mount, 25-foot cable and wooden mic box.

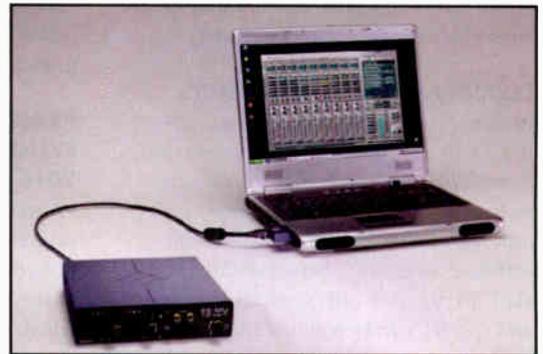
CAD E-300²

The latest studio condenser from CAD (www.cadmics.com, \$699) features dual 1.1-inch gold-sputtered diaphragms, stainless-steel/brass dual-stage pop/EMI filter and a custom elastomer shock cradle system. The E-300² has cardioid, omni and figure-8 patterns; automatic power shut-off to retain battery life; highpass filter; and -20dB pad. The mic can be phantom-powered or used remotely for six hours via a rechargeable 9-volt nickel-hydride battery. Shock-mount and carrying case are included.



CAKEWALK PROJECT5 V. 2

Project5 Version 2 (www.cakewalk.com) offers a streamlined user interface, new high-performance engine, integrated multitrack audio, multipad pattern triggering, loop reconstruction, dynamic arpeggiator and a multimode sampling synthesizer. To enhance workflow, the interface offers all views and tools from a single screen. In addition, the engine has



been optimized for live performance use. Retail: \$429, with upgrades available.

E-MU 1616M DIGITAL AUDIO SYSTEM

Portable audio just got easier with E-mu's (www.emu.com, \$499) 1616M CardBus Digital Audio System. The interface comprises a PCMCIA card and compact MicroDock audio/MIDI interface, offering up to 192kHz/24-bit conversion. The MicroDock's 16 channels include analog I/O, ADAT and S/PDIF I/O (switchable to AES/EBU) and two phantom-powered mic/line/hi-Z inputs. Also included is the E-DSP 32-bit multi-effects processor and production tools bundle with Cubase LE, Wavelab Lite, Ableton Live 4 Lite, AmpliTube LE, T-Racks EQ, DiskWelder Bronze and Proteus X LE Desktop Sound Module.

SONY OXFORD RESTORATION TOOLS

Sony's (www.sony.com/profes sional, \$1,195) latest Oxford plug-in suite offers three ways for Pro Tools users (Mac/PC) to clean up their dirty audio. DeBuzz features a strong and weak mode for minimal intrusion into the signal, DeNoise captures the noise fingerprint or can track it automatically, and DeClick combines the functions of pop and click removal, making it able to remove large pop/clicks and barely perceptible crackles.

JOEMEELK JM SERIES MICS

Dubbed the "Meekrophones," JoeMeek's (www.joemeek.com) collection of four mics are designed from the ground up and feature the JM27, JM37, JM37DP and JM47. The JM27 is a small-diaphragm microphone (cardioid, \$129). The JM37

(cardioid, \$219), JM37DP (cardioid and omni, \$249) and JM47 (cardioid, \$299) are large-diaphragm condenser models.

LEXICON MX200 MULTI-EFFECTS

Bridging the hardware/software DAW processor gap, Lexicon's (www.lexiconpro.com, \$299) MX200 combines a single-rackspace, 2-channel stand-alone effects unit with a VST interface for use with software recording platforms. Connected via USB, the unit offers reverb, dynamics and special effects within any compatible VST platform workstation, allowing the hardware unit to be fully automated and recalled. The unit has 99 factory presets and 99 slots for user-defined effects.

MOTU SYMPHONIC PLUG-IN

MOTU's (www.motu.com, \$295) Symphonic Instrument is a cross-platform plug-in featuring 8 GB of quality orchestral sounds. The instrument can be used with any compatible host application (VST, AudioUnits, DXi, MAS and RTAS), where users can load up to 16 different instruments per instance of the plug-in to create ensembles of any size and scope. For advanced applications, users can load the sounds directly into the company's MachFive universal sampler plug-in. The instrument includes a built-in convolution

reverb and easy-to-use controls that let users adjust each individual instrument.

PRINCETON DIGITAL/ EVENTIDE PLATE 2016 REVERB

Princeton Digital (www.princetondigital.com, \$199) has unbundled its Plate 2016—a re-creation of the Eventide SP2016 Plate Reverb—for release as a Pro Tools TDM plug-in. Plate 2016 supports sample rates of 44.1/48/96 kHz and promises the same quality sound as the original hardware unit that helped define a generation of ambience-producing digital reverbs. System requirements include Pro Tools 6 or later, Mac OS 10.2.4 or later, HD or Accel hardware and iLok for a demo and full authorizations.

ABLETON OPERATOR

Ableton (www.ableton.com, \$149) has released Operator, a new soft synth instrument optimized for use inside Live 4, Ableton's real-time music production platform. Operator's core voice architecture comprises four oscillators and a resonant multimode filter, allowing subtractive and frequency modulation synthesis. A set of



presets, sorted by category, get the user started. Macro controls can then modify overall sonic character. Operator's central display provides advanced tweakers access to graphic envelope editors and other advanced controls.

WAVES Q-CLONE

Waves (www.waves.com) takes convolution to the next step with Q-Clone, a plug-in that accurately re-creates the shape and phase response of any hardware EQ. The process turns your hardware EQ into a control surface that can be saved and then used again on another channel. Once the EQ is tweaked, the sound is captured, sampled and saved to the channel. The plug-in can then be instantiated on another channel where the process is repeated. Changes to the EQ are easily recaptured via an Add button, which puts the plug-in into Update mode.

Upgrades and Updates

Tascam has announced that the **Larry Seyer Acoustic Drums library**, first created exclusively for GigaStudio 3, can now be accessed at www.tascamgiga.com. In addition, **FW-1884 V. 1.40 driver installers** for Windows XP and OS X are available for download from the Tascam Website (www.tascam.com/downloads)...**SPL's** (www.spl-usa.com) **SMC Surround Monitor Controller 2381** now comes with a new front panel and a larger volume knob, complementing the design of SPL's new controller series (SMC 2489 and MTC 2381 monitor and talkback stereo controller)...**Edirol** (www.edirol.com) has released **beta 64-bit drivers** for several devices in support of the latest hardware and software for Windows-based computers. Devices supported include the UA-1000 and the UA-25 USB audio interface...**Submersible Music** is shipping the **ZoroPack I DrummerPack** for use with its popular DrumCore

software (www.drumcore.com)...**URS** (www.ursplugins.com) has released the **Classic Console Equalizer Bundle VST** versions for Windows XP and Mac...**SSL** (www.solid-state-logic.com) offers new enhancements for its **C100 digital broadcast console**, including full 5.1 panning from the touchscreen and I/O expansion for the Centuri core...The latest product from **Sonic Studio** (www.sonicstudio.com), **SonicStudio•DDP for Mac OS X**, is now available as a limited-time free download...**IK Multimedia** has lowered the prices of its **amp and effects modeling plug-in**. **AmpliTube 1** is now only \$299 while **AmpliTube LE** is \$199...**Apogee Electronics' V. 2 firmware update** features Advanced Option Routing for the AD-16X and the DA-16X, with X-HD or X-FireWire option cards installed. The release is free from www.apogeedigital.com...**Samplitude** ([\[www.samplitude.com\]\(http://www.samplitude.com\)\) is now shipping **Samplitude V. 8.1**. This version features Surround Sound, Surround Effects and Object Sound \(Samplitude Professional only\)...**Producer PHASE 88 Rack FireWire** and **EWS MIC2/MIC8 FireWire audio systems** from TerraTec \(\[www.terratec.com\]\(http://www.terratec.com\)\) now feature significant enhancements including optimized ASIO latency and MIDI-controlled stand-alone mode...**ILIO** \(\[www.ilio.com\]\(http://www.ilio.com\)\) releases new **S.A.G.E. Xpanders for Spectrasonics Stylus RMX** virtual instrument. Each Xpander comes with the complete groove collection, plus a special bonus ILIO section and a library of new Stylus RMX multi-patches. ■](http://www.</p>
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In designing Aurora, our goal was to design the best possible A/D and D/A converters. Price was not a consideration. The result? Ironically, Aurora 8 and Aurora 16 are professional mastering-quality converters with performance that rivals products that cost two to three times Aurora's price.

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Of course you can control Aurora from its ergonomic front panel. Granted, our front panel is not as complex-looking as some converters, but we thought you'd appreciate Aurora 16's 16 channels of A/D and D/A in a single rack space. So we put the most-used controls and metering on the front panel and designed Aurora to be controlled and monitored in greater depth using the Lynx AES16 in your Windows or Macintosh computer.

This is a major advancement in converter operation. In conjunction with the AES16, you have access to all Aurora front panel controls, plus added routing, level, and monitoring capabilities. This means that Aurora does not need to be installed adjacent to your mixing station. In fact (another benefit of SynchroLock), you can install and control Aurora converters up to 500 feet away, in the rafters, by the stage, in a closet, or on the truck.

Think you have enough wires in your studio already? Go wireless. Aurora's front panel IrDA port provides control using an infrared-equipped laptop or handheld PocketPC. The MIDI ports allow equipment already in your studio to provide remote control. Need more than AES/EBU and analog ins and outs? No problem. Aurora's open architecture includes the LSlot™ bay on the back panel. You'll be able to add ADAT, Firewire, and other current and future interfaces.

Aurora 8 and Aurora 16 are now available at select pro audio shops. For more information about Aurora and a list of stocking retailers, visit the Aurora website at www.lynxaurora.com.

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Mackie Onyx 1640 Analog Mixer

Pro-Level Desktop Console With FireWire Card Option

Mackie's VLZ mixer set the standard in desktop consoles for a generation of studio engineers and live musicians. In 2004, Mackie introduced a new generation of compact mixers designed as a step-up to its VLZ Pro family. The new Mackie Onyx mixers offer improvements on hallmark Mackie technologies in addition to new ones designed to bring analog mixing into the high-resolution digital fast lane.

Reviewed here is the flagship Onyx 1640, which like the ubiquitous 1604 VLZ Pro, is a 16x4x2 mixer with six aux sends and a host of features—new and old.

POWERFUL, CLEAN PREAMPS

The 1640 comes with 16 great-sounding redesigned mic pre's that would cost much more if purchased separately or in pairs. The preamps have a 123dB total dynamic range, -129.5dBm EIN and 0.0007-percent THD. The input trims work a little differently than the VLZ line, as it is designed for more real-world gain settings, handling from +22dB line-level down to micro-volt-level signals from a ribbon mic without adding noise.

I found that concept hard to believe until I tried them with every microphone I could get my hands on during the past two to three months. They really don't add *anything* in terms of system noise, with plenty of usable gain. Even with a half-dozen open mics in a typical concert hall setting, the results were amazingly quiet. A Royer SF-12 ribbon mic delivered superb results with these preamps, as did my trusty B&K 4006s and a host of other large- and small-diaphragm mics. As a longtime VLZ Pro mic preamp user, I found the pre's worth the upgrade cost alone—they are the cleanest, smoothest and quietest you'll find just about anywhere at this price.

A 48-volt phantom power on/off switch (with its friendly bright green LED) is provided for each XLR input, something I've wanted for a long time. Occasionally, we all have to run something odd or unorthodox into those XLR jacks (in spite of the ¼-inch line-in jacks provided), so it's very comforting to see, at a glance, which inputs have phantom power present and which don't.



I/O ENHANCEMENTS

There's no longer any need to use the TRS insert jacks as feeds to external recorders; Mackie has added two DB-25 connectors—eight balanced channels for each—to easily connect to the device of your choice. Twelve channels are featured on the 1220, and 16 channels on the 1620 and 1640. These balanced direct outputs are post-channel gain, but pre-EQ, pre-insert and pre-fader, giving you all the flexibility of individual tracking without using unbalanced partial insert plugs. The first two channels also have switchable hi-Z inputs for acoustic guitar pickups and other devices without a direct box—a bonus for anyone who regularly uses these things.

IMPROVED EQ, AUXES AND MORE

Moving past the standard low-end (75Hz) cut switches down to the EQ section, Mackie has provided another much-requested feature: true hardware EQ bypass switches, useful for audiophiles on a budget. (There *are* times when no EQ is good EQ.) Still, the Cal Perkins-designed EQ section is another big improvement over the old VLZ EQ. There's more info on this at www.mackie.com, but the stated goal was to use the classic "British" approach, which offers a smooth musical sound and adds greater boost/cut (± 15 dB) capabilities to make it suitable for a wider range of applications.

Six knobs provide ± 15 dB control at 12k

(high), four controls for high-mid (400 Hz to 8k Hz) and low-mid (100 Hz to 2k Hz) pots, with a frequency select pot for each. Down at the low end is an 80Hz control that works with the low-cut switch, allowing for bass boost without low-end gunk. Specs tout minimum phase shift, making the entire EQ section more musical. I did find it to be a more traditional, usable EQ section, especially compared to the old VLZs, when I had to use it at all. It's highly flexible when in and with the defeat switch, and completely invisible when out.

Further down the channel strip is the revamped aux section, which is now below the EQ. The 1640 features six discrete aux sends with individual pre/post switches and solo control. There's a dedicated adjustable master control for each, which is useful for monitors, effects, video feeds and more. (The Onyx 1220 offers two aux sends, while the 1620 has four.)

Rounding out the channel strip is the constant loudness pan pot, mute switch, channel fader (60mm linear taper) and four signal level LEDs. More functional than the old "activity" LEDs, you now have 20, 0, +10 and OL (overload) to show if things are too hot.

Below the channel fader is a Solo button, which is now at the very bottom where I think it belongs. You get an instant feel for this configuration, quickly finding channels and Solo buttons as needed. It's a simple but

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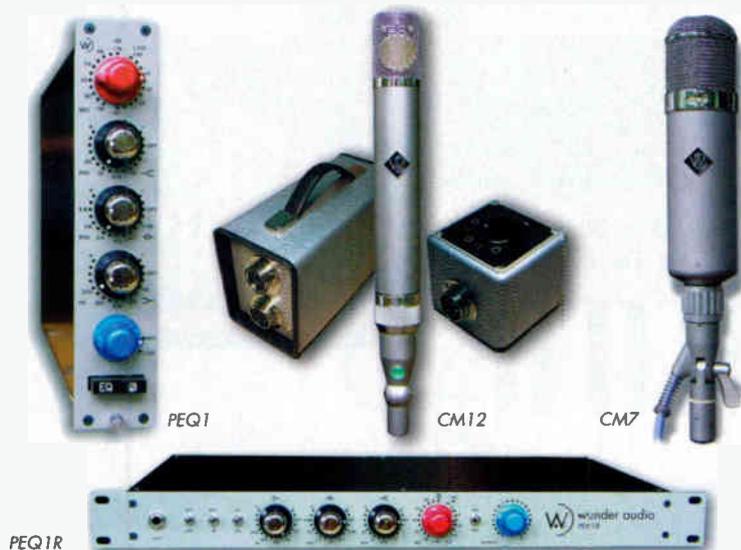
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huge improvement from the old, tiny Solo button hiding among the sub-assigns.

Onyx mixers now sport a dedicated Talkback section with a built-in mic and a separate XLR jack for an external mic. You no longer need to tie up an input channel for a talkback mic. There's a spring-loaded Talkback button, and the talkback signal can be routed to the control room/phones output to aux 1/2 or both.

Mackie confirms that the new "Planet Earth" power supply will allow Onyx mixers to work anywhere in the world. The 1640 ships with 220V and 110V IEC power cables—a real rarity these days as most printers don't even come with their own USB cables.

FIREWIRE OPTION

The real buzz with this mixer is the FireWire card (sold separately). It is another huge step up for location recordists, sending 16 channels of digital audio (and another stereo mix from the L/R bus) at 24/96 to the computer platform and software of your choice. Whether on the road or in a project studio, the card is an easy way to track right out of the preamps to a digital recorder. Mackie includes its Traktion software (bundled free with the FireWire card; stand-alone retails for \$80) on the driver CD-ROM. Installation was a breeze using two screws and one edge-connector cable.

You can monitor a two-mix out of the computer via the FireWire card back into the 1640 via the control room/phones source panel, choosing among main mix, tape, subs 1-2, 3-4 and FireWire option.

Probably the only issue that Mackie has yet to address is limiting the FireWire sends to pre-EQ and pre-fader. I'd suggest a user-changeable upgrade for the card to get around this.

PRO-LEVEL POWER

Mackie has truly addressed the needs of the pro user with Onyx's many new features. The new preamps, redesigned surface, digital output and individual phantom power buttons puts this mixer head and shoulders above its predecessors. Other than the FireWire card limitations mentioned above, there's not much else you'd need to add to this no-compromise mixer with an AD/DA card option. Sweet!

MSRPs: Onyx 1640, \$1,539; FireWire card, \$449.

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

Joe Hannigan runs Weston Sound & Video in Philadelphia.

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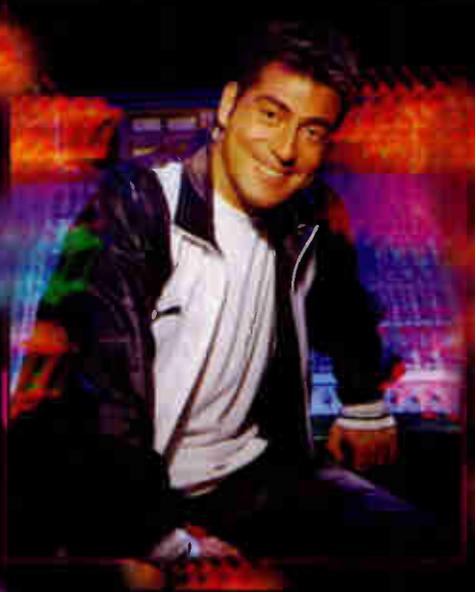
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Apogee Rosetta 200 Stereo Converter

Hi-Def Unit Chock Full of Mastering Features

The Rosetta 200 (\$1,995), Apogee's successor to the PSX-100 and Rosetta's AD namesake, is an "investment-grade quality" piece of studio equipment that will continue to pay dividends every day. The latest in thinking from Apogee on stereo 24-bit/192kHz A/D and D/A converter systems, the 200 starts off with many of the features and the same converter quality as the Rosetta 800 8-channel unit, while adding full channel metering and MIDI I/O and S/PDIF connections. The 200 also comes with the new and unique CODA audio finishing module, an original and irresistible set of analog/digital processors unavailable with other AD/DA—even those made by Apogee.

but is not required for loading downloaded software updates from a computer via the unit's rear panel MIDI ports. A USB port seems better for updating as most computers have them and not a MIDI interface.

TAKE ME TO THE CODA

CODA comprises three separate processes: sample rate conversion, Apogee's UV22HR word length reduction algorithm and Aptomizer. Built-in real-time sample rate conversion is a lifesaver when making reference 44.1 CD copies of work done at 96 kHz or incorporating samples, loops, audio clips or sound effects into your session that are not at the same rate. You can sample rate-convert digital audio from any single

IN THE STUDIO

My D/A tests started by connecting CD and DAT machines via S/PDIF. An Analog Devices AD1852 chip handled D/A conversion within the 200 and my DATs. Mastered CDs that I had mixed revealed new information and detail. The 200's D/A was clearer throughout the whole frequency range, with a wider stereo image, a more solid low end and high-frequency extension—but not brighter.

