Bridge School Benefit • Digidesign Venue Tips • Lehrman on Virtual Instruments • Classic Track: 'Pump It Up'

WWW.MIXONLINE.COM • JANUARY 2007

MIX

PROFESSIONAL AUDIO AND MUSIC PRODUCTION

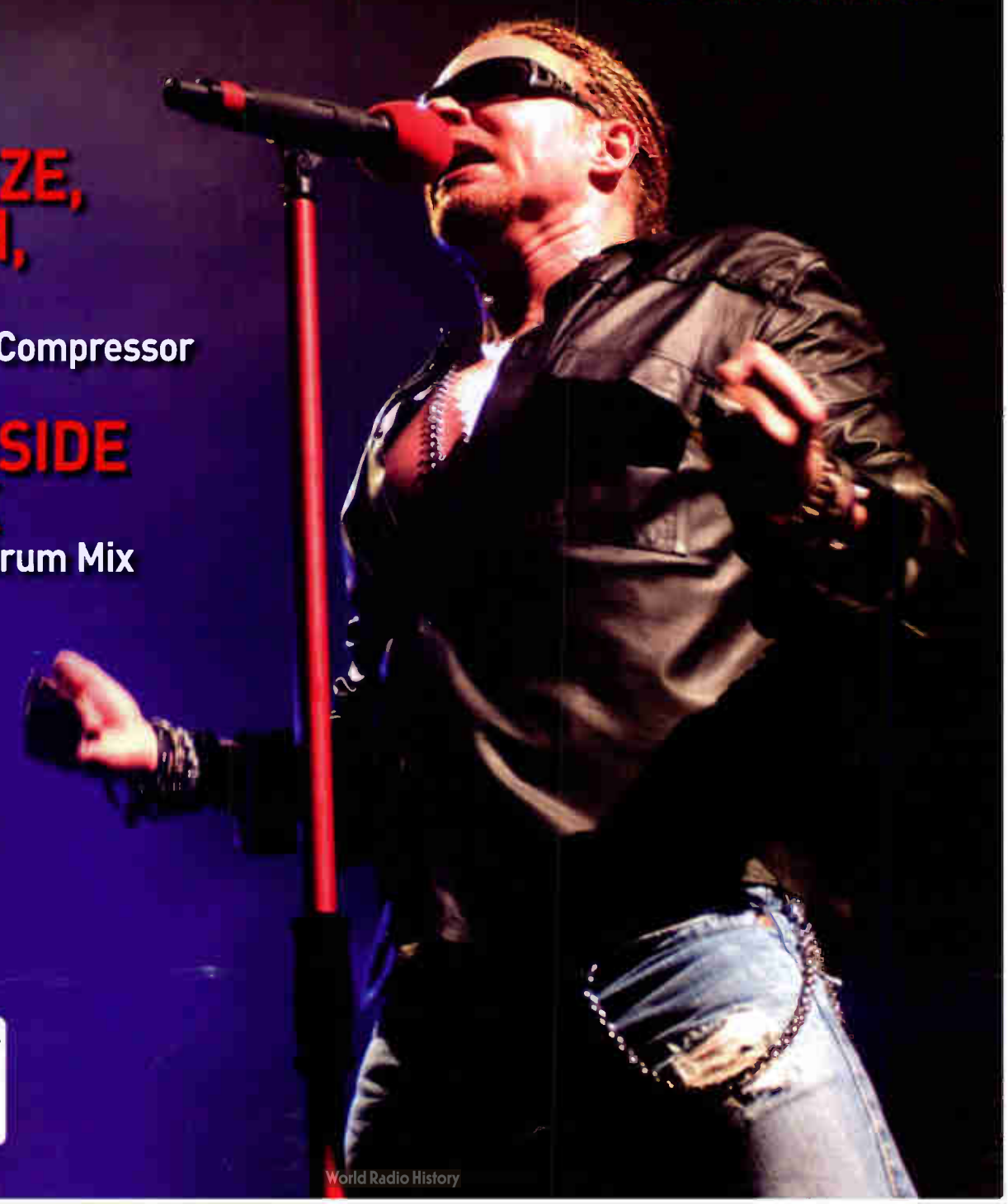
LIVE SOUND ISSUE

on the road with
- GUNS N' ROSES
- DIXIE CHICKS
- ALICE IN CHAINS
- PANIC! AT THE DISCO
- OK GO

plus
- THE BIG BOARDS
- SYSTEM CONTROL

SQUEEZE, PUNCH, SLAM!
Choosing a Compressor

THE INSIDE TRACK
Shaping a Drum Mix



$6.99US $8.99CAN
01
0 09281 01817 9

Dolby® Media Producer

Designed to Match Your Creative Vision

Imagine—everything you need to master your packaged media audio files in one comprehensive suite. **Dolby® Media Producer** consists of three separate Mac OS® X applications, available individually or as a complete package. The suite provides all the tools required to master audio files for DVD-Video, DVD-Audio, HD DVD, and Blu-ray Disc media.

Supported technologies:
Dolby Digital Plus
Dolby Digital
Dolby TrueHD
MLP Lossless™

Dolby Media Encoder

is a non-real-time client/server application that includes three Media Encoder Clients. Individual operators can submit jobs locally or to a centralized facility server. Comprehensive project management capabilities allow user control of functions, including job prioritization. The encoder also supports playback of source and encoded files for monitoring.

Dolby Media Decoder

is the essential real-time professional software reference decoder. Designed to run on a local computer, it decodes and monitors all supported codecs and Dolby consumer listening modes. Transport control enables audio-to-video synchronization via standard 9-pin protocol and Apple® QuickTime® video files.

Dolby Media Tools

saves you time and money by enabling the repair and update of previously encoded audio files with no reencoding. Optimized to run on a single computer, it features metadata editing, file trimming, timecode striping, and file concatenation.

All three Dolby Media Producer products are now shipping; contact your Dolby dealer today for a demo.

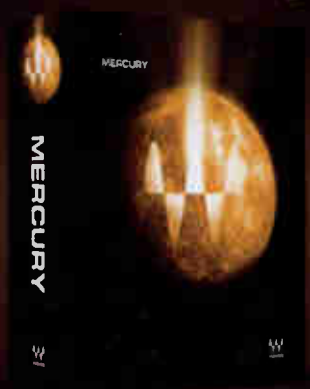
DOLBY®

www.dolby.com

Rise above.

WAVES MERCURY

A massive collection of 91 stellar processors with over 200 component plug-ins.



- **Waves V-Series** 3 New Vintage Models
- The Entire **Diamond** Bundle
- **The L-Series** Ultramaximizers™ and Multimaximizers™
- **MaxxVolume™** All-in-one Dynamics Processing
- **GTR** The Ultimate in Guitar Sound Technology
- **360° Surround Tools** Complete 5.1 Processing
- **Waves Tune** Pitch Correction and Transformation
- **DeBreath** Automatic Breath Eliminator
- **IR1 & IR360** Parametric Convolution Reverb
- **Z-Noise** Advanced Dynamic Noise Reduction

www.waves.com

WAVES

THE **SYMPHONY** SYSTEM

The Most Powerful Audio Workstation Available

The Symphony System combines Apogee's legendary X-Series and Rosetta Series converters with Apple's revolutionary Mac Pro and Logic Pro audio workstation using the 32-channel, Symphony PCI card.

Symphony PCI E Card
32 Channels of I/O per card &
up to 96 channels per system

BEST SOUNDING

The most sonically advanced audio hardware interfaces combined with the most advanced music creation and production tool

HIGHEST PERFORMANCE

1.6 milliseconds at 96k and up to 192 simultaneous channels of audio

GREATEST VALUE

A fraction of the cost of popular card-based, DSP systems

APOGEE
SOUND AMAZING

www.apogeedigital.com

A recording studio just isn't complete without **Eventide**

Fifteen of Eventide's best effects from the past thirty-five years for only $1195

Universal

REMIX

Eventide®

call 201-641-1200 / email: audio@eventide.com / or visit: www.eventide.com

Superior Sound for All Spaces
D-Show Profile

Experience the pristine sound quality of VENUE in even the smallest rooms. Meet D-Show Profile. With its small footprint, studio-grade sound quality, flexible options, and easy-to-use D-Show software, D-Show Profile goes where larger consoles fear to tread.

Unrivaled Flexibility

Works with all VENUE components and seamlessly integrates with Pro Tools, providing unrivaled flexibility with any application.

D-Show 2.5 Software

Provides unparalleled system control and complete show file portability between D-Show Profile and D-Show.

General Purpose Interface

Combined with the Events list, GPI extends control to external gear, enabling you to perform multiple actions at the push of a button.

Powerful Plug-in Processing

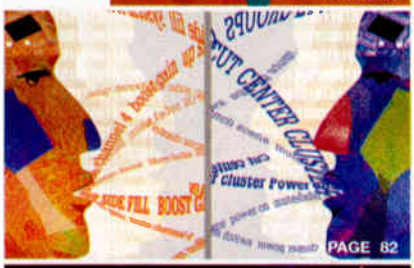
The availability of over 100 TDM plug-in versions of the most coveted outboard gear puts amazing processing power at your fingertips.

Artist-Driven PQ Monitoring

Give performers control over their own snapshot-recallable monitor mixes with the optional Personal Q (PQ) monitoring system.

Learn more about D-Show Profile and VENUE at www.digidesign.com/venue.

MIX
PROFESSIONAL AUDIO AND MUSIC PRODUCTION
JANUARY 2007, VOLUME 31, NUMBER 1

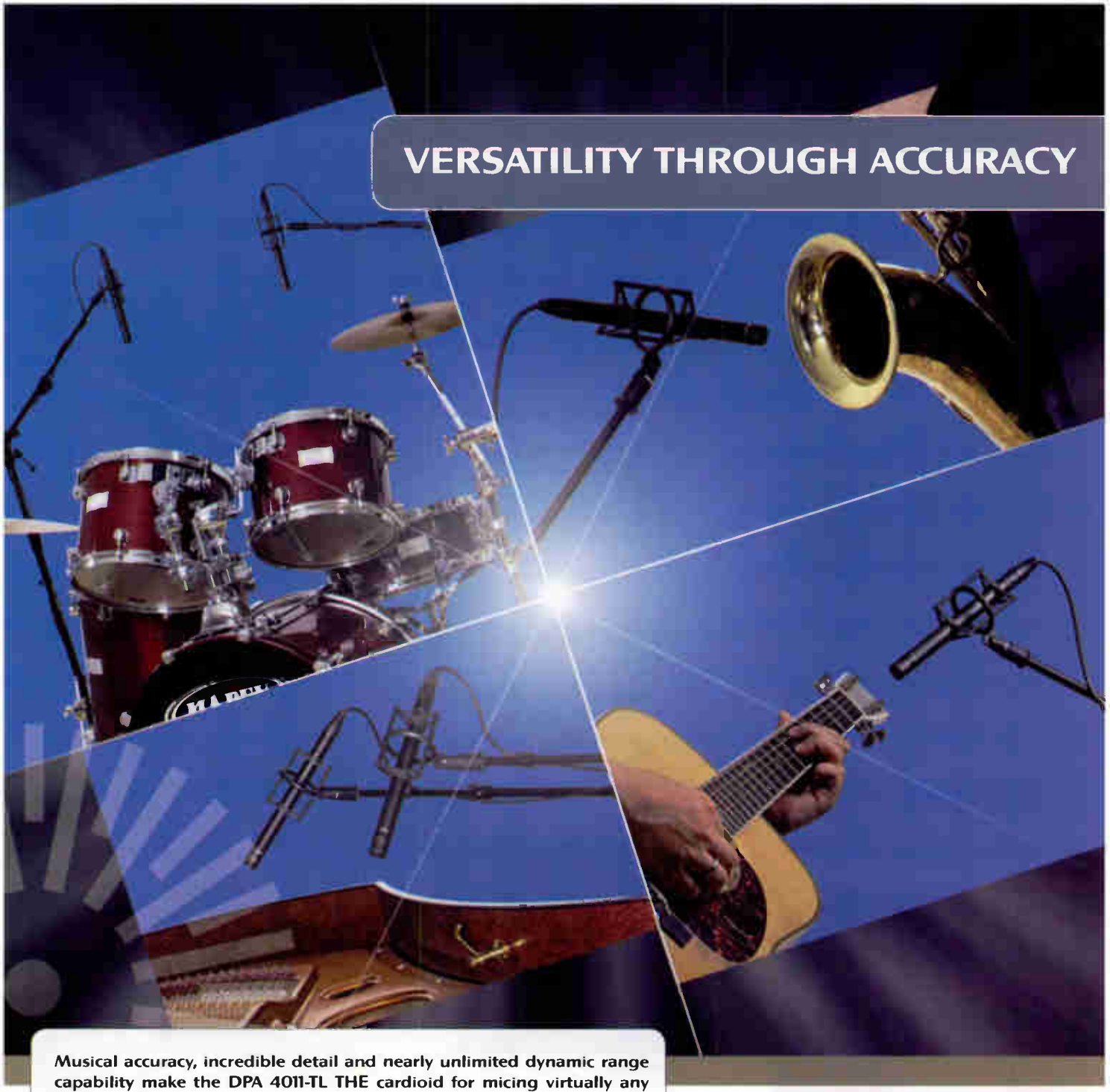


features

On the Cover: The Guns N' Roses current tour sees front-of-house engineer Toby Francis and monitor engineers John Sheldon and Andy Ebert reinforcing an already strong rockin' band. See page 54 for a complete tour profile. **Photo:** Paul Natkin.

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

(Volume 31, Number 1) is ©2007 by PRISM Business Media, 9800 Metcalf Ave., Overland Park, KS 66212. Mix (ISSN 0164-9957) is published monthly. One-year (12 issues) subscription is $35. Canada is $40. All other international is $50. POSTMASTER: Send address changes to Mix, PO Box 15605, North Hollywood, CA 91615. Periodicals Postage Paid at Shawnee Mission, KS and at additional mailing offices.This publication may not be reproduced or quoted in whole or in part by printed or electronic means without written permission of the publishers. Printed in the USA. Canadian GST #129597951; Canada Post Publications Mail Agreement #40597023. Canada return address: DP Global Mail, 4960-2 Walker Rd., Windsor, ON N9A 6JS.



Musical accuracy, incredible detail and nearly unlimited dynamic range capability make the DPA 4011-TL THE cardioid for micing virtually any instrument.

Adding nothing to the sound, our uncompromising approach to microphone design has made DPA microphones the choice of discriminating professionals for both live and recorded sound for years. The new TL versions increase the resolution and detail of these legendary models.

Not only will the 4011-TL be the most musically accurate cardioid microphone you own, it will also be the most versatile.

Find out more at www.dpamicrophones.com or call us at 866-DPA-MICS

DPA 4011-TL

The microphones for sound professionals with uncompromising demands for musical accuracy

DPA MICROPHONES

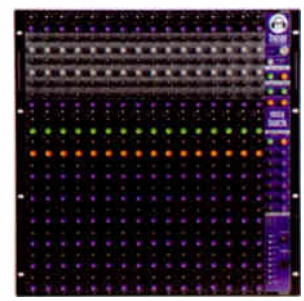
DPA Microphones, Inc., 2432 North Main Street, Suite 200, Longmont, CO 80501, Ph: 303 485 1025, Email: info-usa@dpamicrophones.com

www.dpamicrophones.com

contents

sections

technology



columns

departments

UHF-R. **DO MORE.**

More Productivity. More Reliability. More Control.

UHF-R™. Premier Wireless Technology.
Redefining wireless for the largest, most demanding applications.
UHF-R helps you master the complexities of large-scale wireless installations with greater efficiency, enhanced flexibility and complete control. With fast setup, robust wideband performance, full PC system monitoring via Wireless Workbench Software and Shure audio quality, UHF-R frees you to do even more in less time.

Wireless Workbench® Software
s included. Experience it firsthand at
www.shure.com/software.

UHF-R ADVANCES

Advanced control | Shure's Wireless Workbench Software, Ethernet and USB compatibility give you comprehensive PC control and monitoring of large systems.

Unparalleled RF performance | Advanced Track Tuning shifts the RF filter along with the selected frequency – maximizing isolation from interference and preserving signal integrity with UHF-R's extended bandwidth. 2400 selectable frequencies across a 60MHz band, up to 40 compatible systems per band.

Superior sound quality | Shure's patented Audio Reference Companding delivers crystal-clear audio, far superior to conventional wireless.

Intuitive usability | Fast automated setup saves you time and effort. UHF-R usability innovations include networked automatic frequency selection, infrared transmitter sync and smart, menu-driven system operation.

Road-tested durability | Rugged components – including a compact, lightweight bodypack – withstand the abuses of the road and deliver consistently reliable performance.

Audio
Reference
Companding

SHURE
It's Your Sound®

www.shure.com

Some Things Never Change

Thirty years ago, jingle singer/voice-over artist Penny Riker and musician/engineer David Schwartz saw a burgeoning industry of pro 16/24-track and garage 4/8-track studios in the San Francisco Bay Area—however, detailed data about recording facilities was nonexistent. They dreamed up the idea of a local recording studio directory, and with some help from music magazine *BAM*, *Mix* magazine (originally called *The Mix*) was born in 1977.

The first issue of *The Mix* had profiles on 112 Northern California studios and some articles on recording techniques. The concept caught on. The second issue presented Southern California facilities, followed by a "New Products Directory" for the 1978 New York AES, featuring hot releases such as the Ursa Major Space Station and Stephen St.Croix's Marshall Time Modulator. *The Mix* grew, expanding to include studios across the U.S. and listings of other essential audio services. By 1980, *The Mix* evolved from a large newsprint directory to standard magazine size, and the name was changed simply to *Mix*, increasing its role as the trade magazine serving audio pros everywhere.

The audio industry has changed greatly since 1977. These days, it's hard to even imagine a world without cell phones, the Internet, computers, e-mail, MIDI, CDs, DVDs and DAWs. But in that era when *Star Wars* created a sensation, vinyl records were king and 8-tracks were the hot format, 1977 was a significant pro audio milestone, with the birth of Apple Computer, the Solid State Logic Console and Ed Long's debut of the first Near Field™ monitor. Helping to fuel the coming of the project studio movement, Tascam followed its successful 80-8 ½-inch 8-track with the 90-16, the first 1-inch, 16-track recorder. The year also saw the release of the first commercial digital recordings made on Tom Stockham's Soundstream Digital system. Digital production was in its infancy and pro audio was in for a wild ride that still continues.

As someone who was there to witness the revolution (many readers—and *Mix* staffers—weren't even born in 1977!), it would be easy to launch into a tirade about those tough days when we walked five miles to school in the snow [*Uphill both ways, George?—Eds.*]. Today, when affordable digital production tools are plentiful, some things are easier, but creating product you can get paid for (and collecting) is no easy task these days. And while cell phones, text-messaging and e-mail simplify some tasks, they also create an atmosphere where escape from the pressure of everyday life is difficult. These days, being a manufacturer, engineer, studio owner, artist, retailer or record label is no picnic. The pace can be relentless, and everybody's multitasking, whether you're a front-of-house mixer/tour manager or studio manager/tech/bookeeper/janitor. It's the same around here: We once just put out a magazine; now we're doing Websites, books, blogs, podcasts, vlogs, newsletters, online seminars and more.