At a mastering facility where I thought quality differences—if any—would be easier to hear, I compared the 200 to a \$5,000 Prism ADA-8 system. The digital sources to the 200 and the Prism were clocked from a Z-Systems Z-3SRC. The differences were



SPECIAL FEATURES

The Rosetta 200 accepts and outputs all formats of digital audio including single- and double-wire AES for 88.2 through 192kHz rates and either ADAT S/MUX or S/PDIF. In fact, you can convert between S/MUX and S/PDIF. Sample rates are switchable between 44.1, 48, 88.2, 96, 176.4 and 192 kHz.

Apogee's Intellilock uses a "read" clock with a wide acceptance range to quickly lock to any incoming digital audio. Once a two-sample audio buffer is filled, a second low-jitter "write" clock re-clocks the buffer's output to the converters. Lock is instant with minimal latency. Sync source or clock can be set to internal or derived from the rear panel word clock BNC I/O connectors (now with switchable 75-ohm termination). You can clock from any incoming digital sources presented to the rear panel's S/PDIF, AES/EBU, ADAT optical ports or from the expansion I/O card slot.

There are three optional expansion I/O cards (\$595 each) available: the X-HD or X-Digi-Mix cards for direct connection to Pro Tools|HD or MIX Plus Core cards, and the X-FireWire card for Mac OS X or Windows XP host-based DAWs. The X-FireWire card enables full MIDI interfacing to a computer

input to another digital output and check quality on the analog outputs. In my testing, I could not detect any change in sound quality when sample rate converting—ever.

For CD mastering, the 200 comes with UV22HR, Apogee's 24 to 16-bit dithering process, allowing 16-bit CDs to retain more of the quality and resolution of their 24-bit masters. Aptomizer is a kind of analog normalization with a Learn mode in which the maximum analog level is read and used to recalibrate the A/D input level, resulting in consistent -0.5dBfs digital levels.

In cases where the 200 is doing AD/DA for interfacing a piece of analog gear inserted into your DAW system, unity system gain is preserved by also adjusting the D/A calibration level simultaneously! But if you are using the 200 for your main DAW I/O, this is a bad idea because the analog output level of the D/A will go down/up along with the calibrated level of the A/D. There should be a way to unlink the D/A when using Aptomizer.

A separate processor from CODA, Soft Limit is an analog limiter that rounds off transient peaks for maximum -4dBfs levels using instantaneous attack and release times.

subtle: The Prism had a very slightly deeper bass or just more bass and possibly a little more high-frequency openness.

As a "torture" test, I set up a mix and purposely slammed the 200 with many "overs," letting Aptomizer learn the song's loudest moments. What normally is for me an ongoing process throughout a mix—tweaking the analog level to the A/D—now takes just one pass. When I kicked in Soft Limit, I got the hottest digital levels possible without applying any stereo compression.

READY FOR HI-DEF

I'm completely sold on this modern and worthy unit that is more than up to the critical task of A/D conversion. Besides the great sound of the converters, Aptomizer is a "level insurance policy," saving tedium and time in the studio. As a production tool, real-time sample rate conversion is great if you're a producer who always uses a 44.1kHz session rate because you like using 44.1kHz sample CDs; you can go 96 kHz—no excuses now!

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ALWAYS A SOUND DECISION

Tascam GigaStudio 3 Sampler

Increased Performance Plus VST Plug-In and ReWire Support

When it came out a few years ago, Tascam's GigaStudio (originally called GigaSampler) revolutionized sampling—and, arguably, commercial composition—by streaming samples off of hard drives instead of loading them into RAM. But recording time isn't the only precious resource with sampling, and new sample libraries pushed the platform's boundaries in ways that couldn't have been foreseen.

GigaStudio 3 addresses previous versions' shortcomings while adding some great new features. In terms of low latency and efficiency, Giga has always left the host computer's power largely untapped. GigaPulse, the new surround-capable convolution processor in Giga 3 (soon to be available stand-alone as a VST plug-in, as well), takes up that slack and then some.

In addition, Version 3 can host third-party VST FX plug-ins in its mixer, which has been expanded to 128 channels and 32 fader groups. With a sound card that's been updated with GSIF-2 drivers, you can run external sources through processors in the Giga mixer alongside the samples.

For applications in which Giga is shared with a digital audio sequencer on the same machine, Giga 3 can function as a ReWire slave, streaming directly into the host sequencer's mixer. A new Quick Edit feature saves you from having to open the more extensive stand-alone editing program, and features support for higher sample rates, improved MIDI efficiency, timing and more. Also, its redesigned interface makes more efficient use of the computer screen.

MAKE YOUR INTRODUCTIONS

I reviewed GigaStudio 3 Orchestra V. 3.04, which is the full \$599 retail version, but Tascam also offers two reduced versions: Ensemble (\$369) and Solo (\$199). Orchestra does not have a set polyphony limit, while Ensemble and Solo feature 160 and 96 mono voices, respectively.

That said, the minimum recommended system for GigaPulse is a 2.8GHz Pentium 4 running Windows XP. One of the systems used for this review, a 2.4GHz Pentium 4 that was originally put together to run



Flexible mic "placements" in GigaStudio 3's GigaPulse provide more variation in sample playback.

Giga 2, worked fine despite being slightly below spec. The other machine I used was a 3.4GHz Pentium 4, and as expected, it ran more GigaPulse instances.

These machines have standard 7200 rpm Ultra ATA and SATA hard drives, and I ran approximately 275 mono voices before glitching on both systems, which was good. The exception was that over-the-top glissandos sometimes caused rather strange echoes, but that only happened while testing the limits. Tascam reports that some users get more than 500 voices using SATA RAID arrays: Simple math confirms that possibility.

I worked with Giga 3 for about three months. During that time, I encountered some minor early version glitches—mostly in the mixer—but nothing that was repeatable or stopped the show. As Tascam is now on its fifth Giga update (V. 3.04), any obvious problems are gone. Most of the time was spent using Giga with orchestral libraries (Vienna Symphonic Library and some custom samples), but Giga has also become my go-to instrument for knick-knack parts, such as drums for a sound-alike, an acoustic bass part of an animated short and so on.

Even with Giga 2, you could get a lot of mileage out of a single computer loaded

with 1.5 to 2 GB of RAM. However, only a little more than 50 percent of that RAM was available for loading samples.

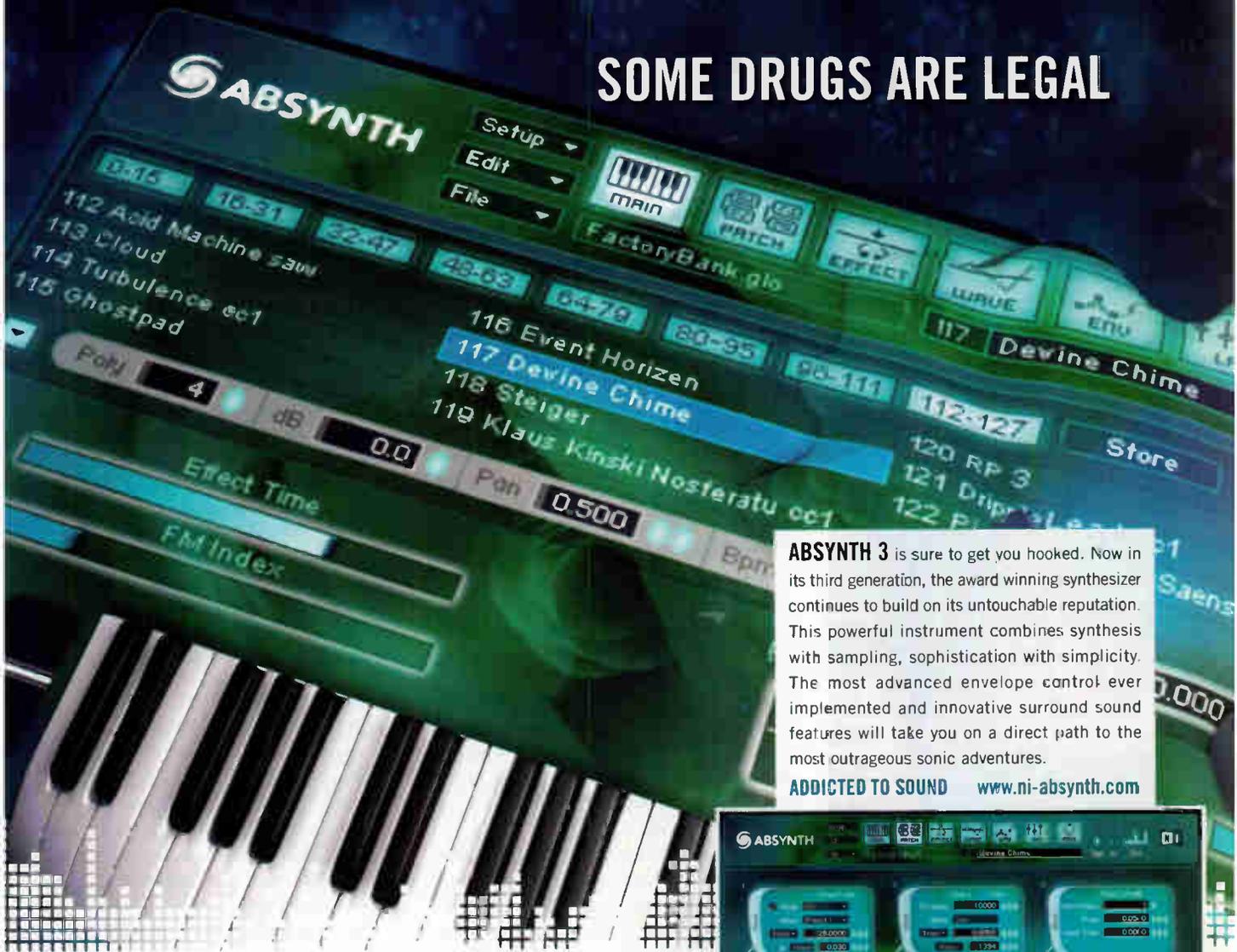
Giga 3's memory access has improved considerably. The review computer with 1.5 GB of RAM went from about 800 MB accessible to an impressive 1.07 GB in Giga 3—a 20-percent increase over Giga 2, which is what the 2GB machine previously achieved. For some reason, the 2GB machine's improvement is less dramatic, increasing about 10 percent to 1.18 GB, but it's still enough to load a few more instruments.

High-end users usually run Giga on multiple machines, partly for more polyphony—an issue that's largely solved in Giga 3—but mainly for memory access. Perhaps when 64-bit computing comes along, allowing access to terabytes of RAM, one machine could handle the same job.

FOLLOW ITS IMPULSE

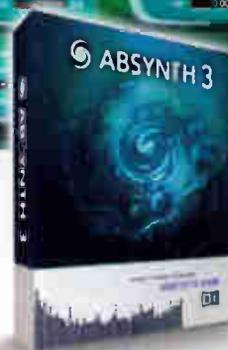
Like all convolution processors, GigaPulse can be a reverb or anything else that produces an impulse response. Sampled spaces are always startlingly realistic in these processors; for example, the new GigaPiano 2 uses impulses instead of piano samples to create the pedal-down and release/staccato resonance effects.

SOME DRUGS ARE LEGAL



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EQ Magazine
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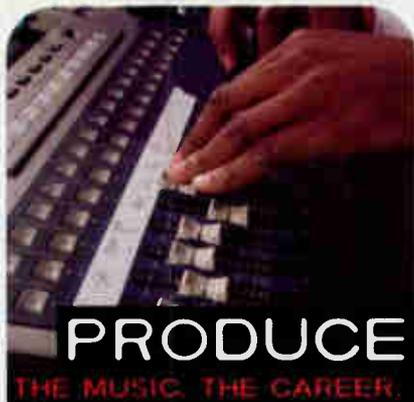


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Giga 3 comes with 30 different spaces, 12 of which are sampled from 18 different positions in a room with seven mics—a total of 2,405 impulses. You can pick and choose the mic/polar pattern combinations you're going to use and route them in stereo or up to 7-channel surround. The only limitation is that each mic-to-speaker path you activate uses more computer horsepower.

In addition to providing surround ambience, the multiple positions in the room-to-mic paths let you precisely place sounds. Using GigaPulse as inserts rather than sharing them on buses quickly eats up processing power, but it's a dramatic effect, especially on mono sources. For CPU efficiency, GigaPulse can crossfade the convoluted tail into a modeled tail after three seconds, at which point, the signal is too low to register a noticeable difference.

The multiple mic paths are split into surround, side and front path. In turn, each of these can be run through various sampled mics and effects impulses. GigaPulse comes with 25 popular mic models (many with selectable polar patterns), an exciter, various tube drive programs, Stereoizers and Surroundizers, a guitar neck-to-bridge converter and a Deboxinator. There are inverse programs that can be used to remove the character of the effects from each of the above.

With the caveat that static samples are never the same thing as the actual hardware, these programs are just terrific. The rooms that come with GigaPulse are also excellent. However, the medium hall, a staple for orchestral libraries, is a little rough for my taste. While it's well-sampled, I'm not wild about the hall itself. Instructions for importing user impulses are currently on Tascam's Website. Some of it is teaser demo material that's of limited use, but there's also a lot of excellent material, including four of Larry Seyer's Acoustic Drum kits and enough instruments to produce some serious music. The highlight of this feature is a baby-sized version of the Vienna Symphonic Library that includes all of the standard orchestral instruments.

The GigaPulse interface is clean and straightforward. Its single flaw, perhaps, is the lack of visual feedback to indicate when you're selecting mic-to-speaker paths—it's too easy to get tripped up and call up a path you didn't intend to select.

GigaPulse opens up some exciting possibilities for sample library developers to create a new category of programs. For example, Tascam sent along an absolutely killer library and Larry Seyer Drums. You can place the drums in different spaces with

GigaPulse by using its unique Perspective parameter to adjust the mic distances. The effect is just stunning.

This library starts out with a huge variety of excellent samples taken in great detail. For example, the snare strike positions move from the center to the edge of the drum across an octave on the keyboard; in addition, each strike position is sampled at different velocities.

SAMPLE SETS, LIBRARIES AND MORE

One of Giga's original innovations was implementing Dimensions, which use parameters such as MIDI controllers, velocity, keyswitches and note position to determine which samples are triggered. Giga 3 has 256 Dimensions or 128 in stereo. It's now possible to do many things such as crossfading between three complicated programs with the mod wheel, which would previously have exceeded the Dimension count. [Note: According to Tascam, the upcoming 3.10 ups the Dimension count to 32,768.—Eds.]

The new Intelligent MIDI feature integrates concepts of the Vienna Symphonic Library's Performance Tool into GigaStudio and has three functions: alternating between sample sets in the order you program, alternating between successive notes cut out of a repeated-note performance and using patterns you specify, and inserting a transition sample between two notes.

The original GigaSampler revolutionized sampling, and Giga 3's integrated convolution processor, GigaPulse, has opened up a whole new set of creative possibilities. In addition to being an efficient engine for running multiple path surround reverb programs, it can simulate anything that produces an impulse response—effects, spaces, instrument bodies, mics, amps and more—and those impulses can be integrated right into the sample programs.

Giga 3 also has more of everything that users ran out of in Giga 2. It loaded 10 to 20 percent more programs and delivered about 70 percent more polyphony from the same test machines that were running Giga 2—very efficient. It has more dimensions, more mixer inputs, more MIDI channels and it makes better use of screen real estate.

In short, it's the current state-of-the-art in sampling. GigaStudio 3 took a long time coming, but it was well-worth waiting for.

Tascam, 323/726-0303, www.tascam.com. ■

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

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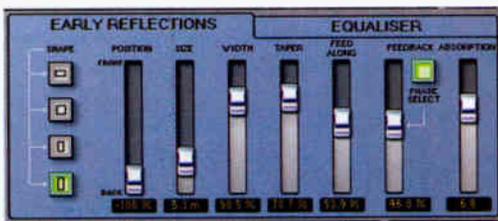
Sony Oxford Reverb Plug-In

Add Ambience to Your Mix With Versatile Emulations

Sony's Oxford division has come out with a reverb plug-in that offers some of the things you'd expect from a verb with some excellent new additions. As you'd expect, the standard churches, chambers and emulations of other popular spaces head up the menu, but Sony has chosen to approach the ambience-building process in a new, fresh way.

If that's not enough, the company has also included a special version of the acclaimed Oxford EQ right into the interface. The Oxford Reverb GUI opens in a large window, with all of the controls immediately accessible with one clickable layer. This layer gives you access to the 5-band, Type 1 Sony Oxford equalizer, which is configured for the reverb's input. The interface is slightly intimidating at first glance. I strongly recommend reading the excellent manual to learn how all of the parameter controls affect the finished reverb sound.

With 48 automatable parameter faders and switch choices, Oxford caters to any user's skill or interest level. You can drill down to the most arcane levels of reverb and space synthesis, design any reverb effect from scratch or start with any of the 137 wonderful presets, then tweak and save from there.



A detail of Oxford's Early Reflections section. Users can choose between four different room shapes (including position, size and width) and four different programmable controls.

THE CONTROL SECTION

Control functions are divided into three sections: early reflections, reverb tail processing and mixing/routing. Unlike a lot of software or hardware reverbs, there is no interaction between these sections and any of their parameters. You can freely adjust early reflections without affecting the tail's settings and vice versa.

Oxford starts with an input mixer with input gain, stereo separation and low-frequency roll-off controls. From here, the signal flows to the early reflections' mix fader in the tail mixer, where you can blend the ratio of the input signal with the early reflections' output to drive the tail processor. You can use dry input without early reflections, use delay comp on the dry signal to time its arrival with early reflections' signal or delay the input up to 30 meters to the tail processor.

The output mixer lets you mix the early reflections-to-tail ratio, plus the wet/dry balance of the whole plug-in when you instantiate the plug-in as an insert effect. There is also a convenient 100-percent Wet button for typical mixer send/return instantiations.

AMBIENCE-BUILDING TOOLS

Both early reflections and tail parameter faders are arranged in order of importance, from left to right. I found designing a reverb on Oxford to be very easy, especially when you start with the early reflections section and listen 100-percent wet. Early reflections determine the overall nature and color of the reverb's total sound. After choosing one of four different room shapes, the listener's position in the room—anywhere from front to back—and size, you then set the width. You can set the width up to 130 percent for superwide "beyond the speakers" spaces.

Early reflections' programmable controls continue with Taper, a way to control the loudness of reflections predicated on



Oxford Reverb control functions are divided into three sections: early reflections, reverb tail processing and mixing/routing.

their path lengths. Greater density and complexity can be controlled with the Feed Along fader. Feed Along allows you to control the re-injection of sound within the space for early reflections. Moving the Feedback fader will add repeats of early reflections until it reaches a boiling resonance-like sound. At the end of the early reflections' section is the Absorption fader, a high-frequency roll-off that simulates spaces with soft furnishings, rugs or wall coverings.