But some things never change. We, like you the reader, have made audio our profession, our passion. We love what we do and are continually impressed by stories of survival, success and those who create excellence in today's tough environment. You inspire us. And with that in mind, we thank you for your support and look forward to even better days ahead.

George Petersen
Executive Editor

MIX®

EDITORIAL DIRECTOR Tom Kenny *tkenny@mixonline.com*
EXECUTIVE EDITOR George Petersen *gpetersen@mixonline.com*
SENIOR EDITOR Blair Jackson *blair@blairjackson.com*
SENIOR EDITOR/FEATURES Sarah Jones *sjones@mixonline.com*
TECHNICAL EDITOR Kevin Becka *kbecka@earthlink.net*
MANAGING EDITOR Sarah Benzuly *sbenzuly@mixonline.com*
ASSISTANT EDITORS Barbara Schultz *bschultz@mixonline.com*
Matt Gallagher *mgallagher@mixonline.com*
LOS ANGELES EDITOR Bud Scoppa *bs7777@aol.com*
NEW YORK EDITOR David Weiss *david@dtwords.com*
NASHVILLE EDITOR Rick Clark *mrblurge@mac.com*
FILM SOUND EDITOR Larry Blake *swelltone@aol.com*
SOUND REINFORCEMENT EDITOR Steve La Cerra
CONSULTING EDITOR Paul D. Lehrman *lehrman@pan.com*
CONTRIBUTING EDITORS Michael Cooper Heather Johnson
Eddie Ciletti Gary Eskow Barry Rudolph

SENIOR ART DIRECTOR Dmitry Panich *dpanich@prismb2b.com*
ART DIRECTOR Kay Marshall *kmarshall@prismb2b.com*
ASSOCIATE ART DIRECTOR Lizabeth Heavern
PHOTOGRAPHY Steve Jennings
INFORMATIONAL GRAPHICS Chuck Dahmer

SR VICE PRESIDENT/PUBLISHER Pete May
pmay@prismb2b.com
ASSOCIATE PUBLISHER Erika Lopez *elopez@prismb2b.com*

DIRECTOR OF AUDIENCE AND BUSINESS DEVELOPMENT
Dave Reik *dreik@prismb2b.com*
DIRECTOR OF INTERACTIVE AND LIVE MEDIA
Joanne Zola *jzola@prismb2b.com*
ONLINE AUDIENCE DEVELOPMENT MANAGER Tami Needham
tneedham@prismb2b.com

NORTHEAST ADVERTISING DIRECTOR Michele Kanatous *mkanatous@prismb2b.com*
NORTHWEST ADVERTISING MANAGER Greg Sutton *gsutton@prismb2b.com*
SOUTHWEST ADVERTISING MANAGER Albert Margolis *amargolis@prismb2b.com*
SOUTHEAST/EUROPE ADVERTISING MANAGER Jeff Donnenwerth
jdonnenwerth@prismb2b.com

CLASSIFIEDS/MARKETPLACE ADVERTISING DIRECTOR
Robin Boyce-Trubitt *rboyce@prismb2b.com*
CLASSIFIEDS/SPECIALTY SALES MANAGER
Kevin Blackford *kblackford@prismb2b.com*

MARKETING DIRECTOR Kirby Asplund *kaspl:und@prismb2b.com*
SALES & MARKETING COORDINATOR Clarina Raydmanov
craydmanov@prismb2b.com
SALES & EVENTS COORDINATOR Jennifer Smith
jsmith@prismb2b.com

DIRECTOR, SPECIAL PROJECTS Hillel Resner *hresner@prismb2b.com*

VICE PRESIDENT, PRODUCTION Lisa Parks *lparks@prismb2b.com*
GROUP PRODUCTION MANAGER Melissa Langstaff *mlangstaff@prismb2b.com*
PRODUCTION MANAGER Liz Turner *lturner@prismb2b.com*
CLASSIFIED PRODUCTION COORDINATOR Jamie Coe
jcoe@prismb2b.com

VICE PRESIDENT, AUDIENCE MARKETING Jerry Okabe *jokabe@prismb2b.com*

OFFICE MANAGER Lara Duchnick *lduchnick@prismb2b.com*

FOUNDED IN 1977 BY DAVID SCHWARTZ AND PENNY RIKER

MIX® MAGAZINE IS AFFILIATED WITH SPARS ABM BPA

Fast Forward SONAR 6

Total Control ▸▸ Track Perfection ▸▸ Superior Sound

With SONAR 6 Producer Edition and a Windows-based PC, the future of in-the-box mixing is here today.

SONAR's exclusive end-to-end **64-bit double precision mix engine** ensures every subtlety of your performance—from the richness of a fine acoustic guitar to the reverb tail of a cathedral—will shine through in the mix. And with 31 professional audio effects including **Perfect Space™ Convolution Reverb** and **VC-64™ Vintage Channel**, your tracks will come alive.

At every step of your project—from composing with virtual instruments, to recording and mixing with superior sound quality—SONAR brings together the best music creation and production tools.

cakewalk
www.cakewalk.com

▸▸ Windows Vista Ready

Take full advantage of the new generation of x64-capable PCs with SONAR 6 and Windows Vista. You'll experience huge performance gains with multi-core and 64-bit processors. Get higher track count, more RAM, and amazing performance. Visit www.cakewalk.com/Vista to discover more.

Windows Vista

PRISM BUSINESS MEDIA

President/Chief Executive Officer John French *jfrench@prismb2b.com*
Chief Operating Officer/Chief Financial Officer Andrea Persily *apersily@prismb2b.com*

Sr. Vice President, Administration Eric Jacobson *ejacobson@prismb2b.com*
Vice President, Human Resources Kurt Nelson *knelson@prismb2b.com*
Chief Technology Officer Cindi Reding *creding@prismb2b.com*
Vice President, General Counsel Bob Feinberg *rfeinberg@prismb2b.com*

SUBSCRIBER CUSTOMER SERVICE: To subscribe, change your address or check on your current account status, go to www.mixonline.com and click on "Customer Service" for fastest service. Or, e-mail mixm@kable.com, call toll-free 800/532-8190 or 815/734-1216, or write to P.O. Box 638, Mt. Morris, IL 61054.

BACK ISSUES: Back issues are available for $10 each by calling 800/532-8190 or 815/734-1216.

POSTMASTER: Send address changes to *Mix* magazine, P.O. Box 638, Mt. Morris, IL 61054.

PHOTOCOPIES: Authorization to photocopy articles for internal corporate, personal or instructional use may be obtained from the Copyright Clearance Center (CCC) at 978/750-8400. Obtain further information at copyright.com.

REPRINTS: Contact FosteReprints to purchase quality custom reprints or e-prints of articles appearing in this publication at 866/436-8366 (219/879-8366 outside the U.S. and Canada). Instant reprints and permissions may be purchased directly from our Website; look for the RSiCopyright tag appended to the end of each article.

ARCHIVES AND MICROFORM: This magazine is available for research and retrieval of selected archived articles from leading electronic databases and online search services, including Factiva, LexisNexis and ProQuest®. For microform availability, contact National Archive Publishing Company at 800/521-0600 or 734/761-4700, or search the Serials in Microform listings at napubco.com.

PRIVACY POLICY: Your privacy is a priority to us. For a detailed policy statement about privacy and information dissemination practices related to Prism Business Media products, please visit our Website at www.prismb2b.com.

LIST RENTAL: Marie Briganti *marie.briganti@walterkarl.infousa.com*

MAILING LISTS: Prism Business Media makes portions of our magazine subscriber lists available to carefully selected companies that offer products and services directly related to the industries we cover. Subscribers who do not wish to receive such mailings should contact the Prism Business Media subscriber services at 800/532-8190 or 740/382-3322.

CORPORATE OFFICE: Prism Business Media, 9800 Metcalf, Overland Park, KS 66212, 913/341-1300, www.prismb2b.com.

NATIONAL EDITORIAL, ADVERTISING AND BUSINESS OFFICES, 6400 Hollis St., Suite 12, Emeryville, CA 94608; 510/653-3307; fax 510/653-5142; Website: www.mixonline.com.

M1 TubeTracker™

Tube Mixing Console

- 8- or 12-Channel Configuration
- Modular Channel Strip Design
- 100mm Silky Smooth "K" Faders
- 3-Band EQ with Sweep Mids
- Built-in A/B Speaker Switching

The perfect DAW companion!
Warm up your tracks on input...
Steam up your stems on output!

- Balanced Inputs, Sends, and Returns
- Optional 2- and 8-Channel Digital I/O

Hot Sound for the Cold, Cruel, Digital World

TL Audio
PASSIONATE ABOUT TUBES

Exclusive U.S. Distribution by
QUIRETEC DESIGNS

www.quiretec.com

Letters to Mix

MIND YOUR MIDI

I am writing in regards to the "Outer Limits of Portability" article (October 2006) to address a few of Kevin Becka's issues with Logic's MIDI handling. While it is not possible to select multiple MIDI tracks, they can be simultaneously armed by shift-clicking the Record-Enable button for each track. If the Record-Enable button isn't visible, then it can be accessed from the View menu. To make this useful, a few other tweaks are necessary.

First, assign each MIDI controller to a separate MIDI channel. This can be done from the controller or, assuming a multiport MIDI interface is being used, in the Logic Environment by cabling each of the input ports on the physical input object to a separate transformer object. Each transformer can then be configured to set all incoming data to a specific MIDI channel. Route the output of each transformer object to the sequencer input object (called "To Recording and Thru" by default).