TAIL PROCESSOR

Reverb time is adjustable from 200 ms to 10 seconds, and overall size is adjustable from 0.15 to 1. The size of a space is conveyed to our ears by building density over time; large settings of overall size cause the sound to build density slower at the onset of reverberation.

The overall size control, along with time, was the most important fader when programming a reverb's tail character. To make the space sound bigger with more low-frequency energy and fullness without making a change in the ambience's length, keep the time value the same and increase size.

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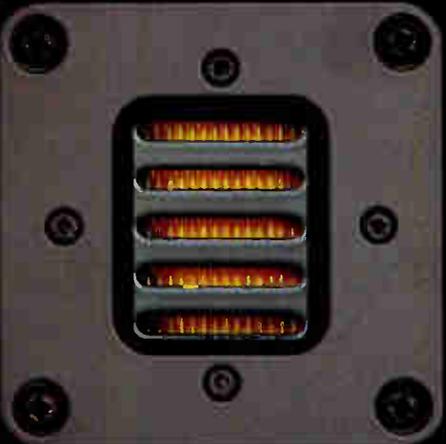
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IN THE STUDIO

Installing Oxford Reverb in a new Pro Tools|HD5 TDM (Version 6.7) system was trouble-free. iLok dongle and software registration/authorization took place simultaneously. The Oxford Reverb uses plug-in sharing and takes up 46 percent of an Accel DSP chip for one instance or 86 percent for two instances. Provided are both TDM and RTAS versions; the reverb is compatible with Pro Tools|HD Accel, HD, LE, OS X and Windows XP platforms.

From Oxford's large collection of churches, ambiances, chambers and emulations of popular patches, I went right to Medium-Size Room and mainly tweaked early reflections, reverb time and size parameters. I could enlarge the apparent size of the kit and improve the thin snare drum sound I had recorded without getting an overly wet sound.

Oxford Reverb is exceedingly wide and easily surrounds any instruments in your mix—even narrow, point-sourced mono sounds. Vocals can usually stand a medium reverb, and I liked the Fat Plate emulation; I only tweaked reverb time and brightened the EQ.

Tight, small and convincing ambiances are usually harder to synthesize, but Oxford comes with many dry space patches and 32 post settings with Foley-esque names such as Atelier, Swimming Pool, Foyer and more. I inserted an Oxford set to Effects/Pipe on a single vocal track and used the wet/dry fader to put a vocal in a tubular space. The early reflections' size and width faders got the most use, and I did not use any reverb tail in my final patch version.

VERSATILE PRODUCTION TOOL

With so many presets and maximum adjustability, the Oxford Reverb's great sound is perfect for any production situation. From lush, wide spaces to crispy, shiny splashes to tiny claustrophobic boxes—you have them all here. The generous 5-band Oxford EQ is a big added bonus. I found it useful for fitting a patch more effectively to the overall track and sizing voices and instruments.

From live to studio to post work, Sony's Oxford Reverb is the new must-have. MSRPs are \$1,050 for the PTH-REVG2 (HD) and \$530 for the PTL-REVG2 (LE).

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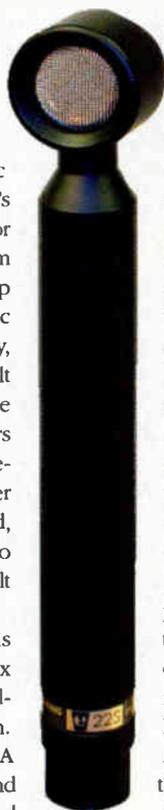
JOSEPHSON E22S Cardioid Studio Condenser Microphone

David Josephson is the best mic builder you've never heard of. Here's a guy who has created capsules for ultrahigh-end, world-class mics from other companies, yet he likes to keep a low profile. And Josephson mic aficionados seem to like it that way, with these mics maintaining their cult status among those in the know. One fan is producer Steve Albini, who years ago asked Josephson to make a side-address, no-compromise condenser that had a vintage European sound, yet was compact and tough enough to survive a drum stick strike. The result is the e22S.

The mic's e22S capsule is derived from Josephson's Series Six line, with a 3/8-inch diameter, gold-evaporated polyester diaphragm. This is mated to a C609 Class-A discrete FET cascode front end and a custom Lundahl amorphous-nickel core transformer. There are no pads, highpass filters or frills. This baby's built for performance—race cars don't have power seats, air conditioning or cruise control. Retail is \$1,480, with a storage pouch and a slick little shock-absorbing clip-mount.

Designed for drum miking, the mic's small size lets you deal with tight spaces and place the mic for optimum pickup, without getting in the drummer's way. Better still, the side-address design means that the sound from the drum can reach the mic directly on-axis. Also, the mic's body stalk gives the engineer about six inches of "reach" over the drum for prime positioning. Used on toms (top or bottom) parallel to the heads, the result was dark with ample resonance. Slightly changing the mic angle added more attack; moving the mic outward toward the rim emphasized overtones—all in all, a huge palette of possibilities from which to choose.

On snares, I appreciated the e22S' 144dB SPL handling, as it offered a punchy, open sound with no need for pads. Keeping the hi-hat out of the snare feed was no problem: The tight, consistent cardioid



pattern exhibits an apparent lack of rear lobing and tons of rejection of sources behind the mic, putting the focus on what you need to capture. Here, even slight changes in placement or angles were clearly noticeable, with plenty of variation in attack, texture and resonances from which to capture just the right snare sound. If you've spent years using dynamics on snares, the e22S will be a real ear-opener.

The real surprise was using the e22S on everything from guitar amps to acoustic guitars and banjos to upright bass. The mic's nice balance of lows with uncolored mids and a smooth, slightly rising top end was just right, whether on 12 strings or the sweet sustain and resinous draw of bowed bass. Noise is rarely an issue with a mic an inch from a snare head, but on acoustic instruments, a Millennia HV-3 preamp spotlighted the mic's low 12dBA self-noise, although cranked guitar cabinets seemed to prefer the transformer setting on a Groove Tubes Vipre. One of our editors even tried them for distance miking of a large choir (using a spaced pair on stands in front of the vocalists) with excellent results.

Overall, the e22S is a winner. It's built to withstand tough drum miking conditions, yet delicate enough to capture nuances of string harmonics. At \$1,480 each, this mic isn't in the budget league, yet for a mic you could use every day on every kind of source, the e22S starts looking pretty affordable.

Josephson Engineering,
831/420-0888, www.josephson.com.

—George Petersen

DPA WINDPAC Folding Location Windscreens

Field recordists take note: DPA Microphones has developed a new wind-protection system with a twist. Push and turn the Windpac's dirigible fabric,

and its internal steel ribs pivot and fold until the blimp is flatter than a short stack of pancakes.

The mic suspension is also unique. It can hold one or two mics up to a bit over 1 inch in diameter. You can even mix and match two different-sized mics without custom clips. (I paired my Sennheiser MKH-20 omni and a Schoeps figure-8.) The tension on its four suspension points are individually adjustable, holding my heaviest mic—a stereo Shure VP88—without sagging.

A mono jumper cable (included) is well-integrated with the suspension, leaving no path for wind or mechanical noise to sneak in. I used the optional \$74 stereo jumper cable (dual XLR3-F to one XLR5-M) for most of my testing. It would be nice if DPA offered an XLR-5-to-XLR-5 jumper for single-point stereo mics. [According to DPA, a 5-pin XLR cable is in the works.—Eds.]

The gray fabric covering is sheer but sturdy. I torture-tested a swatch of the material and found its melting point to be about 200° C. Tearing it is harder than you'd expect. Even after being snipped with scissors, a small hole resisted to becoming a larger rip. If you do manage to shred the covering, it's a replaceable part. The blimp comes in long and medium sizes—your choice, same price (\$849).

My first Windpac outing was to gather the fluttering of wings. On a cold, gusty morning near Oakland, Calif.'s Lake Merritt, I loaded the Windpac with an M/S Schoeps pair at the end of a pole and went birding. The assembled system is extremely light and the results were great—no wind or handling noise as I boomed my way



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through a circling flock, and there was plenty of delicate detail in the sound.

In handheld operation, there's no pistol grip, but the pole-mount features a large ring to slip your finger through (gloved, if it's cold). The rig is well-balanced, even though you are holding it from the end rather than the middle of the blimp.

In a controlled test in front of a large high-speed fan, I found the Windpac's wind noise rejection to be equal to that of my stereo Rycote (sans fur). Note that the assembled Windpac is less rigid than you may be used to. For example, opening the

back flap of the windscreen to adjust the cabling within may release the blimp's grip on the suspension, turning the job into a two-handed task.

My only criticism is that the 4x5x6-inch suspension doesn't fold up. But I love the light weight, the collapsing blimp and the universal mount that lets you use almost any mic. All in all, the DPA Windpac incorporates new thinking about an old problem. Well done.

DPA Microphones Inc., 303/823-8878, www.dpamicrophones.com.

—Rudy Trubitt

SONIC REALITY

SONIK CAPSULE: STUDIO DRUMS Sampled Library

Sonic Reality's line of Sonik Capsule instrument libraries includes drums, acoustic/electric guitars, pianos, bass, brass, strings, organs, woodwinds and grooves/loops. Bundled with IK Multimedia's SampleTank 2 LE, Sonik Capsules can be used cross-platform (Mac OS X and Windows XP) as a plug-in sound module within Logic, Pro Tools, Cubase, Digital Performer, SONAR and other DAWs supporting VSTi, RTAS, AudioUnits and Dxi formats. This is all possible via the Universal Format Outputter (included with Sonik Capsules), which provides seamless integration with SampleTank and other software samplers such as Reason, Battery, Kontakt, HALion and EXS-24.

Studio Drums is mapped out in the Sonic Reality iMAP (used in Sonic Reality's other drum libraries) and standard general MIDI. The layout makes "keyboard" drumming feel more natural. Having some acoustic drum experience, I experimented with fills and offbeats and preferred the iMAP.

Studio Drums (and all Sonik Capsules) are thoughtfully engineered to take advantage of SampleTank's extended flexibility. For example, 30 built-in DSP effects can be incorporated to audition and match the recalled drum set into different spaces. Also, STRETCH (SampleTank Time REsynthesis TeCHnology) offers users complete control over tempo, pitch and harmonics, using a three-synth engine architecture for smoother, more flexible resampling. Traditional resampling is also available.

The drum sets come in a 4GB directory, arranged as complete kits or drum separates for loading different kits, including brush, modern, jazz, dance and heavy rock kits or separates of snares, kicks, toms, hats and cymbals. The snares were expressive, the kicks had detail and body and I was impressed with all of the different toms. (Different stick attacks on the toms are excellent.) The only disappointment was the cymbal samples, which are admittedly hard to pull off, but I could suspend my disbelief with all of the other components.

Using Studio Drums with Pro Tools 6.4/Mac G5 and SONAR 4/Windows XP, the included SampleTank 2 made the experience smooth on both platforms, but I recommend having at least 1 GB of RAM. The dynamics and expression of Studio Drums inspired me to create: I easily laid drum tracks, grabbed a guitar and the sounds flowed. For \$99 (retail), users can



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—Tony Nunes

MONSTER CABLE AVS 2000 PRO & PRO 7000 Studio AC Power Units

The AVS 2000 PRO automatic voltage stabilizer and the PRO 7000 balanced power source—together with clean, reliable monitor amplification—provide the foundation of what Monster Cable believes is the essential "backbone" of any studio environment.

The AVS 2000 PRO is intended to be the first line of defense against power abnormalities, surges and spikes that could damage unprotected equipment. Additionally, its automatic voltage stabilizer produces a steady 120 volts, thanks to a microprocessor that constantly and automatically corrects fluctuations between 80 and 140 volts.

From the huge toroidal transformer and heavy-duty 8-foot power cable to its

feeds from each of these two transformers. In addition to these, five stages of Richard Marsh-designed filters further reduce EMI and RF interference by rejecting internally generated noise in your components that could pollute your studio's AC environment.

The 7000 PRO mirrors the visual design of the AVS 2000 and includes the same heavy-duty AC cable, but has 12 outlets on the rear panel. These are broken down in groups: two analog, four digital, two computer and four high power (for power amplifiers). A large digital readout shows input voltage and current consumption. Eleven status LEDs indicate that all functions are operational. The 7000 PRO also automatically shuts down in the event of abnormal voltage being present at the input.

I tested the unit in my project studio where the power has been known to drop lower than 110 volts in summer peak-hour periods. I know many project/home studio owners who restrict their work hours during these times due to gear that fails when subjected to brutal voltage extremes. I first

tested the AVS 2000 PRO by recording the output on a voltage meter for more than three hours. Even late at night when the voltage traditionally sags, the AVS 2000 kept tolerances within a very civilized ± 0.7 volts.

With Monster's PRO 7000 and AVS 2000 PRO to my system, I noticed that the performance in my Pro Tools|HD3

Accel studio improved. The noise floor, soundstage and resolution all seemed to be slightly better. I would imagine that the worse the condition of your power, the greater the potential for improvement.

Power stabilization and conditioning can sonically improve the performance of audio gear, and you owe it to your equipment to make sure that it has safe, clean and reasonably stable AC. The combination of the Monster PRO 7000 (\$1,495) and Monster AVS 2000 PRO (1,699) does this well at a price that most pro studios can afford.

Monster Cable, 415/840-2000, www.monstercable.com.

—David Rideau ■

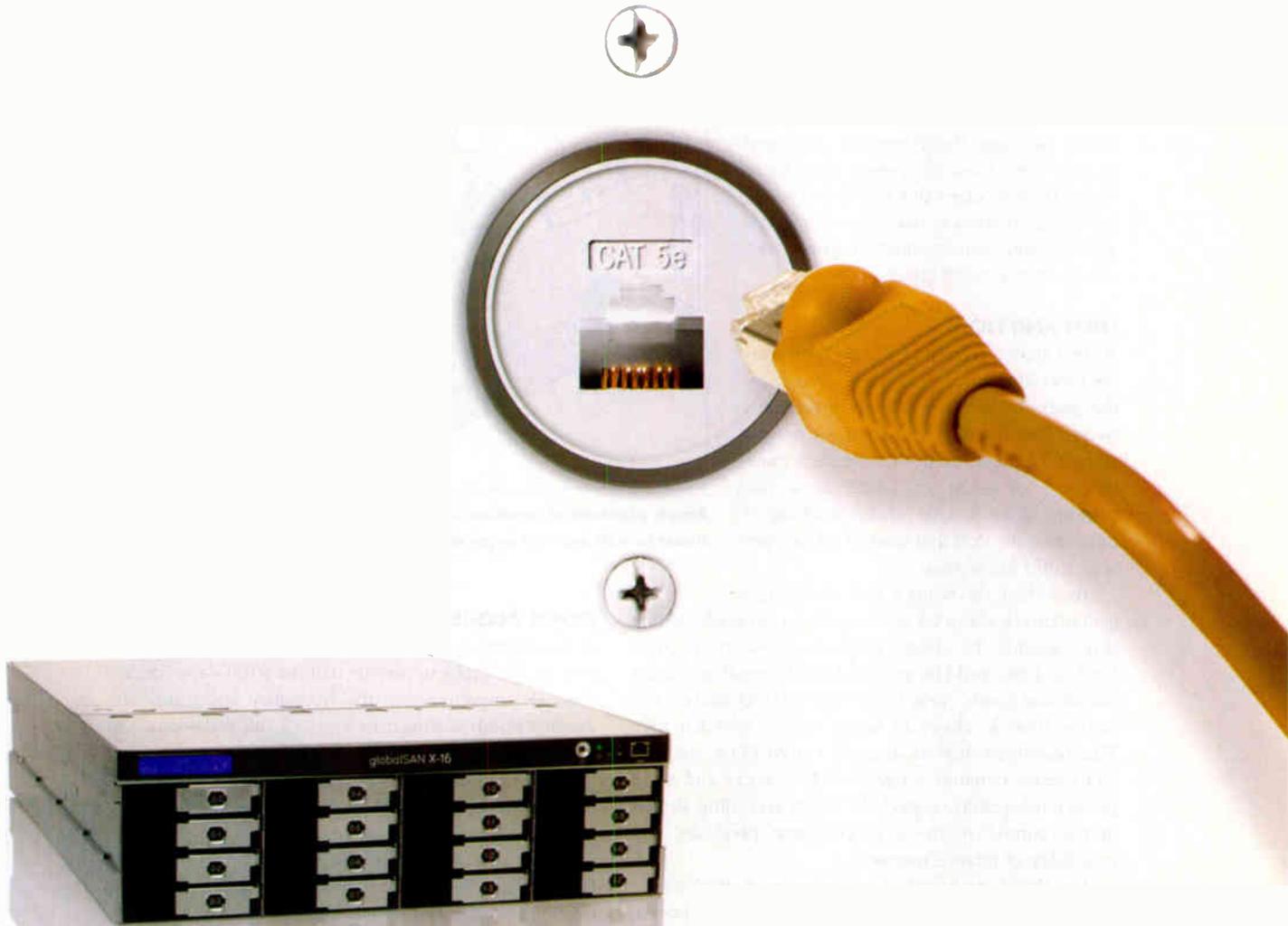


six rear panel outlets (four switched, two unswitched), the AVS 2000's design gives the user the sense that no corners were cut. Three large digital meters monitor input/output voltage, voltage correction and current draw. Six LEDs offer additional status information on ground, abnormal power and other essential information.

The 7000 PRO balanced power conditioner is intended to be connected to the AVS 2000 PRO's output. After providing an additional 3,145-joule capacity of spike/surge protection, the 7000's two triple-shielded transformers balance the power to cancel hum and noise that may exist on a standard unbalanced feed. Outlets labeled Analog and Digital receive their

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Zen and Now

Acoustics, Patchbay Wiring and Balanced Audio Circuits

This past winter, I taught two classes a week: Analog Recording Techniques and Studio Maintenance. The latter class started with soldering techniques, basic DC circuits—series and parallel resistance, Ohm's Law and the Power formula—and an overview of test equipment. From these two extremes comes this month's material, including a rant about patchbay wiring conventions and optimizing small spaces with off-the-shelf acoustic panels.

THEN AND NOW

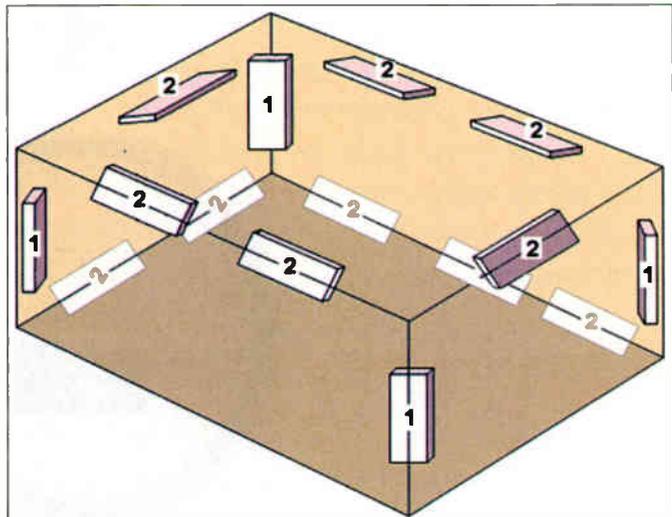
When I started recording, the popular near-field monitors were Auratones. Even then, the geek in me brought unconventional tweaks into the mix, like having a passive subwoofer augment my customized mini-monitors or using an LA-2A as a mic preamp. What I love about teaching is integrating the stuff that worked for me *then* with stuff I know *now*.

Back then, recording a kick drum to 30 ips multitrack was a bit of a crap shoot, so while getting drum sounds, I'd always listen in Repro to see how hard the tape could be pushed before saturation turned punch into mush. Now, the Studer A827/Quantegy 499 combination is closer to what "input" sounded like. That machine's dual metering (VU and LEDs) and the tape's extra dynamic range yield less worry and more predictable results, especially when recording drums in the control room—a process that precludes any possibility of nuance monitoring.

I've always preferred drums in an open space where they can breathe rather than confining them to a booth, a corner or near a wall where low-end reflections can muck things up. Most drum booths should have a good deal of hidden space filled with bass traps, but when that is not the case, an easy fix is detailed below.

New York City's Skyline Studios was one of my favorite spaces in which to record drums. The studio had such a great-sounding lounge just outside of the studio that I placed the drums at the sound lock—all doors open—to capture the natural ambience. Studios are smaller these days, so the modified approach has been to locate the drum kit just in front of the iso booth. This seems to have many benefits.

A kick drum has a figure-8 radiation pattern in free space, but when placed in front of the booth, the radiation is now more cardioid. One or two mics in the booth delivers a dry, well-balanced kit mix with plenty of low-end kick support.



Sample placement of absorbers: In a small room, corner traps (marked as "1") should be sufficient; in a larger space, add floor/ceiling placements ("2").

QUICK ACOUSTI-FIX

If your booth is acoustically treated but not as you'd like it to be, the problem may be that the RT60—the "decay" time—is uneven across the frequency spectrum. The average booth is similar in size to a full bathroom, and you know how that sounds untreated. There are some things we like about the natural reverb of a tiled room, but think about that one low-mid frequency—in the 200Hz to 250Hz range—that the male voice typically triggers.

The most common mistake is to over-treat the walls for reflections but ignore the requirements for effectively treating below 500 Hz. When there is a buildup in the low-mid to low-frequency region, the required higher-density trapping takes up quite a bit more space than just placing absorbers on the walls. One of our classrooms is a control room with an iso booth that needed such treatment but no studio, making it the perfect experiment.

Unlike upper midrange and treble, which reflect like light, low-mids and bass tend to build up at a room's boundaries—especially corners, and not just the obvious places, but where floors meet walls and walls meet ceilings. My experience a year ago with RealTraps' MiniTraps acoustical panels taught me enough to know what was easily possible without major modifications.

As the school already had some "floating" absorber panels, I had students place them as mentioned. The booth is approximately a 12x8-foot space with an 8-foot ceiling. Even after two panels, everyone noticed the difference, but we kept going, figuring the drums

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Larry Seyer

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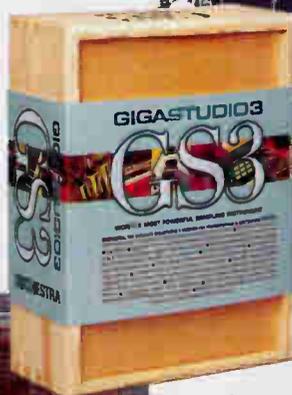
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WIRING SEMANTICS

Questions about patchbay wiring via phone and e-mail set me off this month—big time. Two issues were raised: the semantics of “out over in” vs. “in over out” and then grounding—yeesh! Like the expression “too many cooks,” experimenting with grounding can really mess up the sauce.

For years, I thought the way I had wired patchbays—the gravity method—was the way it was done: Console sources (outputs) are on the top row and destinations (inputs) are on the bottom row. The exception here is outboard gear. When I first encountered an outboard gear bay wired out-over-in, I simply made the assumption that someone decided to maintain continuity with the rest of the bay, never bothering to contemplate source and destination.

If you start at the very beginning, microphones are the first sound source. Not all bays have mic lines, but if they are in the bay, they would be located at the very top row with preamp inputs directly below. Equally logical, the next patchbay group is preamp out (insert #1 send) followed by the insert return. After that, things are literally upside down. I believe that outboard gear should be wired in-over-out because in terms of signal flow, it's logical and gravitational. Imagine a horizontal slice across the insert send and return bay, in between which the outboard gear bay is inserted. Does it make sense now? I had to ask my Record Plant mentor, Paul Prestopino, to confirm this for me for fear I was losing my mind.

While on the subject of patchbays, there have been many schemes to resolve ground current issues—such as flying shields at one end—but the “problem” has never been with the wiring; it's the gear that's at fault. Eighties-era gear often used plastic-insulated jacks mounted directly to a PCB, making the shield connection the Trojan Horse of audio. In this example, the shield dumps noise on the PCB ground, to which many high-gain amplifiers are referenced. Other noises get in the way, too, such as radio and television interference (RFI and TVI, respectively). No matter what type of connectors are used, this is known as the “pin-1” issue.

The most familiar example of good pin-1 implementation is Mackie's use of all-metal ¼-inch jacks directly secured to a metal chassis, creating an electrical “Firewall” to noise. Minimizing noise

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susceptibility is almost that simple and it certainly starts here. My point is not to accommodate bad gear, but to identify, fix, modify, wrap transformers around or chuck out uncooperative equipment.

Remember that unbalanced audio signals are supposed to be the domain of consumer electronics—simple systems in which very few components are close together with perhaps three feet of cable between them, max! What goes on behind an audio rack is no place for unbalanced cabling. With just a shield for noise protection and one wire for signal, the gear and its destination have no way to defend themselves against being



An example of good pin-1 implementation: Small touches, like Mackie's use of all-metal 1/4-inch jacks and steel rear panel on this 1642-VLZ PRO mixer, help guard against noise—creating an electrical "Firewall."

too close to a wall-wart, inside of which is a hum-radiating transformer.

While a Firewall stops noise from sneaking into the box, it alone doesn't stop noise induced into the signal cables, but the addition of a balanced signal path does (a twisted pair of wires for signal and a noise shield). There are three types of balanced signal configurations: transformer balanced (passive), signal balanced (active) and impedance balanced.

Two identical signals traveling down a shielded twisted-pair cable, one a mirror image of the other (180 degrees out-of-phase), is easy to visualize. If brought up on a mixer as two independent channels, then the signals would cancel. If subtracted by a differential amplifier (what balanced inputs are), then the signals add up while canceling the noise common to both wires. The relationship of amplifying the audio while rejecting noise is known as the common mode rejection ratio (CMRR).

Impedance balanced is a little tougher to grasp because both signal wires have the same source impedance (stay with me now), but only one of the wires carries a modulated signal. For example, let's say the signal-modulated wire is being driven by an output amplifier with a 47-ohm impedance. (It's a "source," get it?) By tying the unmodulated wire to ground through a 47-ohm resistor, hum will be equally induced into both "signal" wires so that the destination—a balanced input/differential amplifier—can do its job of canceling the noise common to both wires.

I've always wired unbalanced gear with balanced cabling and this does reduce induced noise by an obvious amount, albeit not as much with a true impedance balanced circuit. If you knew the output impedance of an unbalanced device, then the trick in the paragraph above could improve things considerably; alternatively, using a transformer at the destination would be the easier fix. ■

Eddie is thankful that his technical background has kept his bag of tricks full and a bit ahead of the curve, but he sometimes regrets not getting psych and MBA degrees.

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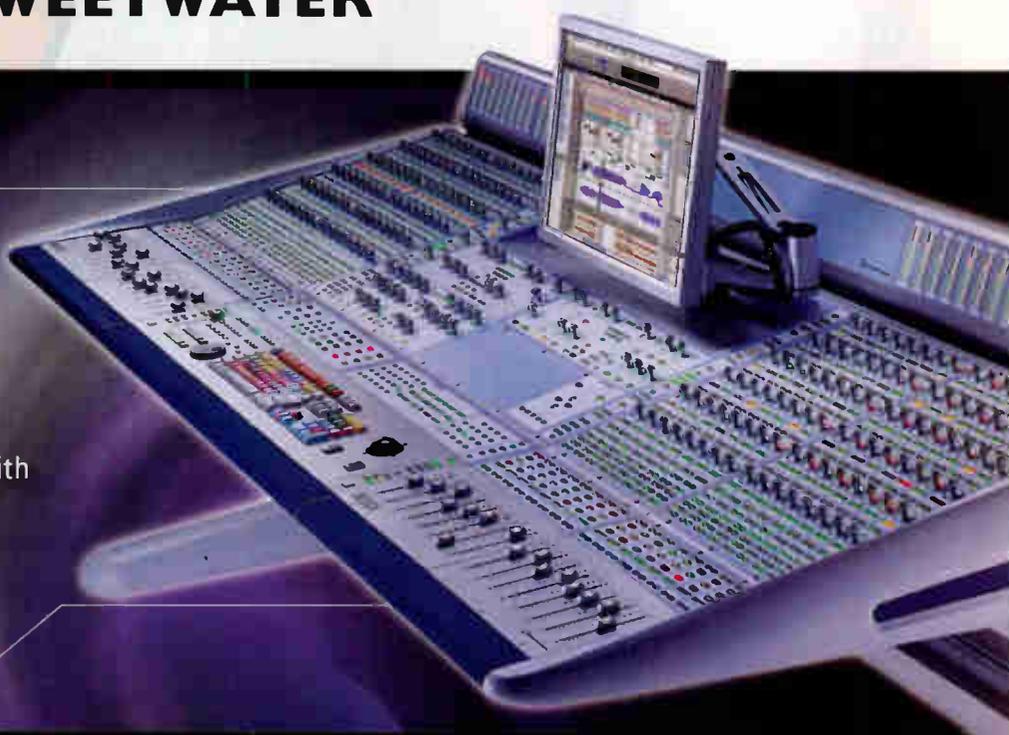
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PHOTO: RICK CLARK

Taking a break from *Los Super Seven's* *Heard It on the X*, from left: co-producer Dan Goodman, engineer Dave McNair, co-producers Charlie Sexton and Rick Clark, and Lyle Lovett

LOS SUPER SEVEN RIDES AGAIN!

CELEBRATING THE SPIRIT OF
TEXAS BORDER RADIO

By Blair Jackson

Los Super Seven is more an *idea* than an actual band. It's a genre-busting celebration of Southwestern and Latin music, from rootsy *tejano* kickers to heart-rending ballads to primal rock 'n' roll to varying shades of blues. Over the course of three extraordinary albums—the most recent, *Heard It on the X*, was just released by Telarc—creator/co-producer Dan Goodman has assembled one sterling cast of musicians after another to explore different facets of the many styles found in the region.

The original *Los Super Seven* album in 1998 brought together

David Hidalgo and Cesar Rosas from Los Lobos, Tex-Mex accordion great Flaco Jimenez, his Texas Tornados bandmate Freddy Fender, country singer Rick Trevino, *tejano* star Rubén Ramos, Joe Ely and a fine cast of supporting players for an album dominated by traditional Mexican folk songs and a lone English-language standout: Ely's version of Woody Guthrie's "Plane Wreck At Los Gatos (Deportee)." The second album, *Canto*, released in 2001, had a more Latin/South American feel-

ing, with a number of new contributors—including Brazilian singer Caetano Veloso, The Mavericks' Raul Malo and Peruvian vocalist Susana Baca—joining the Los Lobos gang and others on an extremely diverse set. Los Lobos' Steve Berlin produced both albums; Dave McNair engineered.

"It's been a lot of fun having a different cast of characters each time," Goodman says. "On the first album, we put together Texas artists along with Los Lobos, who are from East L.A., and mined the cultural link between them. And the link was the border, so the first album started out as a Texas-meets-East L.A. thing. The second record we wanted to explore Latin roots music in a pan-Latin context—more of a world music approach. This time around, for *Heard It on the X*, it was a return to the border, but not in a purely Latin context. It's more Texas-influenced, mostly English and [encompassing] this fascination we all have with border radio."

Indeed, "the X" is the nickname given to numerous American pirate radio stations that sprang up just across the Mexican border beginning in the 1930s and blasted an incredible array of great music into Texas and across the Southwest U.S. through the '70s. (All Mexican stations' call letters begin with an X.) Adventurous DJs, including the legendary Wolfman Jack (nee Bob Smith), who got his start on a pirate station in the Chihuahuan desert, thought nothing of playing Howlin' Wolf alongside Hank Williams, Bobby "Blue" Bland, Buddy Holly and Tex-Mex sensation Lydia Mendoza. It was all soulful music, no matter what the context, and it influenced generations of musicians across the Southwest, who picked up on the righteous eclecticism of "the X" as they came up through the ranks themselves.

Heard It on the X embraces that spirit even more

—CONTINUED ON PAGE 134

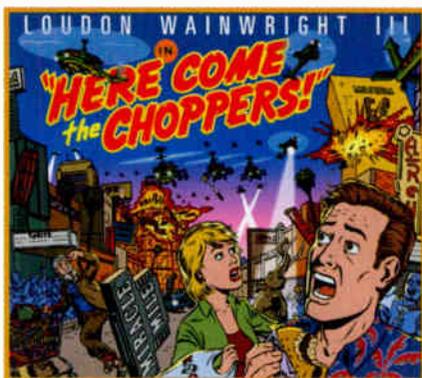


LOUDON WAINWRIGHT III

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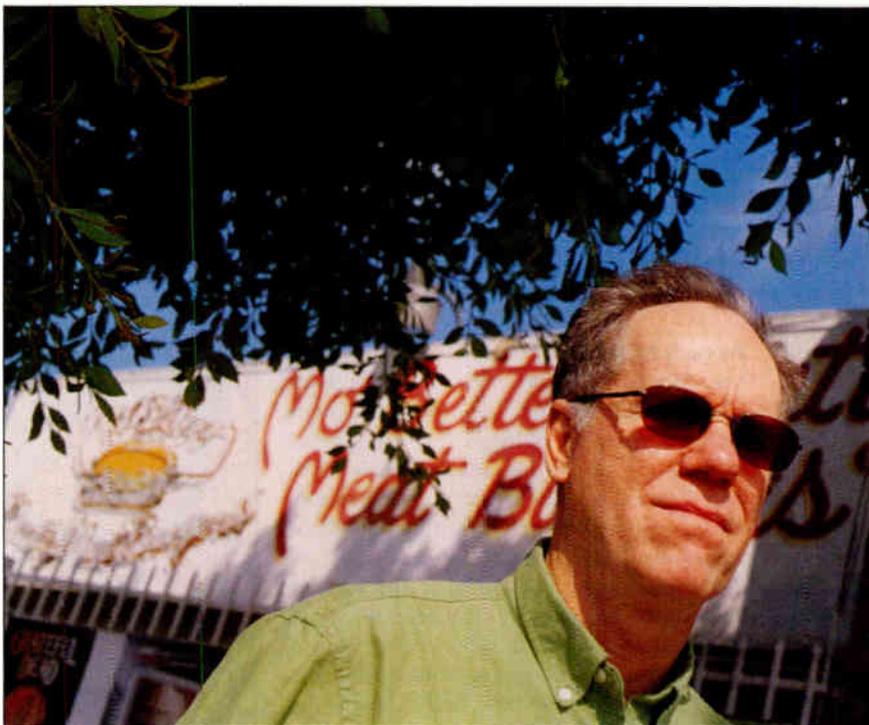
By Blair Jackson

You gotta love a guy like Loudon Wainwright III. He's put out 21 albums since his debut in 1970, all of them filled with heartfelt musings on life, love, family and death, as well as a whole lot of other things that he finds funny and/or strange. Occasionally, his whimsical side will bring him into the mainstream for a few months: His biggest hit was a song called "Dead Skunk," which hit Number 16 in 1973; then, about 20 years later, he got a lot of airplay for "Talkin' New Bob Dylan," which joked about being hailed as one of many "new Dylans" at the beginning of his career, and saluted Dylan on the occasion of his 50th birthday. Very cute. But really not what LWIII is all about, any more than seeing Proust's grocery list would clue you into his inner world. No, Wainwright is actually one of the deeper cats out there, a straight-shooter who says what he means;



he does not drown the listener in opacity and convoluted metaphor. And, yes, he can be funny.

He's always surrounded himself with good musicians: Past records have included contributions from the likes of guitarists John Scofield, David Mansfield, Martin Carthy and Richard Thompson. He was married for many years to singer Kate McGarrigle, and she and her sister, Anna, appeared on a number of his albums, as did his angel-voiced New York friends The Roches. Kate



Muses on family and love, socio-political observations and other "deep" thoughts while maintaining his characteristic wry sense of humor: Loudon Wainwright III's latest album, *Here Come the Choppers*

McGarrigle and Loudon Wainwright III are the parents of current critic's darling Rufus Wainwright, who seems to be every bit as gifted and forthright as his dad. (If you don't want your psychic history explored in song, do *not* become part of this family.) Loudon Wainwright III has also nurtured a fairly successful acting career in recent years, appearing on *Ally McBeal*, in the Tim Burton film *Big Fish* and the forthcoming Cameron Crowe flick, *Elizabethtown*. Maybe you also spotted the singing cameos of Loudon, Rufus and his sister Martha in *The Aviator*. No wonder Wainwright moved from New York to L.A.—increasingly, that's where his "other" career is.

Wainwright's latest album, *Here Come the Choppers*, is certainly among the best of his career. It's the usual folksy hodgepodge of profound and witty observations and portraits. Who else could write songs about Hank Williams and the death of Mr. Rogers that might make you cry? A photo of his grandfather spurs him to speculate about his tough, ornery namesake in "Half Fist." The title track is a surreal and paranoid vision of an L.A. constantly under surveillance—at least that's what the character in the song thinks. "My Biggest Fan" is a wry look at fame and fandom. And then there are more serious meditations like "When You Leave," a sad but beautiful study of the emotional scarring suffered by children,

spouses and lovers left behind when a relationship fizzles.

As always, Wainwright's vocals and acoustic guitar picking are strong and sure, even as they shift in tone from song to song, sometimes verse to verse. What elevates this particular batch of tunes, though, is the sympathetic and imaginative accompaniment of his "band" for this outing: New York-based Americana/jazz guitar giant Bill Frisell, pedal/lap steel guitar master (and occasional Frisell associate) Greg Leisz, acoustic and electric bassist extraordinaire David Piltch and the undisputed king of L.A. session drummers, Jim Keltner. Lee Townsend, who has produced 19 albums by Frisell (and worked with a slew of other great jazz, folk and singer/songwriter types—check out his Website at www.tonemusic.com) helmed the sessions.

He, Frisell and Leisz initially hooked up with Wainwright at a Century of Song festival that Townsend produced in Germany a few years back. Keltner had played on a LWIII record 30 years ago. Shawn Pierce, who has worked on a number of albums with Townsend, engineered the sessions. Tracking and initial overdubs were done at Mad Dog in L.A. Later, overdubs were cut at The Factory (formerly Little Mountain) in Vancouver—where Pierce lives—and mixing was done in the Vancouver studio Pierce

—CONTINUED ON PAGE 138

VAN MORRISON'S "MOONDANCE"

By Gary Eskow

Van Morrison remains one of rock's most enigmatic figures, and today, nearly 35 years since the recording of his most famous album, *Moondance*, most of his fans know little about him. Ironically, tracing the recording history of that album's title track also turns out to be something of a mystery.