Next, return to the Arrange window and set each MIDI or instrument track to receive on the appropriate MIDI channel. This setting is made in the second parameters box. Use the channel parameter for MIDI tracks and the MIDI channel parameter for instrument tracks.

Finally, open File > Song Settings > Recording and select "Auto Demix By Channel If Multitrack Recording." The MIDI data input on each channel will now record to the appropriate tracks. You can then route these tracks to external MIDI devices as usual.

I should note that there are a few visual glitches inherent in this approach. First, Logic will appear to record everything to one track at first, but it will create separate regions for each channel on the appropriate tracks once recording is stopped. This does not affect throughput of MIDI data from each track, so you are still able to route each track to an external MIDI device. Second, Logic will name each MIDI region after the track that was selected during recording. This can be somewhat confusing if you are dealing with several input devices, but the regions will still be placed on the correct tracks and will contain the correct data.

Tony Wallace

Tony,
We actually used the same workaround you mention, but I didn't have the space to explain it all. Your comment that it is not "intuitive" is absolutely right. It would be nice if Apple would address these issues in Logic 8.

—Kevin Becka

MORE ON THE OUTER LIMITS

Thank you for delicately wading in, on tiptoe, to some discussion of design flaws in Apple Logic with regard to audio engineering features and functions.

Besides the problems mentioned, a substantial one that I have encountered ever since Logic 6 has to do with how the main window deals with graphic representation of waveforms on an audio track. In some cases, I have found that when in Quick Punch mode, new audio that should overlap old audio is not drawn on the screen, but is instead "underneath" the waveform of the old audio. This makes it exceedingly frustrating to edit, crossfade or otherwise manipulate the new recording at the punch point. It plays back correctly, but doesn't look right.

In addition, any measure that has a preprogrammed change of time signature, such as a single bar of 5/4 inserted in a passage of 4/4, will often result in screen-draw errors in audio. And Logic has yet to implement any sort of audio file time-stamping (at least no one at the company's tech support or on any of the forums has been able to explain to me how to do so, nor is it listed in the user's manual). This makes it much less easy to import mixes created in Logic into Pro Tools and spot them to the right timecode location. (By contrast, Digital Performer automatically time-stamps every SDII file to the timecode on the counter.)

I work as a freelance score-mixing engineer for film and television composers in the L.A. area, and Logic is quite popular. I consider it my professional responsibility to be platform-agnostic and do my best, regardless of the software in use. I find that many excellent composers have a fairly minimal knowledge of advanced audio engineering techniques, and there's no point in explaining to them what's "wrong" with Logic; it only draws blank stares. And trying to convince a composer to change DAW software to something that works more, well, logically has about as much chance as asking someone to change political parties or religion.

Les Brockmann

Les,
Thanks for appreciating our feature on Logic Pro and the new Mac laptops. We encountered more than one visual glitch ourselves, although not the ones you mentioned. Besides the minor irritations, Logic does some things that other platforms don't do that make up for its shortfalls. The nice thing is, it all keeps getting better and better with each release.

—Kevin Becka

COMING IN FIRST PLACE

In David Hewitt's interview ("Mix Interview," September 2006), he recollects one minor thing incorrectly: I was the recipient of the first Sony PCM-3324 worldwide and the first two in the United States. Sony presented me with a plaque at an AES convention to commemorate that fact. Frank Zappa, Stevie Wonder and Neil Young were clients of mine, and they took delivery of their machines after me in that order as the 3324 slowly became available. It took approximately two years for them to acquire their machines, as the 3324 was virtually hand-built at the time.

David Hewitt and I struck up a relationship where he handled my machine(s) in the New York market, and I also had representation in Nashville, Los Angeles and San Francisco. As the rental/consulting market matured, I became tired of living on the road and built the Digital Services recording studios in Houston, where diverse artists such as ZZ Top, Destiny's Child, Willie Nelson and Placido Domingo continued the long and historic story of the original PCM-3324 we kindly refer to as "Grandpa."

David is a longtime friend and we see each other from time to time when I am in the New York area.

John Moran
Digital Services, Houston

Send Feedback to *Mix*
mixeditorial@mixonline.com

GENELEC®

Measured Success

Built on the solid foundation of the 8000 MDE™ and 7000 LSE™ series products, Genelec introduces the new **8200 and 7200 DSP** series monitors. They are a measure of our continued commitment to customers who rely on the purity of sound reproduction.

With new technologies of **DSP, GLM™ and AutoCal™** we have made our new DSP products powerful and easy to use, with the innate ability to adapt to your environment. And they do it uncompromisingly, accurately and quickly.

dsp

Genelec has utilized sophisticated digital signal processing in the new 8200 bi-amp monitors and 7200 subwoofers to achieve the next level of resolution in accurate reference monitoring.

GLM

The Genelec Loudspeaker Manager software package provides all necessary connectivity for a comprehensive computer-to-8200/7200 series DSP monitor interface.

GLM™ includes:
- Control of 30 loudspeakers on standard CAT5 cabling
- Eight section EQ
- Level, Distance and Vertical Axis settings
- Compensation audio delay for digital video
- Custom User Setups
- Solos and Mutes

AutoCal™

Genelec's automated calibration software, AutoCal™, combines decades of acoustic research along with our proprietary DSP and GLM™ network control. AutoCal will properly align and integrate each and every 8200 and 7200 speaker into any acoustic environment with exceptional precision. It's like having a Genelec acoustic product specialist on hand any time you wish – and more.

Digital monitoring systems are not new, yet none have realized the real potential, until now. For more information please visit our website.

www.genelecusa.com

DIAMONDS FOR SUGARHILL

Houston-based SugarHill Recording Studios (www.sugarhillstudios.com) has just wrapped up celebrating its 65th year as a top recording facility on the Gulf Coast. Bill Quinn (right) established the facility in October 1941 as Quinn Recording, honing his skills recording radio commercials and birthday greetings. After releasing its first major hit song, "Jole Blon" by Harry Choates, and a slew of other successes, Quinn changed the facility's name in 1950 to Gold Star Studios. During that time, Sam "Lightnin'" Hopkins, George Jones, Johnny Preston, James O'Gwynn and Willie Nelson could be found recording at the facility.

By the early 1960s, Gold Star witnessed the beginnings of the psychedelic Texas rock era, particularly with the release of the Sir Douglas Quintet's "She's About a Mover" (produced by Huey P. Meaux). In January 1968, International Artists Record Company leased Gold Star, and attracted other top names in psychedelic rock, including 13th Floor Elevators, the Red Krayola, Bubble Puppy, Continentals 5, the Bad Seeds, the Moving Sidewalks (ZZ Top's Billy Gibbons' first band) and the Zakary Thaks. B.J. Thomas would also record a portion of his first commercially successful album, *Tomorrow Never Comes*, during this time.

Producer Meaux took over the studio in the early '70s, officially naming it SugarHill Recording Studios and working on seminal albums from Freddy Fender. In 1986, Modern Music Ventures Inc. bought SugarHill and it became home base for successful Tejano recording artists. Concurrently, Modern Music Ventures established its Tejano label, Discos MM, and released hit records by Elsa Garcia, Jerry Rodriguez & Mercedes and the Hometown Boys.

The late '90s would see another change in ownership to RAD Audio (a company formed by engineers Dan Workman, Andy Bradley and Rodney Meyers). During that time, SugarHill recorded Destiny's Child, Robert Minot, Ann Margaret, Solange Knowles, Brian McKnight, Twista, Smash Mouth, Michelle Williams, Hubert Laws, Clay Walker and Calvin Owens.

Last year, SugarHill partnered with the Pacifica Radio Network and launched The SugarHill Sessions radio show, offering a place for local music to shine. Current owner/studio manager Workman said, "With the advent of modern low-cost recording equipment, our new focus is to be the region's production company—the place you go to connect with the people who know how to make your music sound the very best it can. The music can only get better as we are liberated from being 'the keepers of the holy machines.' Now, we can concentrate on every aspect of our clients' musical performances."

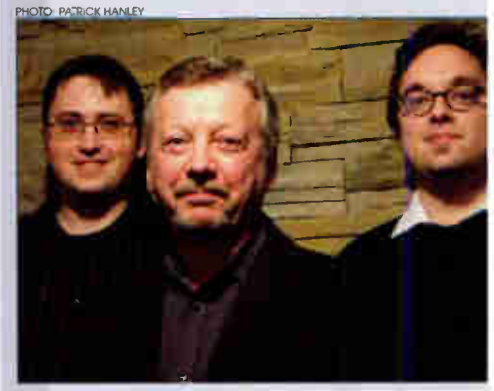
WAVE MIKES THE WORLD

The Project Harvest crew miking up the streets of Dublin

Wave Recording Studios, an audio mixing and sound effects company for the advertising industry in the UK, has started to amass a 7.1 sound effects library, Project Harvest (www.projectharvest.blogspot.com). Traveling the world, audio engineers Joss Gardner and Craig Loftus started in Europe, recording sound effects in real time and in real-life situations. The engineers are using Holophone's H2-PRO surround mic in a variety of locations and environments to capture everything and anything—from sounds of jet fighters passing overhead in Anglesea to a school dinner hall in Cornwall, cicadas in a Spanish field, visitors at London's Tate Modern Museum and rushing water in Parisian sewers. The mic is being used with a Zaxcom Deva V hard disk recorder, positioned on a stand or portable boom. All items are recorded at 96k and 24-bit.

GOT TECH?

PHOTO: PATRICK HANLEY



From left: Studio Services Group's Jake Swanson, Michael McKern and Rob Schlette

Recently opened, Studio Service Group (St. Paul, Minn.; www.studioservicegroup.com) provides technical audio services for recording studios, performance venues and educational facilities, including studio design and installation, equipment repair and maintenance, and training for small and large clients in audio recording technology.