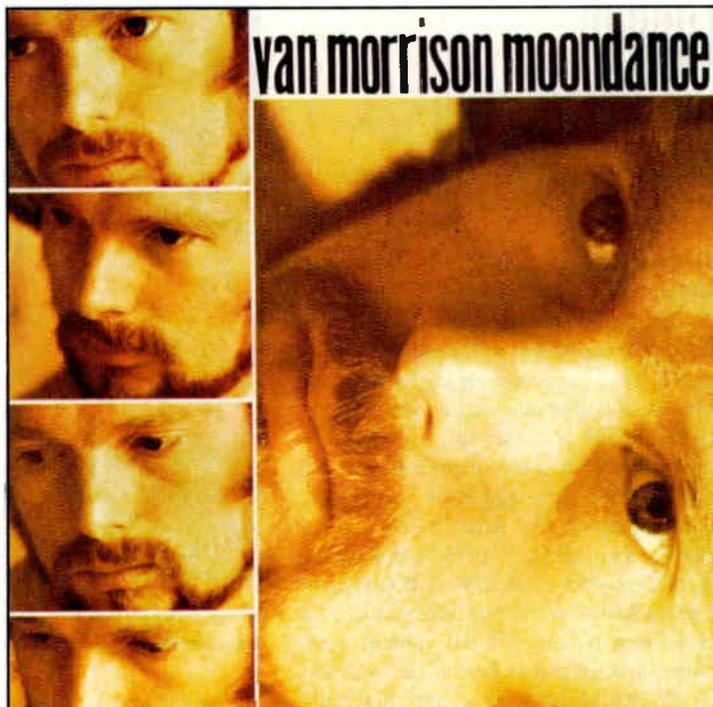
What is known for certain is that a young engineer by the name of Elliot Scheiner ended up mixing a number of tracks on *Moondance*. "It was right at the beginning of my career," says Scheiner. "I must have been in the business for about a year-and-a-half. The way things worked over at A&R Studios was that if a new client didn't request anyone in particular, the traffic manager assigned people to a date."

As Scheiner remembers it, several different A&R engineers contributed their talents to the project, Morrison's second album for Warner Bros. "Shelly Yakus, Steve Friedberg and Tony May all worked on the *Moondance* album. The tracks were pretty evenly divided between us. There were some overdubs, but for the most part, the record was cut live."

But Scheiner says that the song "Moondance" wasn't tracked at A&R, and this is where things get murky. "Moondance" was the only cut that wasn't done at A&R," he says. "I remixed the album in surround a few years ago and I remember that a guy named Neil Schwartz was listed as the tracking engineer on that song. By the way, they spelled my name wrong on the original album, and when we did the remix, I was asked if I wanted them to correct the spelling, but I told them to leave it the way they had it: Schierer!" (That's all right—they also misspelled the names of nearly half of the bandmembers.)

Time out. Dixon Van Winkle, also a fledgling engineer at A&R at the time (Van Winkle would later mix Paul McCartney's "Uncle Albert" at A&R and lay down Frank Sinatra's version of "Send in the Clowns"), recalls things differently. "I remember the 'Moondance' tracking session well," says Van Winkle. "Tony May was the engineer for that session, which was cut in A1 over at A&R. What a big, great-sounding room that was. I'd only been working at A&R for about two months when I got called to be the setup man on that session. I ended up working with Van on several projects, including 'Brown Eyed Girl.' Elliot was the engineer on that record and I was his setup man. I ended up finishing one of Van's albums; I don't remember which one, though.

"Anyway, the 'Moondance' date sticks in my mind because I almost ruined it! I was green at the time and didn't really know how things worked. I was sitting behind this great Altec tube console that we had, there were blue lights



set up in the tracking room to enhance the mood and take one was going down perfectly. All of a sudden, I see Tony [May] waving his finger at me, and I don't have any idea what's going on! Eventually, I thought that he was telling me to stop the tape machine for some reason, so I did. We had an Ampex MM-1000 16-track recorder. Tony gave me a look and then got on the talkback, told the band that we had a little problem and that we needed another take. The next take went down perfectly from start to finish, and that's what's on the air.

"It wasn't until about eight years later that I found out what Tony was actually motioning me to do. We had three Altec 604Es mounted in a utility cabinet. In those days, everyone wanted to listen to all three of them in mono. They were powered by a 75-watt McIntosh tube amplifier and there was magic in that sound. Most of the smart engineers at that time, including Tony and Shelly, monitored in mono. We learned that if you can make a record sound great in mono, particularly a live date, then you have something. Tony insisted that all the players use mono earphones. Everyone had the same mono cue mix. That way, everyone was on the same page. You'd work like hell to make that cue mix work.

"As I was saying, years after the session, I found out that Tony had been bothered by a rattle that was coming from the utility cabinet. He wanted me to try and get rid of it, not shut down the session by stopping the tape machine! I never made that mistake again!"

"You should call Steve Lang," offers Scheiner about the memory discrepancies. "He works in the Warner Bros. library out in L.A. Ask him to pull the tape for you." Shortly thereafter, that's exactly what the accommodating Lang did. "It says on the box that 'Moondance' was recorded

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at Mastertone Studios," says Lang, "but I know that many of the cuts were re-tracked when Van and the band went into A&R, so it's hard to tell where the final take was recorded."

Either way, completed tracks for the entire album were handed off to Scheiner. "It was just before Christmas, 1969," says Scheiner. "Van went up to Woodstock to be with his family and I ended up mixing the entire record with Gary Mallaber, the drummer in his band.

the Altec 604Es, we used KLH 3s as radio mono references.

"I remember that one track on the *Moondance* album had more drum leakage than any of the others, but I can't recall which one it was. Whatever song that was, it was definitely not recorded at A&R. Our stuff had incredible separation. 'Moondance' had much more of a live sound than the other songs on the album. I recall that there was more drum leakage in the guitar and piano tracks, and that I had

Most of the smart engineers at that time monitored in mono. We learned that if you can make a record sound great in mono, particularly a live date, then you have something.

—Dixon Van Winkle

"Back in those days, we were working mostly with 8-track technology, and the mixing largely took place as you were recording. The drums, for example, were in mono, so you had to balance the toms, kick, hat and snare while you were tracking. Same with backing vocals. I remember that 'Crazy Love' only had six tracks: drums, bass, guitar and vibes had their own tracks, Van had one and the girls who sang backing vocals had the sixth. You mixed as you recorded and you had to commit to things as you went along.

"We had a theory at A&R," Scheiner continues. "When you recorded a track, if it was taken somewhere else to be mixed, all the engineer should have to do is set the faders even to have a mix that was pretty much complete. So it just wasn't a big challenge to mix back then. These days, everything's completely different. We'll get a record with 80, 90 or even 100 tracks. It's all about fixing things later on in the process."

Most of the tracks that Scheiner cut at A&R in those days, including those by Morrison, were done on a custom-built console. "The board came from 112 West 48th Street, Phil Ramone's original building from the 1950s," Scheiner recalls. "It had mostly Altec components, four rotary faders and a rotary master. Equalization controls were above each fader. The EQ covered the high and low ends, but I'm not sure what the frequencies were. When 8-track became a reality, we added three more faders above the master fader. These faders had no EQ modules, so we had dedicated tracks to them that sounded pretty good as they were. In addition to

tried to contain it to make it sound more like the rest of the album.

"From an artistic point of view, back then the album was a concept, a complete body of work. This was in the early years of FM radio—anything could be on the radio. We didn't think about what song was going to be the single—all of the songs were great."

The ornamental flute lines that dance over Morrison's singing and the band's gentle swing were performed by Collin Tilton. Tilton, who also played sax on the entire *Moondance* album (along with the late Jack Shroer), says he remembers the dates well.

"We were all living in Woodstock and playing in a group called the Colwell-Winfield Blues Band. We were working on our second record and our leader fired the singer without having a replacement lined up. At about the same time, Van fired his band. He was doing what was going to end up being the *Moondance* album. They were rehearsing or something and he fired everyone in his group. One thing led to another, and we all ended up jumping ship. Jeff Labes [pianist] was a member of Colwell-Winfield. Jack Schroer and myself were also in the band. John Klingberg, who played bass on *Moondance*, was a friend but wasn't a member of the Colwell-Winfield group. The drummer, Chuck Puro, cut a couple of songs and then got out of there; he wasn't happy. I had never heard of Van Morrison at the time. Everyone else was going to play with him, though, so I went along."

Okay, here we have a bandmember

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who played on the sessions. Surely he will clear up the mystery of where the "Moondance" keeper track was recorded. "My memory is that at first we spent an entire week in Mastertone, but the only song from those original sessions that was used was 'Glad Tidings,' which is the last song on the album. We went into A&R and re-cut everything else."

As Tilton remembers it, the tracks at A&R were not cut live but "on the first swing through at Mastertone, that's how we worked. But when we went to A&R, they did a million rhythm tracks, which was Van singing and John Platania on guitar along with bass and drums. They would go over and over it until Van got what he wanted. Then after they did that, we came in and did the horns relatively quickly. The horn parts were all written and rehearsed by the band; we were going for a band sound. We did the horns as overdubs. And it's funny, we were at every session. The rhythm section would set up and Jack and I would sit around doing whatever until they brought us in.

"I basically wrote the arrangement on 'Moondance.' There are some little things... when it gets to the part where he sings—'Can I just have one more Moondance with you?'—if you listen to the horns in the background, it's sort of a cop from [John] Coltrane's *A Love Supreme*. It's the same interval. That's where my head was at back then."

And that famous flute noodling, where did those lines come from? "I'm not a very good flute player, particularly. I think I just got lucky. I played that on a student model flute that I had paid \$80 for."

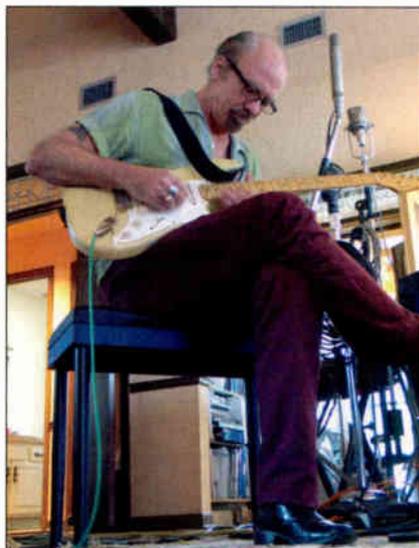
Moondance hit the charts in March 1970, and instantly established Morrison as a powerful creative force in music. Although the album would eventually climb to Number 29 on the *Billboard* charts and the track "Moondance" quickly worked its way onto FM stations throughout the rock world (along with "Caravan," "And It Stoned Me," "Into the Mystic"—hell, practically the entire album got airplay), the song never made it to the pop charts as a single. In fact, the only single from the album to chart was "Come Running," which topped out at Number 39. "Domino," from Morrison's next album, *His Band and the Street Choir*, would rise as high as Number 9 and secure the singer's place in the pantheon of blue-eyed soul singers. Through the years, he's made occasional forays into the pop mainstream, but mostly he's followed his muse down less-commercial roads, all the while building one of the most intensely loyal followings in pop music. ■

LOS SUPER SEVEN

FROM PAGE 128

than previous Los Super Seven discs. There are a few holdovers from previous outings, including Fender, Ely, Jimenez, Malo, Trevino and Ramos. But much of the cast this time is new: The distinctive singers include Texas R&B stalwart Delbert McClinton, Rodney Crowell, John Hiatt, Lyle Lovett and Clarence "Gatemouth" Brown. Fine guitarist Charlie Sexton contributed heavily to the album's instrumental sound (and co-produced), as did Joey Burns and John Covertino of hip Tucson band Calexico and ex-Tin Machine drummer Hunt Sales. Cameos by such notables as steel guitar wiz Lloyd Maines and former Merle Haggard guitarist Redd Volkaert also spice up the set, which runs the gamut from horn-driven Mexican tunes, early rockers by

Denny Freeman has played with Stevie Ray and Jimmie Vaughan, singer Angela Strehli and more.



Buddy Holly and Bobby Fuller, tracks by the influential Texan Doug Sahm and blues songs by Willie Dixon and Texan Blind Lemon Jefferson. The title track? It's by the Texas hard rock band ZZ Top, of all people.

"We wanted the material to have some connection to the era and sensibility of border radio," notes Rick Clark, who co-produced the album (with Goodman and Sexton), selected nearly all of the songs and played on the album. Clark continues, "We wanted to celebrate the universality of the Texas border experience, putting pictures in new frames as much as possible. Like with 'Heard It on the X,' the idea wasn't just to use a ZZ Top song. Thematically, it seemed perfect, but in my head, I heard it as almost tribally percussive. I wasn't married at all to the original riff the song was built on. Charlie picked up on that idea, adding exciting

West Side Horns let it howl, pictured from left: Al Gomez, Spot Barnett, Luis Bustos



Co-producer Dan Goodman, "Gatemouth" Brown, and co-producers Charlie Sexton and Rick Clark

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production arrangement touches.”

Besides being a longtime contributor to *Mix* (and our current Nashville editor), Clark has developed a solid reputation as a music historian, with extensive knowledge of obscure (and popular) Americana and a knack for finding cool songs for projects. He unearthed a number of the songs on the first two Los Super Seven albums, and for the past several years, he’s compiled amazing CDs of Southern tunes of every genre for the *Oxford American* magazine’s annual music issue. He’s also done music consultation for films.

“Rick is the best,” Goodman says. “He knows what’s out there and knows how to find great obscure material that always manages to strengthen our concepts. Rick and I were strongly committed to the songs we had chosen and our conceptual idea, and we set out to cast the music with artists we felt would deliver stellar performances.”

Clark’s search for material took many months, considerable travel and countless hours of listening. “I went out and gathered everything from 1906 Edison cylinder recordings of mariachi bands to cowboy hollers, to free jazz and psychedelic garage music,” he says. “I listened to hundreds of songs and then I’d sort of narrow it down and narrow it down, and then bring the prime candidates to Dan [Goodman]. Then we’d debate the merits of various songs in listening sessions. It was an impassioned give and take.

“I went to the LBJ [Lyndon Baines Johnson] library in Austin and talked to all sorts of record collectors. One song I came away with from that [Austin] trip was ‘Talk to Me’ by Sunny & The Sunliners. Three or four people, out of the blue and disconnected from each other, suggested that song, so



The Freddy Fender sessions: Bottom, L-R: Paul Niehaus, Charlie Sexton, Dan Goodman, Freddy Fender and Martin Wenk. Top, from left: Rick Clark, Joey Burns, Max Bacha, John Convertino, Rick Trevino and Jacob Valenzuela



Redd Volkaert’s credits include lead guitarist for Merle Haggard’s band, The Strangers.

I knew I was onto something. And it’s not available anywhere that I know of on CD. It’s from the late ‘50s originally. It was one of the first Hispanic pop records to make the *Billboard* charts. Little Willie John did a version, too.” McClinton sings it on the new album as if the song was his.

Other pairings were equally serendipitous: Who better to tackle the old Bob Wills Western swing tune, “My Window Faces the

South,” than the modern heir to that sound, Lyle Lovett? Concerning Ely’s performance of Bobby Fuller’s “Let Her Dance,” Clark states, “It seemed totally right for him—it’s got that weird Buddy Holly meets Del Shannon meets ‘La Bamba’ kind of thing. We then found out that Joe played it in bands when he was younger.” And the choice of Brown to sing the closing number, “See That My Grave Is Kept Clean,” takes on added poignancy because the great bluesman has been diagnosed with terminal cancer. “We had chosen that song for Gate a good year-and-a-half before we got the news,” Clark says. “The great thing about that track, though, is that it’s not a long-faced thing. It’s actually very upbeat the way he plays it. It’s a nice note to end on.”

Initial tracking sessions for *Heard It on the X* took place over a period of 10 days in September 2004 at treefort studios in Austin, with McNair once again engineering. McNair, who lives in Manhattan but is originally from Texas, mostly works as a mastering engineer these days, “but I’ll do one or two recording projects a year, too,” he says. “Treefort is in this guy named Jack Rock’s house and it’s pretty cool. It has a separate control room, but for everything else, you’re in different parts of the house and they have snakes [connecting everything]. It has an Amek console, but we just used it for monitoring. We recorded to Pro Tools|HD and we brought in a lot of preamps and stuff. Jack’s got a lot of cool gear.

“We were usually recording a lot of people live at one time and there wasn’t much isolation, but that doesn’t bother me. I just put some mics up and we captured it. We had the drums in the dining room and then everybody else was in the living room, so it was a little different than a typical stu-

From left: Johnny Contreras, Joey Burns and Adolf Ortiz at Jack Rock’s treefort studios in Austin

For Heard It on the X, engineer Dave McNair recorded to Pro Tools|HD, used “weird radio station tube mic pre’s” and worked quickly in an open recording environment.



dio setup. The drums were slightly isolated, but [the rooms are] totally untreated walls and glass doors, so it goes right through. In the main room, there might be a lot of guys playing acoustic instruments. And I isolated the upright bass as much as I could—it was in a little room we made in the entryway with a makeshift gobo wall. The setup was rarely the same on consecutive tunes, so we were always moving things around. We didn't really have time to sit there and audition microphones; we were working fast."

Fortunately, he had some good equipment to work with, both at treefort and for later overdubbing sessions at Ocean Way in Nashville, where he mixed the album on a Neve VR. (There was also some overdub work done at Paragon in Nashville.) "We had all sorts of great analog outboard gear," he says. "The usual LA-2As and 3As, 1176s. I used a BSS DPR-901 compressor on a lot of the vocals." Vocal mics included Neumann U47s, Shure SM7s, "and I believe I used an [AKG] C-12 on one of Delbert's tunes," McNair says.

Also, McNair notes, "Jack Rock is a total gearhead and an electronics genius, so treefort has stuff like old [Telefunken] V-76s. He has a whole rack of solid-state Neumanns and the usual Neve and API stuff. He also has these really weird radio station tube mic pre's that you can still find on eBay for a pretty good price. He's got like eight of those bad boys and we ended up using them on a lot of stuff, especially guitars. I'm not going to mention the brand name because they're still out there and they're cheap and nobody knows about them." Translation: He wants to buy them so you can't.

Clark says that engineer McNair is "an absolute jewel. The guy is an incredibly hard worker, he's totally attuned to what it takes to do audiophile-level recording, but he is also absolutely fearless in breaking rules to get unique sounds. He likes f***ing up drum sounds and vocal sounds, but he does it in a very artful way. It can be subtle things, like distorting Delbert's voice a little on 'I Live the Life I Love' or coming up with these outer space tones that come out of the blue [on 'Cupido']. That's totally McNair. He comes up with touches that make the music stand out in relief in exciting ways."

This is the first Los Super Seven project without contributions from Los Lobos. In a sense, their "house band" role has been taken over by members of Calexico, another Clark "find" for the project. "The Calexico guys really bring something fresh and different to the album," he says. "The first time I heard them, I felt an immediate connection with them, and their presence on the

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Calexico's Paul Niehaus adds flavor to this project with his magnificent pedal steel playing.

record and their involvement, creatively and spiritually, is very significant—not only in what they played, but in the selfless manner in which they approached everything in the studio each day. It was always, ‘How can we make this as special as we know it is?’”

With their relative youth, too, Calexico is, in effect, the next generation of musicians who understand the spirit of border radio. Clark and Goodman also emphasize the importance of Sexton's standout production contributions on the album; in some ways, he provides the instrumental glue that holds many of the songs together.

“This particular album was personal for me,” Clark says. “Though I didn't listen to the ‘the X’ when I was growing up in Memphis, I remember very clearly hearing the Top 10 countdown and right next to the Rolling Stones and The Supremes, the DJs would play local bands like The Guillotine, the Box Tops or the Swinging Yo-Yos, and there was this great feeling of regionalism to the music. This is all before the days of radio consultants and corporate radio, when DJs could still play music they dug. So this album [*Heard It on the X*] is the embodiment of that spirit. Border radio was the ultimate example of musical and cultural synthesis, where all that really mattered was does it sound good? Is it cool?”

Heard It on the X sounds good. And it's cool. But will radio play it? “I have no idea,” Goodman says with a chuckle. “Rick and I brainstorm on the music we want to make, we get it together and then let the record company worry about getting it on the radio. Maybe some triple-A or Americana stations will pick it up. I have a lot of faith that serious music lovers out there who really keep their ear to the ground will discover it. Regardless, it is a record that we are very proud of.”



LOUDON WAINWRIGHT III

FROM PAGE 129

shares with film and TV composer Patric Caird, MX Sound. The project was tracked and mixed entirely in Pro Tools|HD.

“Everything was done very quickly,” comments Pierce. “We were in the A room at Mad Dog, which has a Neve console, for about four days. We tracked them together live on the floor, one song after another. Then we moved into the studio's large rehearsal space, hauled in a bunch of gear and did a lot of our overdubs there. There's no control room in that room, so we had to baffle everything off and use headphones, but we got some really good tracks there. It was a very interesting and amazing experience to track those musicians.”

“The plan formulated by Lee Townsend was to familiarize the other players ahead of time by giving them my voice and guitar demos,” Wainwright wrote in his album notes. “Bill Frisell, natural leader that he is, wrote out some terrific charts. The band and I rehearsed for a day and then, in Nike-like fashion, we just did it.”

“The arrangements really were driven by Loudon's playing,” adds Townsend. “All the parts seemed to evolve organically out of what he does.” Instrumentally, the music is dominated by Frisell's varied and imaginative guitar colorings and the haunting sustain of Leisz's steel guitars. Capturing both was relatively straightforward, Pierce says. “When I first started working with Lee Townsend, I asked him, ‘How do you get that great Bill Frisell sound?’ And he said, ‘Man, you'll be amazed; you'll see someday. It's not that hard.’ And what I've learned the more I've worked with really good players like Frisell is how much of their sound is coming from *them* and how little you actually have to do [as an engineer].”

“With Bill, I used a [Neumann] KM-84 about a foot-and-a-half away from each cabinet, which we had isolated in the lounge. For some of the tracks, he was using two Fender Deluxe amplifiers, and for some he used a Deluxe on one channel and a Princeton on the other, and I captured it in stereo. Occasionally, I'd move the mics around a little bit if he wanted a tighter sound or maybe a little more full-bodied. Then I'd move the mics back.”

Asked about how Frisell responds to playing a supportive role instead of being the leader, as he often is, Townsend notes, “He's the ultimate team player whether it's his album or not. He quietly elevates everything he gets involved in. That's why everyone wants to work with him.”

To capture the sound off of Leisz's amps, Pierce used “a very simple [Shure] 57 right on the cone of the amp and a [Sennheiser] 421 a little off to the side, and I blended the signals. It sounded like the classic steel sound and it also worked for his lap steel.” The signal went through the preamps in the Neve console “with no EQ, no compression,” Pierce says. “We wanted to make the album as natural and unprocessed and uncompressed as we could. So I was always thinking about ways to capture the full richness of every single instrument and feature that and not have to carve it up in the mix later.”

Pierce recorded Piltch's acoustic bass with a single TLM 103 placed right at the bridge, through a Neve preamp and a Distressor EL8 for some light compression. For the electric bass, he miked the amp with a 421, but ultimately only used the Evil Twin DI signal. Drum miking was standard: 57 on the snare, 421s on the toms, 414s overhead, but augmented with a Coles 4038 as a mono overhead. “That's something Lee really likes,” Pierce says of the Coles mic. “We ended up using it quite a bit in the mix. It gives the sound a nice texture and it mixes nicely into the stereo image of the drums.”

“Working with Keltner was amazing,” he continues. “In rehearsal, he sits there with the lyric sheet and really studies what's going on in the song and really listens to the song and thinks about how he can make his contribution. He had the lyric sheet hanging there and made little marks on it. He's not just laying down two and four; he plays very dynamically with a lot of feeling, which made it more challenging for me because he'd play it one way in rehearsal and then feel it differently every single time.”

Later at Little Mountain, Wainwright did some vocal fixes (an AKG C-12A was the vox mic of choice, run through an API preamp and an 1176) and Chris Gestrin added some tasteful B-3 and Wuritzer parts to a few songs. But much of what's on the album is what went down live at Mad Dog. Most songs only needed a few takes; a few are even first takes. “We didn't mess too much with it,” Pierce says. “My philosophy is, if it sounds good, step away; you don't need to turn knobs. It's all about microphone choice and placement and listening carefully when you're tracking. If it's sounding great, leave it alone.”

“Everybody was extremely focused,” Townsend remarks, “and Loudon is such a lightning rod in the studio: The energy he puts out comes back to him. It was an amazingly consistent level of performance by everyone involved. It was really intense, but we also had a lot of fun.”

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L.A. GRAPEVINE

by Maureen Droney

The abrupt closure of Hollywood's Cello Studios (www.cellostudios.com) at the end of January sent its loyal clients—including producers Rick Rubin, Patrick Leonard, Don Was and Jon Brion, producer/engineer Jim Scott and resident composers Wendy Melvoin and Lisa Coleman—scrambling for new workplaces. Although many of the circumstances leading up to the historic facility's closure were semi-public

PHOTO: MAUREEN DRONEY



Gary Myerberg and Candace Stewart in Cello Studio 3

knowledge, the actual event came as a surprise, putting 22 staffers out of work with only a few hours of warning.

"As far as we know," comments Cello studio manager Candace Stewart, who helped relocate clients over the course of the tumultuous afternoon, "it's the first time in over 50 years that the studios haven't been in operation."

The multi-room complex at 6000 Sunset Blvd. is believed to have been originally constructed in 1952 and was called Western Recorders. In 1961, it was acquired and remodeled by legendary audio engineer

and equipment designer Bill Putnam, who changed the studio's name to United Western Studios. Staff engineers included such luminaries as Bones Howe, Wally Heider and Lee Hirschberg, and artists such as Bing Crosby, Nat King Cole, Elvis Presley and the Mamas & The Papas have recorded hits there, as well as Frank Sinatra's "Strangers in the Night" and the Beach Boys' *Pet Sounds* album.

In 1977, the 6050 building was purchased from Putnam by engineer and businessman Allen Sides. Shortly thereafter, 6000 Sunset was added to the complex that became Sides' Ocean Way Recording, and the two buildings together continued under Sides' ownership to produce many hits of the '70s, '80s and '90s, including albums by Rod Stewart, the Rolling Stones, Tom Petty, Elton John and Eric Clapton.

In 1999, Sides sold the 6000 Sunset facility, along with its vintage equipment inventory, for a reported \$7 million to successful Internet entrepreneur Rick Adams and his minority partners, who also owned a record label and a manufacturing company. Additional equipment was added and improvements were made to the complex, which was renamed Cello Studios. Wisely, however, the studios themselves were not altered and have retained the acoustic properties designed by Putnam.

Under the management of Stewart (who, along with producer John Porter, had been instrumental in facilitating the purchase and overseeing the transition) and director of technical operations Gary Myerberg, Cello Studios thrived as a haven for live music, hosting such artists as the Red Hot Chili Peppers, Elton John, R.E.M., the Barenaked Ladies, Stone Temple Pilots, Matthew Sweet and Blink-182.

It's no secret that in today's music business climate, even busy studios don't necessarily generate profits. Vintage equipment is expensive to maintain, and

—CONTINUED ON PAGE 144

NASHVILLE SKYLINE

by Rick Clark

There's always something cooking over at Alex the Great, the recording digs of producers Robin Eaton and Brad Jones. It's a cool, vibey compound that features a comfortable control room with a clean, slightly Asian feel to the light woodwork—it was built by MC5 rocker (and master woodworker) Wayne Kramer. Through the years, the duo has worked on a number of fine local and national pop and rock projects, including those for Butterfly Boucher and singer/songwriter Jill Sobule. Eaton worked on the *Shrek 2* soundtrack and Jones has produced The Shazam, Swan Dive and Richard Julian. Jones' lyrical bass playing has ended up on numerous high-profile releases by artists such as Elvis Costello, Sheryl Crow and Steve Earle.

I first met Jones in the early '90s, and I can say that he is one of the most self-directed and disciplined guys I know in music—or heck, just about anywhere.

Among other regular clients, Jones has enjoyed an ongoing production relationship with artist/songwriter Josh Rouse. His last album, *1972* (Rykodisc), was one of the low-key gems I kept returning to last year. When I found out that Rouse had returned to Alex the Great to work with Jones on his fifth album, I had to look them up.

The new album, *Nashville*, is another fine showcase for Rouse's intelligently thoughtful pop. It's a good release, driving with the top-down kind of stuff and, like *1972*, it features the excellent rhythm section of drummer Marc Pisapia and bassist James "Hags" Haggarty.

When I ask Jones about making *Nashville*, he says, "Josh brought in his same great band again and we tried to make it about live takes, some of which were done upstairs at his house in the little satellite studio that we'd set up for *1972*. It turned out to be a great way to work with Josh. About two-thirds of the album was recorded at studio proper [Alex the Great], but Josh still had his little satellite LE system for when he got a wild hair at 3 a.m. A good look into the

NEW YORK METRO

by David Weiss

homey sound he has up there is the song 'That's Just Life,' where you can really feel the size of the cozy little attic room, the chairs creaking and all."

Rouse says that *Nashville* started with singer/songwriter Daniel Tashian and Rouse recording "Life" and "Carolina" on Jones' Digidesign Mbox in his house. "I think a month later, in between tours, the band and I set up to record live at Alex the Great, where we recorded 'My Love Has Gone,' 'It's the Nighttime' and 'Saturday' in one session," Rouse says. "We got everything but vocals and a few atmospheric keyboards, which I did at my house with a couple of Neves [modules] and a Digi 001. So after recording these five songs, I took them home and listened to them from time to time, maybe doing a vocal here and there, or messing around with some of the Reason synths, which I used on 'Carolina' and 'My Love Has Gone.'

Bassist Haggarty points out that part of the album's organic charm comes from the fact that they did not use a click track. "It feels real natural, like a band that has been playing together quite a while, which

—CONTINUED ON PAGE 144

"Imagine there's no heaven. It's easy...if you try." What's not quite as easy—at first—is wrapping your head around the innovations of the Manhattan Producer's Alliance (MPA, www.manhattanproducersalliance.com), a group that's successfully deploying a different business model for New York City music-makers. And while the alliance is at it, it just may be able to help you with a thing or three to successfully migrate a pro audio studio to OS X—but more on that in a minute.

Consortiums have come and gone in Manhattan through the years, as producers and engineers have searched for a way to group together and conquer the high cost of working and living in the city.

While more than one winning formula is certainly possible, the MPA is one of the first in a while to go public with its own: form a cooperative, be highly selective about the membership and experiment with new ways of working.

"A couple of years ago, I had the idea that I didn't want to have a studio anymore," says MPA founder Joe Carroll on the transformation of his former business, TV music house Manic Moose Music. "I said, 'How can you be able to just write music?' All the guys in L.A. had their portable rigs, but in Manhattan, having a studio still counts for something. We said, 'How can we be in the middle of everything with the best of both worlds? Everyone working together with a

nucleus, but we have our own business."

The MPA is a cooperative business model that works like the board of a luxury co-op building, approving its members based on their qualifications. Once a member is accepted, he/she pays dues to the MPA as that member continues to operate his/her own businesses. For those who make the cut, membership has its privileges: full access to the MPA's infrastructure and resources, which include office space, a staff, a suite of networked, fully outfitted production studios and, most importantly, fellow MPA members.

"This is a natural fit," explains renowned advertising music veteran Kevin Joy of his decision to join the MPA. "You're pooling resources, real estate and knowledge. We're in the same business—providing music for our clients—and what we have in common is the New York mentality. Being one of the mega-centers, I think it's natural that the genesis is here in Manhattan."

The association—which currently includes Carroll, Joy, Rick Baitz (*The Vagina Monologues*), Steve Horowitz (*Super Size Me*), Stuart Kollmorgan (*Kenny*

—CONTINUED ON PAGE 145



From left: Steve Horowitz, Paul Special, Don Henze, Wade Tonken, Rick Baitz (on floor), Kevin Joy and Manhattan Producer's Alliance founder Joe Carroll convene at the alliance's headquarters in New York City.

Josh Rouse fiddles with his MiniDisc player outside of Alex the Great, where he finished up work on Nashville.

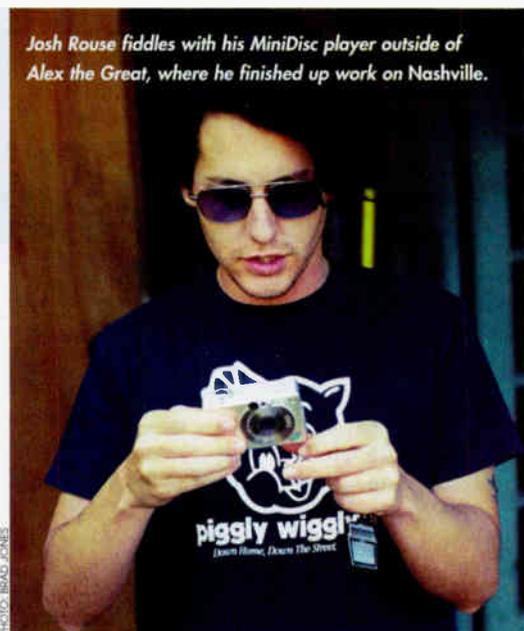


PHOTO: BRAD JONES

WHAT'S YOUR STORY, JORY? PRUM OPENS BAY AREA VIDEO GAME FACILITY

PHOTO: TANYA CONSTANTINE

Perceiving a need for a dedicated game audio facility in the San Francisco Bay Area, engineer/mixer Jory Prum opened the aptly titled studio.jory.org, a full-service sound design, recording and mixing suite capable of handling everything from band projects to "anything in 5.1." "When people need to record dialog or Foley, they go to facilities equipped to do film or music, working with people who maybe don't understand how to record 25,000 dialog lines at a time. That's something I do on a daily basis."

Up and running since September 2004, the 12x13 control room features a Pro Tools 5.1 Mix Quad system centered on a three-LCD "cockpit" and a THX CC4 controller. The core system works with a Minnetonka SurCode PL2 encoder for recording 5.1 streams.

The 17x13 tracking room, designed by Performance Media Industries, features Hear Technologies' Hear Back personal monitoring system and is fitted with 80 MSR StudioPanel acoustic treatments, 64 of which are paired so that they can rotate to alter the sound of the room. "With video games, there's no telling what you're going to need at any time," Prum explains. "The panels are mounted back-to-back with the absorber on one side and the diffuser on the other. So for most cases, you can just checkerboard them. It ends up making the room very dynamic; you can pretty much do anything in here."

The most recent "anythings" to come out of studio.jory.org include



Owner/engineer/mixer Jory Prum (left) at the three-LCD Master Control. Above: the tracking room with rotatable panels



music for *Psychonauts*, an indie video game by Double Fine Productions; *Kotor 2* and *Star Wars: Revenge of the Sith* from LucasArts; and music projects for Bay Area acts Jeff Titus,

Jeff Irving and The Wanton.

With the Game Developer Conference and Electronic Entertainment Expo both around the corner (at press time), Prum says his gaming work is steadily picking up speed. He adds, "I'm excited to provide important new services to game audio producers and developers in the Bay Area."

ROBERT EARL KEEN RECORDS WITH ED CHERNEY

PHOTO: KOCH RECORDS, NASHVILLE



Robert Earl Keen (standing) listens to Ed Cherney's handiwork

Texas roots-rocker Robert Earl Keen trekked to Glenwood Place Studios in L.A. to record his 11th album, *What I Really Mean*, with producer Rich Brotherton and engineer Ed Cherney. A crack band and special guests, such as country vocalist Ray Price and punk/bluegrass banjo player Danny Barnes, gathered in Glenwood Place's spacious Studio B, while Cherney captured Keen's latest on the studio's Neve 8068. The album will be released by Koch Records on May 10.

Q.O.T.S.A. MASTER LULLABIES AT BERNIE GRUNDMAN

PHOTO: DAVID GOGGIN



From left: co-producer/mixer/engineer Joe Barresi, bandmembers Joey Castillo, Josh "Baby Duck" Homme and Troy Van Leeuwen, and Brian "Big Bass" Gardner

Hot and heavy rock band Queens of the Stone Age, whose single, "Little Sister," has blazed its way all over alt-rock radio, mastered their new album for Interscope/Rekords, *Lullabies to Paralyze*, at Bernie Grundman Mastering (Hollywood). "The new Queens album came to me on a hard drive via Pro Tools," says mastering engineer Brian "Big Bass" Gardner. "I used my usual high-tech, high-end methods to polish their mixes; we have custom consoles built in-house with all-discrete electronics. My computer is the Audio Cube, and our 'floating point' bits are so staggering, no one would believe it. Between our low-level humor and joking around, Josh [Homme] and Joe [Barresi] made sure I didn't get carried away, and the original integrity of the mixes was maintained. I ended up backing off one-eighth of a dB, but still incorporated my magic dust."

INDIE BUZZ

HOPESFALL AT VUDU STUDIOS



From left, standing: bandmembers Adam Baker, Mike Tyson, Jay Forrest, Dustin Nadler, Joshua Brigham and assistant Anthony Vero. Seated: Steve Haigler and studio owner/engineer Mike Watts pile into the VuDu control room.

Hardcore/emo band Hopesfall "worked themselves into exhaustion" with producer Steve Haigler (The Pixies, Brand News) at VuDu Studios (www.vudustudios.com) in Freeport, N.Y., to record their latest release, *A-Types*, for Trustkill Records. Studio owner/engineer Mike Watts recorded the band on VuDu's Trident 90 board, which is paired with a Sony DMX-R100 digital mixer.

APPRENTICE CONTESTANT GETS LUMINOUS



From left: violist Mark Landson, engineer Chris Bell, Danny Kastner and Rick Neigher of *Song-Sync* wrap up a string session.

Danny Kastner, aka a "fired" guitar guy from *The Apprentice*, paid a visit to the studio bau:ton-designed Luminous Sound in Dallas to oversee a string session played by "new classical" group Neo Camerata for a project he's working on. Take a listen at www.kastner.com.