"People go into the studio to create, not to wrestle with gear," said co-partner Rob Schlette (with co-partners Michael McKern and Jake Swanson). "Our goal is to help our clients get the most out of their recording systems so they can concentrate on making music."

COMPILED BY SARAH BENZULY

WOW AND FLUTTER EXPANDS

In addition to a company restructure, Wow and Flutter West has opened Stage A, a 10,000-cubic-foot, large-format film/TV mixing theater in Santa Monica, Calif. The room features custom, two-operator, dual Digidesign HD3 systems with dual integrated ICON consoles, a 5,500-watt THX-spec JBL Cinema Array system featuring QSC digital cinema amplifiers, a 17-foot diagonal Stewart film screen, a Martinsound Multimax EX custom monitoring controller, Virtual VTR and Kona HD picture playback interfaces, and command seating for 15 to 30.

Stage A's system is capable of playing back upward of 400 tracks simultaneously and can accommodate all formats up to and including IMAX.

According to Academy Award–winning sound mixer Jeffrey Perkins (*Dances With Wolves*), "Stage A is quite simply a really great-sounding room and provides a first-class experience. Also, the fact that it's located in Santa Monica is a huge plus for all of the directors who live on the Westside."

Wow and Flutter West founder Jerry Brunskill in Stage A

SHOOTOUT AT STUDIO 8121

New Washington, D.C.–based Studio 8121 (www.studio8121.com) recently held a "gear shootout" for local engineers, testing everything from mics and mic pre's to compressors, EQs and more. The event, sponsored by Sennheiser and Neumann (which brought new mics for the testing), was far from "scientific," but according to studio manager Billy Hickey, "We did get to hear the difference between large-diaphragm and small-diaphragm, condenser and tube, condenser and ribbon, vintage and new, and inexpensive and expensive microphones. The point wasn't necessarily to pick the best or better microphone, but to listen to and study the differences between each microphone."

Acoustic guitar miked with RCA 77, Royer R-121, Octavia MC 012, AKG C 414, Neumann KM 184 and U87, and Sennheiser e914

Attendees listen in Studio A's control room (Mike Watert, chief engineer, in the center)

The tests included acoustic/electric guitars, piano, vocals and drums (overhead, room, kick, snare top and toms). "It just went to show that there is no such thing as a perfect microphone," Hickey added.

A CD of the material recorded will be available; interested parties can e-mail studioinfo@threekeys.com.

INDUSTRY NEWS

Neal Allen

Harman Pro North America (Northridge, CA) named **Nick Owen** VP of sales for AKG Acoustics, Soundcraft and Studer in the U.S.... **Scott Robbins** has been promoted to senior VP of worldwide sales for **Crown International** (Elkhart, IN), which also named **Scott Potosky** to VP of engineering and **Mark Kellom** to VP of marketing...Founder of Tyson Sound Design, **Tom Tyson** has been promoted to VP of sales and engineering at **SLS Loudspeakers** (Ozark, MO)...New mixers at **Sound Lounge** (NYC) are **Paul Weiss** and **Cory Melious**...Working in audio restoration and archiving since 1994, **Marie O'Connell** has been tapped by **Cups 'N Strings** (Santa Monica, CA) as chief audio archivist...Replacing John Maloney is **Dave Keller**, senior VP of sales and marketing at **Panamax** and **Furman** (Petaluma, CA)...**Telex Communications'** (Burnsville, MN) new international inside sales rep for Latin America is **Nicolas Betancur**...New product specialist at **Aviom** (West Chester, PA) is **Jeffrey Lange**; new representative for New England and upstate New York for the company is **Cardone, Solomon & Associates** (NYC)...**Shuttlesound** (London) appointed **Neal Allen** as a representative dedicated to the customers of Electro-Voice...New distribution deals: New U.S. distribution company **CW Sales & Marketing** (L.A.) adds Audient, LA Audio and Tube-Tech to its roster; **Summit Audio** (Gardnerville, NV) tapped **Lauten Audio** (Santa Clara, CA) as its exclusive U.S. distributor, **Shidco** (Tehran) is managing **Allen & Heath** (Agoura Hills, CA) gear in Iran; **Harrison Consoles** (Nashville) named **Control Devices** (Sydney) as its sales rep for Australia and New Zealand; and **beyerdynamic** (Farmingdale, NY) added **Warman Marketing** (Rocky Mountain region) and **John & Anthony/Metro Reps** (Fairfield, NJ) to its roster.

NOTES FROM THE NET

DON'T GET BURNED

Burned Media (www.burnedmusic.com) has soft-launched its download site, which allows users to search for, select and purchase music. Content will be available from all four major record labels, as well as indie artists. The company expects to announce plans around a yet-to-be-named music discovery site that will include tools for both unsigned and signed artists to promote their music and live performances.

Users will have access to key features including a loyalty points program that rewards members for recommending music to their friends, who, in theory, will buy the recommended songs or albums.

MICROSOFT ZOOMS WITH ZUNE

Brought to you by the designers of Xbox, Microsoft's Zune ($249) features wireless technology that allows users to share full-length sample tracks of select songs, homemade recordings, playlists or pictures among their Zune devices. The full tracks of these songs can be listened to up to three times over three days, after which the song must be purchased from the Zune Marketplace, which features more than 2 million songs. Consumers can download individual songs or purchase "Zune Pass" subscription plans.

Additionally, Zune comes with an FM radio tuner: if the radio station broadcasts a Radio Broadcast Data Standards (RBDS) signal, then the user can see the name of the currently playing song.

Zune offers 30 GB of storage space, meaning it can hold about 7,500 songs, 25,000 pictures or 100 hours of video.

BOOKSHELF

For most Beatles fans, Mark Lewisohn's irreplaceable *The Beatles: Recording Sessions* is the best way to learn about how the group's recordings came together. But for the engineer who must know what that unusual recording console or piece of outboard gear is in the session photographs, the answers have finally come in the form of *Recording The Beatles: The Studio Equipment and Techniques Used to Create Their Classic Albums* (Curvebender Publishing, $100, www.recordingthebeatles.com).

A whopping 500-plus pages, the book, researched by engineers Kevin Ryan and Brian Kehew during a 10-year period, details every piece of recording gear used by EMI's Abbey Road Studios, along with a pre-history of the studio, its staff and equipment from just prior. The book also features a large number of production histories of various songs from throughout the group's career, detailing how each was constructed, using what gear.

—Matt Hurwitz

TEC AWARDS UPDATE

VIDEOGAME CATEGORY ADDED FOR NEXT YEAR'S EVENT

Starting with the 2007 TEC Awards, an award will be presented for Creative Achievement in Sound Production for Interactive Entertainment. The criteria for the new award, and the job specialties of the individuals and companies to receive it, are being developed by a blue-ribbon panel of accomplished videogame audio veterans. For more information, email Karen@tecawards.org.

CALL FOR ENTRIES

The TEC Awards nominating panel is now accepting product nominations for the 23rd Annual TEC Awards to be held in New York City on October 8, 2007. To be eligible, products must have been released and in commercial use during the period from April 1, 2006, to March 31, 2007.

Technical categories are Ancillary Equipment, Digital Converter Technology, Mic Preamplifier Technology, Microphone Technology/Sound Reinforcement, Microphone Technology/Studio, Wireless Technology, Sound Reinforcement Loudspeaker Technology, Studio Monitor Technology, Musical Instrument Technology, Signal Processing Technology (Hardware), Signal Processing Technology (Software), Workstation Technology, Sound Reinforcement Console Technology, Small Format Console Technology and Large Format Console Technology. Companies that wish to nominate products should send complete product name and qualifying category, date first commercially available (proof of shipment may be required; beta test sites do not qualify), and a contact name and telephone number.

Creative categories are Studio Design Project, Television Sound Production, Film Sound Production, Remote Production/Recording or Broadcast, Tour Sound Production, Surround Sound Production, Record Production/Single or Track, Record Production/Album and Sound Production for Interactive Entertainment. Companies that wish to nominate projects should send the project name and qualifying category, and a contact name and telephone number.

For Outstanding Studio Design Project, entries must be new studios or rooms, or major renovations completed and in use during the eligibility year of April 1, 2006, to March 31, 2007. Those wishing to nominate studios should send the studio name and location, date completed and name/phone number of the architect(s) or studio designer(s), the acoustician(s) and the studio owner(s).

All entries must be returned by Wednesday, February 28, 2007. Send all information to TEC Awards, 1547 Palos Verdes Mall #294, Walnut Creek, CA 94597. Forms can also be downloaded from www.mixfoundation.org.

Get the Gear you want for the Holidays

— and we'll ship it FREE*

Trust Sweetwater to ship your order FAST, with NO shipping charges! Rely on us - you'll have what you need in time for the holidays!

THE BEST FREE SHIPPING
NO MINIMUM PURCHASE

HUGE SELECTION
Huge inventory to make sure the musician or engineer on your list gets what they want

GREAT PRICES
Save big on your holiday shopping with our great prices, exclusive package deals, and money-saving offers

EXPERT SALES
Our highly trained sales staff knows pro audio gear inside and out. We're committed to helping you make the right choice - even if you're shopping for someone else!

TECH SUPPORT
Free, unlimited tech support, plus a factory-trained, world-class service department

Maximize your holiday dollar with
No Interest and **No Payments**
for 90 days!

1-800-222-4700
www.sweetwater.com

Sweetwater
music technology direct®

* Offer does not apply outside the continental U.S. and to items purchased with a PO. Oversized and overweight items excluded from offer.

SPARS SOUNDBITES

IT'S A GLAMOROUS LIFE FOR THE REMOTE RECORDING CREW

Eds. Note: Karen Brinton, owner/manager of Remote Recording, gives us a step-by-step tour diary of a day in life of her remote recording crew.