TRACK SHEET

SOUTHERN CALIFORNIA

Producer Jaeson Jarrett and engineer Vachek Aghaniantz re-edited and mixed the six-disc series, *The PPL Records Story, Volume III & IV* at Real Sound Studios (Glendale). Jarrett mastered guitarist Riki Hendrix's debut with engineer Tom Thomas...Don Henley's guitarist and keyboardist, Frank Simes and Will Hollis, respectively, and Cher's drummer Mark Shulman backed Jeff Kossack on a recent tracking project at Other Hand (Tarzana)...At Abbey Normal Studio (Burbank), Byrds co-founder Chris Hillman tracked and mixed his release with producer Herb Pedersen and engineer Scott MacPherson...The Village Studios (L.A.) welcomed Limp Bizkit to Studio D, where they tracked and mixed a new album with producer Ross Robinson and engineer Steve Evetts. Producer/engineer Greg Fidelman was in Studio A to work on Life of Agony's latest, and singer/songwriter Jack Bielan recorded vocals and mixed his new album with engineer David Reitzas. Talk show royalty Larry King recorded voice-overs in Studio F with producer Jason Deere and engineer Brian Scheuble...Donny Baker was at Elephant Symphony Studios (North Hollywood) mixing singer Amanda's debut, set for Japan release. Baker also recorded and mixed songs for artist "L" and Timothy Christian Riley (Tony Toni Toné) for Sony/BMG. Locals Wall of Tom finished mixing and mastering their debut.

NORTHWEST

Nettleingham Audio (Vancouver, WA) engineer Kevin Nettleingham mastered a Deep Elm Records compilation and recorded tracks for SmirK, Bend, Matt Molnar and fusion artist Jake Kot...Studio 880 (Oakland, CA) installed a Digidesign ICON in Studio A. Bay Area local Goapele christened the new board with producers Jeff Saltzman and Michael Urbano and engineers Brad Kobyczak and Marco Martin. Mark Needham stopped by to track a choir session for one of The Killers' new singles...Singer/songwriter Jenny Hlawatsch wrapped up her new album at Raven Recording (Lafayette, CO). Debbie Lobis Schmitt produced; Bill Thomas and Sue Shea engineered. Thomas also produced and engineered Denver hard rock band Semifreak's sophomore release.

SOUTHEAST

VP Records artist Lady Saw mixed a new single with Niko Marzouca at Circle House Studios (Miami); Marzouca later mixed Sony France artist NAJMA, produced by Philippe, at Audio Vision (Miami)...Loverboy guitarist Paul Dean visited Maximedia Recording Studios (Dallas) to complete overdubs from the Musician's for Disaster Relief concert held February 5 at Universal Studios Florida. Rob Wechsler mixed the project for CD and DVD. Meanwhile, engineer Hal Fitzgerald worked with Vanilla Ice and *Fat Albert* co-star J Mack Slaughter...Techno-tribal sextet A-S-H-S tracked their new release at SugarHill Recording Studios



Celebrating the new Cube-Tec Audio Cube and secure FTP server installs are (L to R) mastering engineer Gene Grimaldi, Cube-Tec's Rob Porretti and Oasis Mastering (Studio City, Calif.) studio owner/engineer Eddy Schreyer

(Houston) with engineer John Griffin, while songwriter/producer David Munday collaborated with producer/drummer Robbie Parrish on three separate projects...Engineer Steve Chadie recorded tracks for Los Lonely Boys' sophomore release with producer John Porter at Pedernales Recording Studio (Austin)...Atlanta's G&G Studios hosted mastering projects for hip hop group Shane and rap act Cydonia; Noel Goff engineered.

MIDWEST

Alice Peacock was filmed recording at Chicago Recording Company's (Chicago) Studio 4 for an ESPN feature. Rich Gentile produced; Mathieu Lejeune engineered. Ron Lowe recorded and mixed a Gato:ade commercial with singer Opal Staples, and Jeff Lane mixed tracks for a new Twista project...Indie rockers Fitzgerald mastered their new album, *Raised By Wolves*, with Greg Reierson at Rare Form Mastering (Minneapolis). Recording artist Victoria Acosta and soundtrack composer Matthew Smith also mastered at RFM...Quarter to Nine is tracking and mixing a new album at Aberdeen Recording Studios (Aberdeen, SD). Studio owner Tim Andersen produced; Vachik Aghaniantz and Gordy Zens engineered.

NORTHEAST

Dubway Studios (NYC) welcomed Green Day for the VH1/Original Media show *Live At VH1.com*. According to studio manager Steven Alvarado, the band was so loud, they got complaints from three flights up! A quieter Ghostly Records act, The Mobius Band, tracked 12 songs in five days with engineer Emery Dobyns...Incubus' Michael Einziger tracked at Threshold Music (NYC) with engineer Kato Khandwala; Eulogy recorded a demo with producer Tobias Miller and engineer John D'uva; and Alex Halpern did the same with engineer Khandwala...Sound on Sound (NYC) was packed with sessions from David Banner mixing with producer Knobody and engineer Pat Viala; Governor (Atlantic) cutting vocals with Just Blaze and Kris Lewis; Stacy Foster and Josiah Gluck pre-recorded tracks for *Saturday Night Live*; and Nelly mixed a song for *The Longest Yard* with Kevin Law and Rich Travali. ■

Send your session news to hjohnson@primediabusiness.com. High-resolution photos encouraged!

Cello was also dealt a blow from being one of many studios affected by the bankruptcy of Terminal Marketing, one of the audio industry's primary equipment leasing firms. Terminal's collapse left lawsuits in its wake, and Cello struggled under the burden of payments for a console it had never actually received.

Given those circumstances and changes in his other related businesses, by 2003, owner Adams was ready to divest himself of the studios. Since then, an exhaustive search for a new owner has been underway, spearheaded by Stewart and Myerberg, who have been determined to preserve the studios. Finally, with lawsuits, attorneys' fees and the possibility of settlement costs looming, Cello Studios LLC filed for Chapter 11 bankruptcy protection.

On January 28, 2005, dubbed Black Friday, clients and staff were informed of the closing. As word got out, people dropped by and an impromptu jam session ensued. The news quickly spread around town, with most in the business expressing sadness at the thought that the venerable studios might be slated for demolition. According to Stewart, however, sadness may be premature. The doors are locked, but the studios and equipment—including Studio 7's Neve 8078, Studio 2's Neve 8028 and Studio 3's 80-input API Legacy console—remain intact as the business winds its way through the courts.

Stewart, an industry vet who, prior to Cello, managed several other major studios, was fielding other employment offers at press time. However, she acknowledges the word on the street that there are still numerous parties interested in the facility—if the price is right. "I've never been in a studio that felt so much like home," she comments. "I really believe that certain studios will always have a place in the market. You can't keep a good thing down and I expect this phoenix to rise from the ashes."

North Hollywood's Royaltone Studios isn't closing, but it is closing its doors to the public. Certainly one of the world's most uniquely styled studio environments, the two-room facility has been bought by a company involved with red-hot songwriter/producer Linda Perry and will become a private studio for Perry's projects.

Built by Alias Records owner Delight Jenkins, the studio bau:ton-designed Royaltone opened in 1995. Two years in the making, it features the look and atmosphere of a European castle, complete with slate floors, skylights, heavy velvet draperies, antique furniture and an attention to detail

that even includes custom candlelit music stands.

Jane Scobie has been with Royaltone since shortly after it opened, and since 1999, she has been company president. Originally a manager of producers and engineers in her native England, she also consulted on management and marketing for various studios and audio manufacturers before coming to work for Royaltone. Her diverse music business background and service-oriented management style made her a perfect fit for the upscale facility, which attracted a wide variety of artists. "We've made over 100 albums at Royaltone during the past five years; I'm very proud of that," Scobie comments. "We've had the support of an amazing staff—including my colleague Roger Sommers, who oversaw technical and engineering operations—that made a great place for artists to come and record their music."

Albums worked on at Royaltone have included Alanis Morissette's *Supposed Former Infatuation Junkie* and *Under Rug Swept*, No Doubt's *Return to Saturn*, Melissa Etheridge's *My Little Secret* and Toto's *Minefield*. Also recorded and/or mixed at Royaltone were projects for Audioslave, Rage Against the Machine, Christina Aguilera and Vanessa Carlton, among others, as well as the soundtracks for *Moulin Rouge* and *8 Mile*.

"In some ways, I'm sad that the Royaltone legacy won't live on," says Scobie. "However, Linda [Perry] is an amazingly talented person who appreciates the special kind of place that Royaltone is. There isn't anything else like it. I really think it was the first studio in L.A. where the environment was designed to be creative for the artists from the moment they walked through the door. Working here, with the wonderful clients we've had, has been an amazing experience. Royaltone excelled at creating an artistic environment, but studios like that are going away really quickly right now. I've watched the industry change; now, I'm ready for a change myself. I'm looking forward to moving on to new ventures." Scobie can be contacted at 323/646-7345. ■

E-mail L.A. news to MaureenDroney@aol.com.



Jane Scobie at her Royaltone Studios office, which she called home since 1995

PHOTO: CURT KROEGER

adds a strength to the record. We had been playing with a lot of the songs during soundchecks around the 1972 tour."

According to Rouse, Jones likes to work quickly and instinctively. "Brad likes to work fast, so you end up getting something a little more raw that way," he says. "I think we probably did between 10 and 20 takes on each song. The whole time, Brad is giving arrangement instructions on the spot and we're changing parts and basically re-adjusting a bit on the first five to 10 takes. Usually by then, we can get it in one or two takes when everyone knows what the part is. My band is great at just 'getting' the song because they are all songwriters themselves. We did another day a few months later and I think we did two more songs. All in all, we spent seven or eight days actually recording and five or six mixing; a pretty fast process for a modern record."

The sound on *Nashville* is a little wetter and more ambient than much of Rouse's previous work. "Over at Alex the Great, we let our sound get more expansive this time, even at the risk of losing our 'reverb license' a few times," Jones says with a laugh. "We used all plug-in reverbs, but filtered down to sound more classic, more mid-fi. 'Why Wont'cha Tell Me What,' on the other hand, is just the sound of the main room at Alex with sloppy, not very close-miking. The only close-miked thing on the track was Josh's voice, which we then of course had to soak with slap.

"Josh was singing better than ever," Jones adds. "We tried to really feature his voice, not just in the mixes but in the arrangements, where in many places the band backs off and lets Josh have the stage for a minute. Those are some of my favorite moments on the record." Jones points out that the end of "Streetlights" is a particular highlight for him, stating, "After all that big echo-y orchestral build, it goes back down

to just Josh alone again, dry and close.”

Rouse says that Jones’ intuitive process was also employed to create *Nashville*’s string parts, which were done by Chris Carmichael. “Brad usually comes up with the parts on the spot, with no charts, just humming the arrangements, and then Chris does the strings, overdubbing them one by one,” says Rouse.

The great Al Perkins was also on hand to play pedal steel on a few songs. Rouse says, “We actually had to encourage him to play with a ‘country’ feel. I think he heard the songs and thought we wanted a more delay/wash-type sound, but we actually were looking for licks.”

Regardless, *Nashville* certainly isn’t “country” or even rootsy or Americana, as some have categorized Rouse’s music. I would call it pop music for adults.

Even though Rouse has just moved from Nashville to Spain, Haggerty says, “This record was a tribute and a thank you to the town and his friends and his experiences here. To me, this record is like a fall record—good with coffee in a comfortable chair on a crisp day. Although some might say, as someone did on Josh’s forum recently, that it is a top-down summer record.”

Either way, it is one fine record and one more testament to the range and quality of artistry coming out of Music City. ■

Send your Nashville news to MrBlurge@mac.com.

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the Shark/NBC) and Wade Tonken (Disney, Nickelodeon, Fox)—enables infinite combinations of talent and solutions that benefit both the composers and their clients.

As a result, Baitz, for example, can (and has) gotten an assignment to do a TV country music score, walked down the hall to find Tonken available to produce a guitar part and then watched the collaboration grow from there. “In 90 minutes, we had this entire song,” Baitz recalls of the PBS-commissioned project. “I sang vocals, he played a few tracks of guitar and did some high-level sampling, and it sounded great. That revealed to me that this was going to be a really good way to work, so I formally asked Wade to join me on the project as my producer.”

Besides providing the MPA composers with another avenue to bring work to each other, the arrangement also benefits the client. “In that case,” says Don Henze, business development director of MPA, “for a project on an indie-film budget, Rick

didn’t have to rent a high-end studio and pay an outrageously high hourly rate to do film-style mixing, and he didn’t have to hire a producer. He was able to just go into the other room.”

“The normal production process would require a separate facility for composing, mixing, sound design and audio post,” Tonken adds. Here, the benefit is that the client is hiring us all as a single entity. In today’s environment, we’re all being challenged to meet ever-shrinking budgets and our clients are also being challenged to get more music for film and TV on those budgets. With the alliance, producers and directors get the benefit of this pool of talent in a streamlined cost structure.”

The MPA hopes that there’s another group that can benefit from its existence: the entire Mac-using music community. And the MPA is willing to carry out a bold experiment to make that happen. With all three of its networked studios equipped with systems such as Digital Performer, Logic Pro, Pro Tools, multiple FireWire drives and Gigasamplers using MIDI over Ethernet, the MPA was running into the same nasty meltdowns, freeze-ups, plug-in malfunctions and bugs as everyone else attempting to transition to OS X. But not only is the alliance determined to make the switch from OS9, these lion-hearted pioneers are going to document the whole process in the hope that they can ease the transition for the large number of music professionals nervous about the question marks currently inherent in such an upgrade.

According to the MPA, the “OS X Project” comprises three stages: facility-wide transition from OS 9 to OS X; then to the G5 platform; and then to a fully centralized, multi-user, SAN-based environment. The process is already underway and will be followed up by a public database of technical documents, participant interviews and other media.

“In putting this together, we talked to a lot of composers and heard about who’s working with Macs and how,” says Carroll. “What becomes clear is that there’s not a lot of people running OS X in the world we’re dealing with—it’s maybe one in 10.”

“Going down the road to the centralized studio for the future, we know we have to go through the OS X wall to get there,” Tonken adds. “We said, ‘There’s no available data, no step-by-step manual for what you do [to upgrade to OS X] on these things we all use. Let’s do it and document it.’”

Making things even more interesting is the fact that the alliance members have no intention of interrupting their busy workflow to make it happen. While the potential of a

workstation system crash is certainly there, the cooperative situation and availability of additional, identically equipped studios down the hall mitigates the risk—somewhat. The presence of Digital Performer, Logic and Pro Tools on each workstation has made the MPA even more convinced that the OS X Project is a responsibility it has to take on. “Most people when they’re upgrading have just one platform,” points out engineer Paul Special, who frequently works at the alliance studios. “But if you say, ‘I have to make Digital Performer, Logic and Pro Tools work together in one room with the same hardware,’ that’s a bigger kettle of fish.”

While there were a number of choices for systematically carrying out the alliance’s test, according to Tonken, there really was only one true option: “To drop everything, turn on OS X and G5s, spend an incredible amount of money, buy only approved products and change everything would take a lot of time—that’s a fantasy,” he says. “We just upgraded one computer and that took a week of getting authorizations. In effect, we’ve decided to do dual-boot Macs that boot in both OS 9 and OS X. So when we’re in X and we come up with issues, we may say, ‘The fastest solution is overnight shipping. Let me get back to 9 and finish what we’re working on!’”

By documenting the process the MPA undergoes for the OS X audio upgrade path, Carroll figures the alliance can bolster the decentralized principles that it was founded on. “Because we’re so focused on the idea that composers can work off-site, then also come [to MPA’s studios] and do their job, we see that the potential benefit is that we can run everything off a server with a SAN, let off-site people have field access and work toward our goal of a seamless environment.”

As challenging as the OS X Project may be, Manhattan’s hearty band of producers know that there really is no other choice. “Unless you think your computer will last forever,” Tonken points out, “you have to move on.”

New York City update: As this column was finalized, New York City’s legendary Hit Factory announced it would be closing its doors for good at the end of February. In operation since 1968, the Hit Factory served not only as the facility of choice for the world’s top recording artists, but as a vital flagship of the New York City recording scene while at its peak. The significance of this news will be examined in-depth here next month. ■

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—FROM PAGE 28, AN OPEN LETTER TO APPLE
ments have some obscure header that the applications refuse to recognize.

And if trying to get the lists to display isn't hard enough, you should try to customize them. I'm one of those incorrigible rebels who actually likes to customize the patches in my synths, but once I've gotten patch names to show up, if I want to see my *new* names, I have to wade through and correct every single tag in the patch document with a text editor and pray that I don't make a typing error, lest the whole thing vanish when I try to open it. Steve, how about getting somebody over there in Infinite Loop to build a little application into Audio MIDI Setup that makes this process just a *wee* bit friendlier?

THE AMNESIAC SETUP SOFTWARE

Speaking of Audio MIDI Setup, where the hell is the Save command? Why can't I preserve anything I do in that program? The way it works now, every time I move a MIDI cable, I'm forced to rebuild my entire setup from scratch. I change my MIDI rig around a lot, depending on whether I'm working on a film project, performance piece or classroom lesson, or I'm testing some new hardware or software. Handling those kinds of changes was one thing that OMS did right: It let me keep a different file for each configuration and I could call it up whenever I needed it, whether or not the hardware was actually there.

But now, if I go to a configuration in Audio MIDI Setup and the computer doesn't see some piece of hardware that the configuration expects, it wipes it off the face of the Earth. If, God forbid, my MIDI interface is turned off, all of my cabling disappears. And every time I change anything in my rig, whether it's a new interface, module or USB keyboard, I have to build a new setup and say a permanent farewell to the old one. It's a pain, Steve. How would you like it if every time you opened a new document, you had to completely reconfigure your Ethernet, AppleTalk, sharing, AirPort, USB, SCSI, FireWire and printer preferences?

VANISHING USB PERIPHERALS

You've never been a big fan of USB, and I don't blame you. If I never see a USB audio interface again, it will be much too soon. It's bad enough trying to force MIDI through a protocol that has no reliable clock, but to cram audio through there is asking for trouble, especially when, as some interfaces claim they can do, you try to send four channels at 96 kHz. But my problem isn't about bandwidth. I don't know if this is your fault or USB's, but whenever I'm using a multitrack application with a USB interface and I'm mixing multiple tracks down to just two, there

comes a point when the output takes off into the Twilight Zone: The sound stops and the interface disappears from the hardware menu. The only way I've found to bring it back is to turn off the interface, turn it back on again, call up the application's hardware menu and pray to the gods of connectivity (who generally offer 2-to-1 odds against) that it shows up. If it doesn't, restart the computer—because this is one nasty situation when even Force Quit won't work.

NO SLEEP FOR THE WEARY

Do you know that if you're doing audio on the Mac, you can't ever let your computer

sleep? That's the word I got from several manufacturers who tell me that when the Mac wakes up, their hardware won't work. In the case of M-Audio's new FireWire Solo, the computer just won't see it. In the case of Digidesign's Mbox, the computer sees it but that nice polite interface transforms into a high-SPL noise generator—as soon as you put audio through it, the most godawful digital hash pours from the outputs, making little smoke bombs out of your tweeters.