Remote Recording's Karen Brinton and president/chief engineer David Hewitt

4:30 a.m.: The alarm goes off. No time to hit the Snooze button as I have to be on my way to the airport at 5:30 a.m. Have to put on a little makeup so I don't scare my crew at the airport. Wish I would have had more sleep, but was at a gig until 1 a.m. the night before—no rest for the wicked! It's time to hit the road again.

6 a.m.: check in at the airport and meet up with my guys. We're all groggy, but in good spirits. We board the plane, take our drug of choice and proceed to have a nice nap during the flight. Once we land, we have to hit the ground running.

Remote Recording's Remote Truck will have been traveling days before the gig, sometimes traversing more than 3,000 miles.

Once the truck and crew arrive on site, everyone's focused, handling their respective duties. I do truly marvel at the talent and concentration with which my guys work. We're sometimes in a venue where no one has worked at before or "creating a venue" in a place that does not have electricity. There's limited time to get things up and running so everyone has to be onboard and figuring out solutions to the various challenges that crop up.

First things first—parking, power and where's the coffee! Seriously, sometimes just finding a place to park the truck can be time-consuming. We need to negotiate with the show and venue personnel so we are not jeopardizing their load out, local fire regulations, etc.

Then we deal with the local stage hands for cable runs, audience mic placements, etc.

All of these people will have been contacted in advance, but it's amazing how the guy who said, "Yeah, no problem!" on the phone is off fishing the day of show. Note: Always try to get your agreements in writing.

After negotiating with the touring or house sound reinforcement heads, we will establish the mic split and add whatever changes may be necessary for the recording. This has to be done with care, making sure that the front-of-house and monitor mixers and are okay with the changes and have time to deal with them during soundcheck. Hopefully, we will get a soundcheck; sometimes you only get a line check. Oh well, we always estimate the gain trims before starting anyway.

Then, of course, there is the video interface, and these days there is always video. Even if there is no video truck or immediate need for a video product, there is often tour video support cameras and recording. It's always best to take a feed from them and share time code in case it is needed later.

5 p.m.: Made it through soundcheck. Most of the production crew is taking a dinner break, but most of my guys are fine-tuning the smallest of details, making sure everything is perfect. I schlep plates of food to them on the truck. In my spare time, I run around schmoozing producers and directors. We often have guest engineers on the truck, and I enjoy working with all of them.

8 p.m.: Showtime! We're off and running. There's no turning back; no second take. My crew is like a well-choreographed dance troupe waltzing through the set. After the last encore, it's time to break everything down, pack it up and get ready for the next gig.

2 a.m.: The truck is packed and everyone's headed back to the hotel, where the bar has just closed and there is no room service. Up early again tomorrow to head back home. I'm tired, but happy. It's not glamorous, but I wouldn't trade what I do for anything! ■

Karen Brinton is the owner/manager of Remote Recording.

EXTRAS

MIX WEB

Go beyond the printed page and log on to mixonline.com to get extra photos, text and sounds on these select articles:

LIVE SOUND SPECTACULAR!

More information about this month's tour spotlights. Photo galleries to take you to the front row. **BONUS STORY:** Recent live sound engineer graduates talk to *Mix* about their education, getting their first SR gig, what they wish they learned, etc. Want to tell *Mix* your story? E-mail mixeditorial@mixonline.com, and we'll add your take on this topic. Road warriors! Have some guidance for these up-and-coming engineers? *Mix* wants to hear your tips!

NOW LIVE: Mixguides Live Sound—for all your SR needs.

"The Inside Track"

Go behind the scenes of mixing drums with video from the recording process, extra tips from technical editor Kevin Becka and other useful resources to guide you on your next drum recording session.

"Auditions"

Old School Audio Vistaphone

Listen to an MP3 of this "bullhorn-turned-microphone" while used on a drum recording.

"Recording Notes"

Yeah, yeah, we know. It's great to *read* about the latest releases coming out from today's top artists, but what does that release *sound* like? Get audio clips for Joan Osborne, Brian Setzer and Gladys Knight.

All 4 YOU

MIDI

4 new soft synths with over 1000 sounds
HALion One with Motif waves
Prologue virtual analog synth
Spector-spectrum filter synth
Mystic-physical modeling with spectrum filters

AUDIO

33 new VST3 plug-ins
Including pro EQs, vintage compressors and amp simulation
for a total of 50 audio plugins
Virtual Control Room

MediaBay™
Universal Media Integration

SoundFrame™
Manage any sound from any source

Import & Export audio from video
Video thumbnails in the timeline
Basic cut and paste editing of video inside your DAW

VIDEO

New Classical & Jazz fonts
Streamlined UI
Dynamic MIDI Articulation of Notation Symbols for use with virtual orchestra libraries

NOTATION

Cubase 4 offers more creative possibilities than ever before. The 50 studio quality audio effects plug-ins and four new VSTi's would cost thousands of dollars on their own. Combining new features like a virtual Control Room and MediaBay™ with Steinberg innovations including Audio Warp and Play Order Track, Cubase 4 sets the standard for advanced music creation and audio production systems.

It's all here, it's brand new and it's...

All 4 You.

Already own Cubase?
upgrade to 4 at
www.steinbergupgrades.com

Cross Platform Compatibility;
Universal MAC Binary (MAC Intel. OS X), Windows XP

CUBASE 4
Breakthrough technology.
More creativity.
All 4 you.

steinberg
Creativity First

BY PAUL D. LEHRMAN

Virtual Instruments—Virtually There

What's Missing in Soft Synthesis

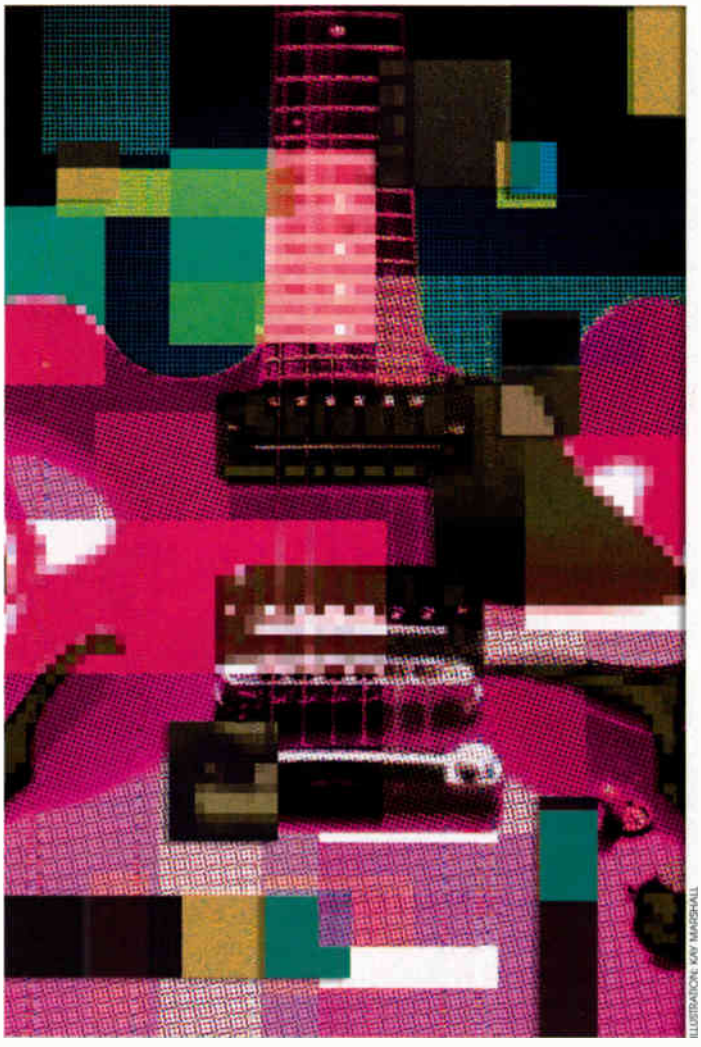


ILLUSTRATION: KAY MARSHALL

This month, I expect to be helping to cut the ribbon on a brand-new lab in a brand-new music building at my school. It will be equipped with a dozen Intel iMacs, each loaded with six different software packages for recording and editing music, audio and video. The keyboard at each station will have a dozen or more knobs and sliders, and the synthesizer will be—well, actually there won't be any of those.

Five years ago, I wrote in this space that software synthesis was threatening to overtake hardware. Now, at least in the case of this lab, it's a *fait accompli*. All of the sound generation in this lab will be in software form.

The all-software studio has become eminently practical for a great number of people in a great number of contexts. Developers ranging from kids working in their bedrooms to multinational corporations are coming up with new virtual instruments and processors for every conceivable purpose, imitating old tools and designing startling new ones. The quality of the sounds and the interfaces ranges from awful to brilliant, and the prices range from zero to, well, still a lot less than you'd pay for a top-tier hardware synth. And the correlation between price and quality is by no means linear.

Format wars are settling down, as developers resign themselves to the fact that they have to release their products in VST, Audio Units and RTAS versions—but no more than that—if they want to effectively cover the market. We've got every musical instrument that can be found on the entire planet, as well as just about every instrument that ever *could* be found on the entire planet. And a lot of instruments from outer space, too.

On the processing side, we now have models of all the great preamps, compressors, EQs, guitar amps, tape heads, stomp boxes and delay/phaser/flangers (with the exception of the late Stephen St.Croix's amazing Marshall Time Modulator—anyone working on that?), and we have processing that the designers of those classics could never have dreamed of.

A very welcome side effect of the soft synth revolution has been the long-overdue development of sophisticated yet inexpensive MIDI controllers, including decent keyboards with oodles of user-configurable knobs, switches and buttons, from companies such as M-Audio, E-mu, Novation and the impressive Chinese upstart CME, and percussion pads that will set you back only a Franklin or two (although for serious rhythm work, I would never give up my Kat!).

So are we done now? Can we throw away our hardware synths and processors and make everything work inside the box? Putting aside the highly subjective issue of whether software tools sound as good as the hardware they're designed to replace, the answer, despite my school's virtual plunge, is still: not quite yet.

First of all, despite the massive increase in computer processor speed, the problem of latency has not entirely been licked. Timing is, of course, something musicians are very sensitive to. Hardware synths are

Wireless Innovations.

Sony has a history of breakthroughs in wireless microphones, including the origination of synthesized UHF technology. Our newest models continue to lead the way. The WRR-862B camcorder-mounted receiver simplifies field production with two channels of reception. The MB-X6 tuner rack streamlines multi-channel sound with six channels in a single rack unit. The sleek WRT-8B body pack lets you choose high power for maximum distance or low power for maximum battery life. Sony's 800 Series also features diversity reception, legendary build quality and an expanded range of channels to help you navigate an increasingly crowded broadcast band. Outstanding simplicity and agility... that's wireless innovation.

Discover wireless innovation at www.sony.com/proaudio.

SONY

PRO AUDIO

THE NEW WAY OF BUSINESS℠

still generally two to three times faster in "local" mode than when they send out a MIDI command to trigger another device. In a soft synth environment, rather than being predetermined (and hopefully minimized) by a hardware engineer, the latency is dependent on a number of factors outside of the designer's control, including the speed of the audio hardware interface and the size of the computer's RAM buffer. The larger the buffer, the better the system will behave (fewer disk errors and dropped samples), but latency will be longer. Today's computers and professional audio interfaces can handle a pretty hefty sonic workload with a buffer of 256 samples—which translates into just less than 6 ms. That's pretty good, but it's still two to three times as long as a fast hardware synth being driven by MIDI, and maybe nine times slower than a synth in local mode.

Worse still, latency is not necessarily consistent, and that can *really* throw off a player. According to computer-music guru Hal Chamberlin, "In a software synth, you'll probably find that there is a great deal of seemingly random variation in the note start times. A good test is to play several notes and hold them with the sustain pedal, and then measure the time it takes for a new note to be added to the mix. In a hardware synth, those other active voices probably won't have any effect on the latency of new notes. However, for soft synths, the more voices already playing, the more variation you're likely to encounter."

Another problem is that computers are simply not built to take the abuse that musical instruments are. A lot of performers who work with computers travel with two for just this reason. If a synth module fails while you're on the road, you can often find a music store in town that can lend or rent you one. If your computer fails, maybe you can run over to Best Buy and get a replacement, but how are you going to reload and reconfigure all of your software in time for the gig?

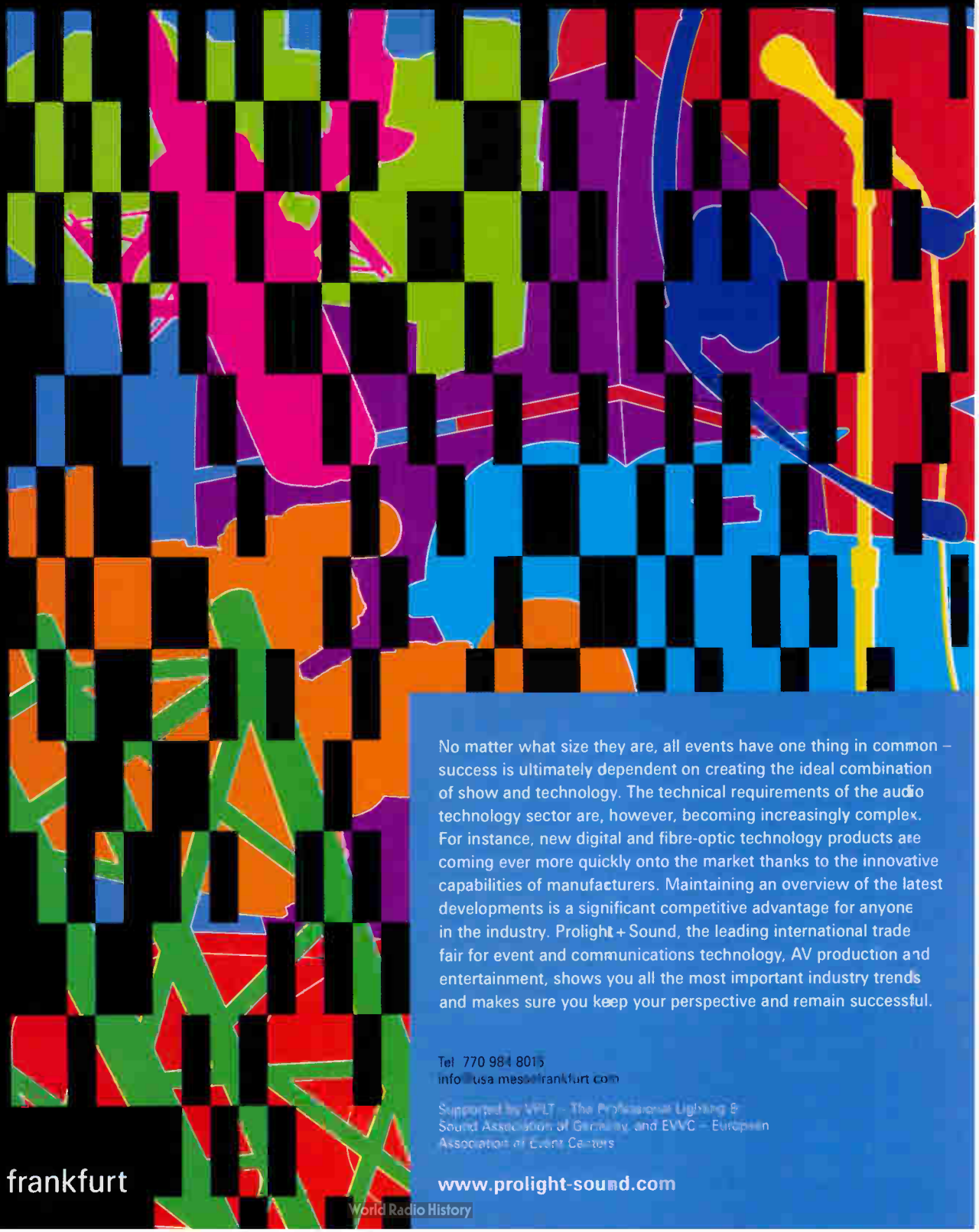
A few companies have attempted to solve this by making computers that look and behave like musical instruments. Open Labs' Neko and Miko workstations cram a Windows XP PC, a touchscreen, and alphanumeric and music keyboards into a single box. Some alumni of Eventide Clockworks started a company not long ago called Manifold Systems to build Plugzilla, a PC-style computer in a roadworthy, two-unit rackmount box that could host up to eight VST modules—instruments and processors—at a time. Despite a fa-

—*CONTINUED ON PAGE 150*

Computers are simply not built to take the abuse that musical instruments are. A lot of performers who work with computers travel with two for just this reason. If a synth module fails while you're on the road, you can often find a music store in town that can lend or rent you one.

prolight+sound

March 28 – 31, 2007
creating emotions



No matter what size they are, all events have one thing in common – success is ultimately dependent on creating the ideal combination of show and technology. The technical requirements of the audio technology sector are, however, becoming increasingly complex. For instance, new digital and fibre-optic technology products are coming ever more quickly onto the market thanks to the innovative capabilities of manufacturers. Maintaining an overview of the latest developments is a significant competitive advantage for anyone in the industry. Prolight + Sound, the leading international trade fair for event and communications technology, AV production and entertainment, shows you all the most important industry trends and makes sure you keep your perspective and remain successful.

Tel 770 984 8015
info@usa.messefrankfurt.com

Supported by VPLT – The Professional Lighting & Sound Association of Germany, and EVVC – European Association of Event Centers

www.prolight-sound.com

messe frankfurt

the INSIDE track

Mixing Drums

BUILDING A WHOLE THROUGH ITS PARTS

BY KEVIN BECKA

MIX IS PROUD TO INTRODUCE A NEW ARTICLE SERIES FOR 2007: "THE INSIDE TRACK," A BI-MONTHLY FEATURE BY *MIX* TECHNICAL EDITOR KEVIN BECKA THAT EXPLORES THE CRAFT OF MIXING IN-DEPTH. EACH INSTALLATION WILL TACKLE A DIFFERENT INSTRUMENT, FROM DRUMS TO PIANO TO VOCALS. WHETHER YOU'RE A VETERAN OR JUST GETTING STARTED, YOU WILL FIND SOMETHING HERE TO HELP TAKE YOUR MIX TO THE NEXT LEVEL.

The tracking is done, the mics are put away, the band's gone home and it's time to mix. *Now* what do you do? If you've been mixing for some time, you already have a bag of tricks with which to polish your tracks. But if you're looking for some new ways to work your audio mojo, this feature is for you. This installment of "The Inside Track" focuses on mixing drums, covering everything from organization to tips on EQ, compression and effects, and even tips on how to plan your mix while you're still tracking.

GETTING ORGANIZED

In a mix, the journey of a thousand miles begins with one step, so know early on which direction that first step is going to take. In other words, have a concept for your mix before you start. Consult other mixes in your musical style. Ask the artist and/or producer how they envision the mix and production developing. This initial planning can save you many hours of re-dos. Regarding drums, an important decision to make early on is determining how you're going to orient the drummer in the mix—from his perspective or the audience perspective. (There's no right or wrong here; it's the mixer's call.)