THE DISAPPEARING FIREWIRE DRIVE

I told you before about the problems I had installing OS 10.3, but this little glitch made

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them even worse than I described. You see, when I realized I needed to back up my internal system drive so that I could de-install the brand-spanking-new operating system that Pro Tools wouldn't run on, I went out and bought a 120G FireWire external drive. The backup went okay, but the next day, after I had wiped the system drive, my lovely new external drive wouldn't show up on my desktop. Fighting panic, I called a friend who suggested I remove the FireWire drive from its case (voiding the warranty, of course) and install it on an internal bus inside the Mac. Then I'd know if the drive was screwed or if it was something else. I did that and the

drive came right up, so I knew at least I hadn't permanently lost about 60 gigs (and 20 years') worth of data.

So I went to a local store to buy an enclosure in which to put the drive so that I could keep working. (It cost about two-thirds as much as the drive.) It worked great for the first day, but the next day, the drive once again failed to show up on the desktop.

After pulling out some more hair, I discovered that I could get the disk to show up on my laptop *if* I ran it in OS 9. So I thought, "Okay, I'd better do another backup." I went back to the store where I had bought the enclosure, exchanged it for a *second* FireWire

drive, brought it home, daisy-chained it from the laptop with the first drive and copied all the data from it.

Was this just a bad run of luck with some hardware? Not on your life. This was a known problem, but there was—and still is—nothing about it on Apple's site. A number of online sources had the truth: There was a nasty conflict between some versions of OS 10.3 and the "Oxford 911" FireWire chipset that's found in many, if not most, external FireWire 400 drives.

Here's what happens: If the power to your drive is off when you boot your computer and you subsequently turn the drive on, then the disk directory gets corrupted. It can also happen if you turn *off* the drive while the computer is running or if you hot-connect a drive. This corruption is not something where the Mac says, "Hang on a second, let me fix something on your drive." Instead, it causes the drive to disappear from the desktop and even Disk Utility, at least at first, can't bring it back.

When you've got as much of your life backed up on your drive as I do, this can be a little disconcerting. From what I read on the forums, a lot of people have had their pins knocked out from under them by this, and it has also shown up in some of the printed magazines, but Steve, you've never addressed or admitted it.

Fortunately, as I discovered from sheer experimentation, Disk Utility *can* bring it back, but it takes about 15 minutes for the software to just find the drive and another half-hour or so (although I imagine this varies with the size of the drive) to repair the directory. Of course, my Mac can't be doing anything else while all this nonsense is going on. So have I found a fix? Yeah: I never, ever turn off the drives.

RANDOM ANNOYANCES

Who decided that from now on you can only move a window by grabbing its top? When you have as many windows open as I usually do, the last thing you want to do is go searching for a title bar when you're trying to move something out of the way.

And what's the deal about non-standard characters in file names? I know there are rules in UNIX about this—how they can't contain slashes or question marks—but why are they enforced so inconsistently? If I copy a bunch of old files from one disk to another, sometimes the process will stop dead when it finds a file—inevitably, deep inside some sub-sub-sub-sub-folder so it takes five minutes to find it—with a slash in it (I have a lot of these as I like to put dates on things), but sometimes it just pushes it on through like stewed prunes. And sometimes when

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I'm copying, the thing will hang up on some invisible file called "_Icon." What's up with that? If I can't see it and the system can't copy it, why the hell is it trying to?

And how about while you're wasting all that time with that "optimizing" thing you do, you take care of that "fix permissions" nonsense so I don't have to do it manually every time I start a studio session? Because I know if I don't, all of a sudden at a crucial point, I'll be denied access to some critical file and everything will grind to a halt. And why the hell do I have to deal with "permissions" in my home studio anyway? It's *my* machine, no one else uses it, so why can't I just do what I want with it?

Steve, I love your machines and I can't imagine life without them. And you know that I'll keep buying them as long as you keep making them. But a lot of us creative types bought Macs in the first place so we wouldn't have to deal with this horseshit, and for a good many years, we didn't. You'd make a lot of us happier if you could make it smell nicer or, better still, sweep it outta here.

Your pal,
Paul

Paul D. Lehrman once sat at a blackjack table with Steve Wozniak. Paul lost.

—FROM PAGE 24, WITH SNAKE OIL COMES SCALES
shot outdoor scene can actually have considerably more depth of field than you yourself see in the real world—so, wah, freakin' la, the screen beats the scene.

But bad scaling is everywhere. Good scaling is rare. It's that simple. And this SDI-fed system is so good that after a year, we still remark on its quality with almost every DVD we drop in the tray. It is basically magic.

Again, real never-been-scaled HD, mapped dot-for-dot, easily beats anything else. But it almost never happens. And *sooo* much exists on standard DVDs right now.

With the HD Leeza, most well-transferred DVDs look better than 75 percent of the "HD" that comes at me from the sky or out of a wire in the ground. Really. But you have to go SDI to get the full benefit. Reasonably priced SDI players are very rare, and the relatively simple low-cost hacks to convert \$75 players are hard to find, as well. But if you want to watch near-HD quality from Netflix now, it is worth finding an SDI player and gluing it to your screen with an HD Leeza.

My HD Leeza currently talks to my plasma DVI. Dot for dot. The output

is spookily sharp (this is a technical term in Scarbolia), essentially noiseless, surprisingly film-like and *it can be reprogrammed in seconds to match the native resolution of almost any display.* So there.

WHY DID I WRITE THIS?

Well, as you can see, it certainly isn't an actual review. If you want tech info, go to keydigital.com. I just wanted to address any of you who may have been wondering if there is a way to get truly good imaging from multiple sources of different resolutions on your flat-panel display. Well, there is. And just to make sure your fun is doubled, Leeza comes in at about one-third the price of other serious contenders.

AND WHY DID I TAKE SO LONG?

That's easy. I've been busy. You see, there are *a lot* of DVDs out there. Very crisp, sharp, precious DVDs...

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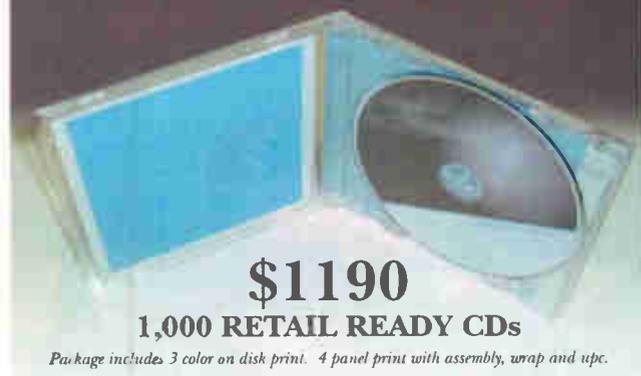
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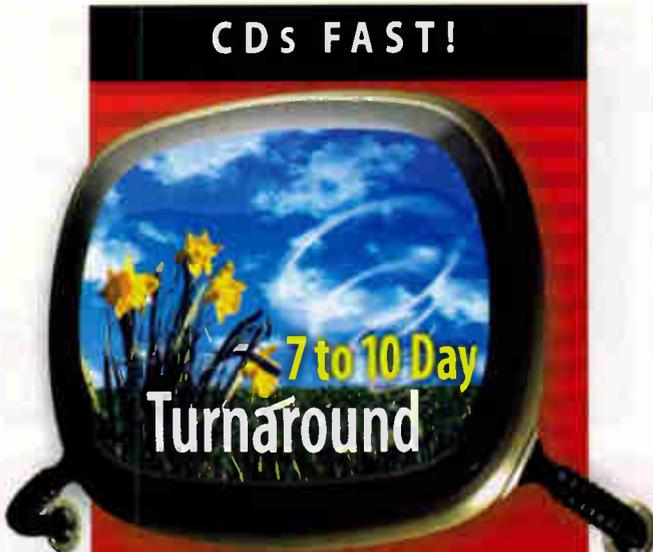
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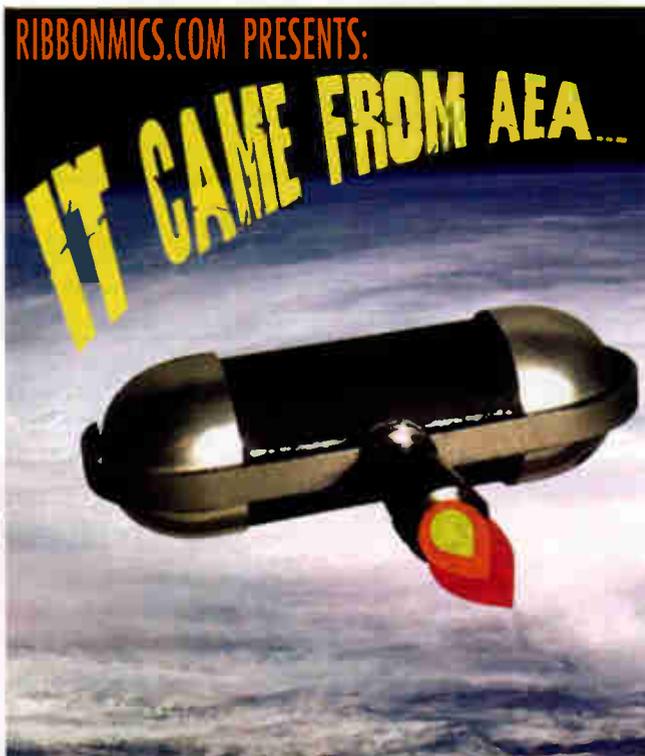
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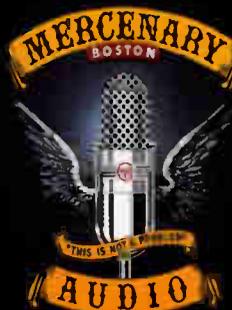
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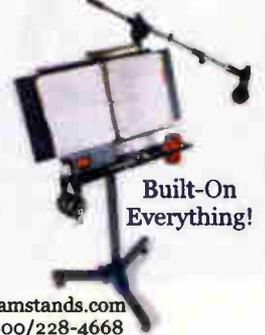
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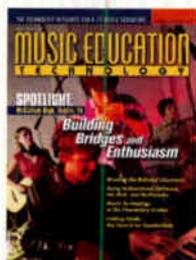
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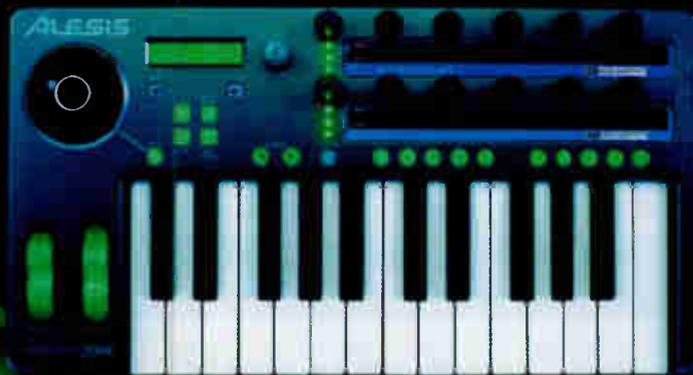
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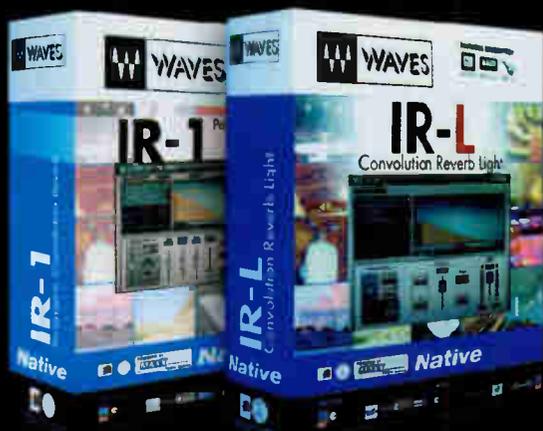


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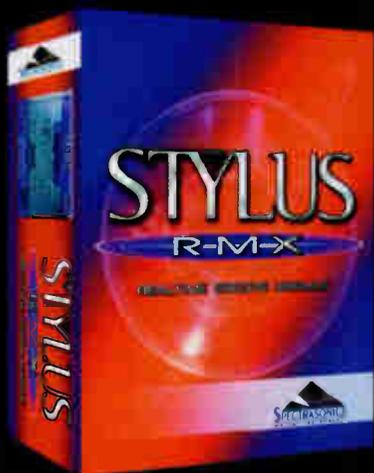
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PreSonus Central Station™ A Console Master Section Without the Console!

The PreSonus Central Station is the missing link between your MOTU recording interface, studio monitors, input sources and the artist. Featuring 5 sets of stereo inputs (3 analog and 2 digital with 192kHz D/A conversion), the Central Station allows you to switch between 3 different sets of studio monitor outputs while maintaining a purely passive signal path. The main audio path uses no amplifier stages including op amps, active IC's or chips. This eliminates coloration, noise and distortion, enabling you to hear your mixes more clearly and minimize ear fatigue. In addition, the Central Station features a

complete studio communication solution with built-in condenser talkback microphone, MUTE, DIM, two separate headphone outputs plus a cue output to enhance the creative process. A fast-acting 30 segment LED is also supplied for flawless visual metering of levels both in dBu and dBfs mode. Communicate with the artist via talkback. Send a headphone mix to the artist while listening to the main mix in the control room and more. The Central Station brings all of your inputs and outputs together to work in harmony to enhance the creative process and ease mixing and music production.



Gator GRC-Studio-2-Go™

Road-worthy case for your MOTU gear

The GRC Studio-2-Go is a road-ready, ATA style 2U rack case constructed of rugged Polyethylene with an extra, plush adjustable laptop compartment with web strap tie-downs for extra protection. Permanently connect your PowerBook, Traveler and rack gear through an accessory hole between compartments — convenient!



Apple AppleCare™

Extend the life of your PowerBook. Of course, the tech support wizards at Sweetwater can help you with any operational issues you might encounter, but if you want complete peace of mind, the AppleCare Protection Plan is the perfect insurance policy. No matter what dangers may meet your portable rig on the road, with AppleCare, you're totally protected.



Call the DP 4.5 and MOTU experts.

Mackie Onyx Mixers with Optional Firewire Interface

High-quality compact mixers with direct connection to your studio

When you're on the road and looking to record a full band, the Onyx series of mixers from Mackie is the perfect complement to your MOTU Traveler. Whisper quiet and built like a tank, Onyx mixers feature an all-new mic preamp design capable of handling virtually any microphone. With the optional Firewire card, you can connect an Onyx mixer to your laptop with a single Firewire cable and have all the extra mic preamps and line inputs you need to capture every drum mic, vocal mic, individual synth output and DI the band throws at you. Since Digital Performer works seamlessly with multiple Core Audio devices, configuring a Traveler/Onyx system is a snap.



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.

Mackie Control Universal and Extender

Automated hands-on control for the DP 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 pulling your hands on Digital Performer itself.



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World Radio History

360 Systems DigiCart

Teaching an Old Cart New Tricks

The heir to the cart machine, 360 Systems' (www.360systems.com) DigiCart, is ubiquitous in the world of live radio and TV broadcasting and it's one of the most useful tools in the audio room. I've been doing sports television audio for a number of years now, and just about every TV truck I work in has at least one DigiCart—sometimes two, with the second dedicated to GPI-triggered sound effects used to accompany "wipes" created by the video switcher.

STARTING ON TIME

For some reason, DigiCart's Setup menu defaults to an On Completion setting, which means that the unit can't start a second cue until the first one plays all the way through. This is not a problem with short effects such as car horns or gunshots, but if you only want to use part of a long music cue and then play a second sound, then you're out of luck. However, if you select Immediate Restart rather than On Completion from the Setup menu, the problem is solved.

THAT FILE FORMAT

DigiCart relies on proprietary technology, so a common complaint from operators is that they can't take files "home to play." Also, all editing must be done on the platform, and it's extremely limited with only in- and out-point edit functions. Anything in the middle of the cut must be taken to another platform in real time, edited and reloaded in real time to the DigiCart.

Here's a useful workaround: If you need to start a piece of music off-beat or just want to build a fade-in, choose the Fade In (or Out) function in the Edit menu and punch up a short fade of about four to eight frames. For maximum edit resolution, you can scroll over to Beats (hours/minutes/seconds/frames/beats) and really zoom in on the exact location in which you need the edit to happen.

TRIGGERS A-PLENTY

The optional DigiCart Mini Remote—a panel about the size of a hardbound novel—has 16 hotkeys for preset triggers, and function and cursor keys to maneuver around directories and files. If you need

dozens of hotkeys, just use a standard QWERTY keyboard. On mine, I cover the keys with 1/2-inch round stickers so I can write cue names on the tags, although this makes it tough to type as I can't remember where the letters reside!

RUNNING S-L-O-W?

Common problems I encounter are that the DigiCart functions seem to slow down to a crawl, scrolling takes forever and the time lag between pressing Play and hearing the file takes several moments. Disarming the Digital Output mode function fixes this condition. When you're not using the Digital Output mode, it's best to leave it off; however, if you're using it, the machine almost never hiccups when actually operating in the Digital mode.

CRASHES, FREEZES

All DigiCarts freeze up from time to time, so first try the soft-boot function: Push and hold the SEC and the DNET xfer buttons on the face of the box. Unfortunately, most problems require a hard boot—physically turning off the machine to restart—not to mention that the power switch is inconveniently placed on the back panel. If you're lucky, the maintenance folks put a power strip switch in a reachable place, but if not, you either have to pull out the whole box or get to the back of the racks to move the switch.

THE NAME GAME

DigiCarts are shipped pre-loaded with Hollywood Edge's sound effects sampler. Hopefully, it's still on your hard drive when you use the box, as that collection has some useful cuts, making it a good place to start when searching for sound effects. Speaking of searching, make sure that you use names that make sense. A gunshot should be called GUNSHOT and not 357



MAGNUM, as you may need to find a cue in a hurry. If you use the Sort by Name instead of Sort by Index function (found in the Setup menu), you may scroll through the whole directory before you remember that sound's cute moniker. Call it GUN357 or SHOTMAGNUM—start with the obvious so it's easy to find later.

EVERYTHING IN ITS PLACE

In TV, the TD, graphics, tape and video operators get all the time they need, yet most audio types have only a moment to prepare and get it right.

To find things fast, I set one or two hotkeys in my personal directory where I can quickly access my most needed sound effects. I place the most useful ones near each other. I then put theme and highlight cuts in familiar places, so no matter what show it is, I always know that my highlight cuts will be in a certain place; the same goes for my theme and promo pieces.

Because you can assign numbers to cues as you record or transfer them, I group sound effects cues or music cues with a convenient numbering system. I put theme cuts in the ones and teens, the highlights in the 20s and 30s and tease and feature cuts in the 100s. This helps find music and cues in a hurry, which happens to be the mode in which we always seem to work. ■

Rom Rosenblum is an A-1 (mixer) for sports TV in the San Francisco Bay Area, with excursions to The Olympics, Super Bowls, World Series and roller-derby broadcasts.

AUDIOFIRE

FIREWIRE RECORDING

AUDIOFIRE12

• 12 +4dBu Inputs • 12 +4dBu Outputs • 24BIT 192kHz Sampling • MIDI INPUT/OUTPUT • Word Clock Sync



AUDIOFIRE8

• 2 Universal Inputs with mic preamps, meters, trim, and channel inserts • MIDI input/output • Headphone Output
• 6 +4dBu Inputs • 8 +4dBu Analog Outputs • S/PDIF input/output • Word Clock Sync



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