Preliminary mixing in sections—drums, percussion, keys, vocals, guitars, etc.—can be a great way to build your mix and keep repetitive tasks focused on a group of instruments. If your DAW-based session is large and you have a lot of returns for reverb and other often-used elements at the back end of your session, it can be a chore to scroll over two or three screen widths and back again as you mix. On a large-format console, all of your returns are visible and only a chair slide away, but a great way to take advantage of a DAW's ability to organize mix elements is to have only the necessary elements onscreen at any given time. (See "Power Tip" on page 28 for a great way to handle this task in Pro Tools.) Once you have your channels organized into groups, you can quickly hop around, group to group, spending less time interfacing with the computer and more time listening.

YOU CLEAN UP NICELY

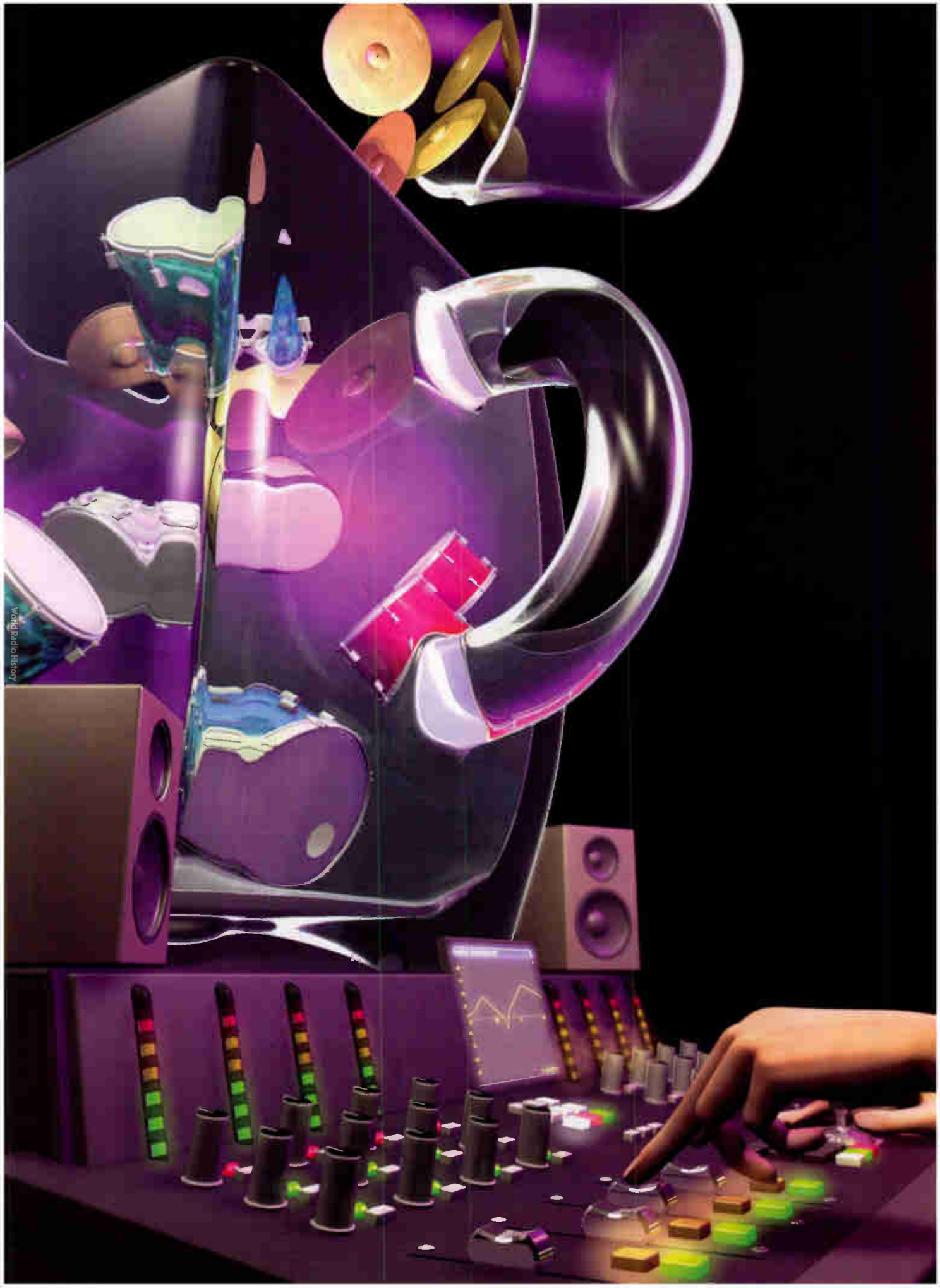
In the overall picture of a mix, there can be a lot of instruments vying for the same bandwidth. If you have two competing tracks that occupy the same frequency space (for example, kick drum and bass), then something's going to be masked. For clarity, there are a few tricks you can use to keep individual drums clean and up front in the mix.

Let's start with the kick. The "muddiest" part of the kick's bandwidth will reside somewhere between 200 and 500 Hz, depending on the drum. Notching that out with a medium Q setting will help clarify punchy low end that resides in the 40 to 60Hz range and the beater's attack, which is higher up at 1.5 to 2.5 kHz. This technique also makes room for the bass guitar, which occupies the same range you're cutting out of the kick drum. You may want to treat your bass at this point, EQ'ing and compressing as necessary to get the kick and bass to work well together. To bring out the fundamental snap of the kick, you can compress it with a medium to slow attack, 40 to 80 ms, so that the attack is louder than the rest of the drum. Both plug-ins and hardware devices work well for this purpose; examples include Sony's Transient Modulator plug-in or the SPL Transient Designer.

If there is excess leakage on the kick track, then you may want to clear it out by using either a gate or the Strip Silence tool in Pro Tools (LE and TDM), Logic and Digital Performer. By taking out the leakage, you can get a more isolated kick that interferes less with other tracks. If you have two kick tracks that were recorded inside and outside the drum, then the inside feed will generally be cleaner with less leakage. Use this inside track to trigger the gate on the outer kick through its sidechain input. This way, both gates, in and out, are locked together and working in the exact same way.

Because of the snare drum's complex tonal relationship between the top and bottom heads and rattle of the snares, its timbre is a broad mix of frequencies with a nebulous

ILLUSTRATION: CHUCK DAHMER



tonal center. When mixing, EQ'ing different areas of this aural potpourri can bring out the snap of the snare, the lower resonant tones or both. Try adding 100 to 200 Hz for more body, 1.5 kHz for snap and 3 to 5 kHz to emphasize higher tones. The latter can be useful to bring out the "snare" sound on a bottom miked drum. Specific fine-tuning depends on how the snare is tuned; finding the sound that works best with the song is the rule. For instance, is the snare too snappy or drawing too much attention to itself? Or does it need to speak more because there isn't much going on aurally to set the tone of the groove? Your ear is the ultimate arbiter.

You can also clean up the snare with a gate or Strip Silence in the same way as the kick. This technique isn't for every style or situation, but it's a nice trick to have in the bag if you need it. It can make the snare speak better in the mix by removing leakage between hits that competes with the overheads. This technique works best if the drummer played a strict backbeat on beats 2 and 4; it will not work if the drummer added in softer, unaccented notes between the accented notes. Removing too many unaccented notes will result in the loss of nuance.

The hi-hat can work better with the kick and snare if it's mildly compressed. Try a 4:1 ratio providing -3 dB of gain reduction at the peaks. This will tend to make this very dynamic kit component sit better in the mix. You can also bring out the sizzle in the hat by adding a shelf at 8 kHz. Keep in mind that the hi-hat track is usually not prominent in the mix; it's added to the mix to drag the hat more to one side and give it a bit of accent. Use compression with discretion and depend more on your overheads to give an overall picture of cymbals and hat.

Toms can ring incessantly in response to other drums and take up a lot of space in a mix. To keep the toms in your face when you need them without having the leakage occupy too much room, ride the toms as a group. This is especially easy with a DAW because you can physically see when they're coming up by viewing the waveform. First, find the volume level where the tom ring sits nicely in the mix. You don't really want to eliminate this ring entirely as there is a lot of flavor from the rest of the kit in those tracks that will be missed if the toms starkly come

BEFORE YOU MIX

KEEPING YOUR SNARE CENTERED

Because of the way a drum kit is naturally laid out, the snare sits to the left of the drummer's center. This can sometimes drag your snare to one side of the stereo picture if the overheads are used predominately over the individual mic feeds, making for a confusing stereo picture. One possible solution to keep the snare centered in your stereo image is to plan ahead when tracking, using a mic centered on the kit as part of your overhead array. There are four possible miking scenarios that can help you keep your kit centered in the mix.

The first option is to use an LCR array over the kit, with the center mic placed directly over the center of the kick drum at the same height as the other two mics. The second is to configure a Decca-like array with the center mic at the top of a triangle and the other mics spaced as a pair. Picture a flat triangle sitting over the kit with the mics at the corners. A third scenario is creating an X/Y array, which, although not a complete solution, tends to sound a bit tighter than a spaced pair of mics because both mics are closer to the center of the kit. The last solution takes a page from Geoff Emerick's playbook and uses a mic placed 3 to 4 feet from the front of the kit, about 4 to 5 feet high, pointing down at the front of the kit. You could use this with a spaced or X/Y pair of overheads. Once you have these resources at your disposal during the mix, you can play with the "centeredness" of the sound by bringing your middle mic up in relation to the other overheads. At this point, check the phase coherence of all the overheads to the direct snare mic by flipping the polarity. Also, be sure to measure all of your overheads precisely to keep things nicely in phase. (Tip: The Hilti PD32 range finder, although not cheap, is amazingly accurate and a great tool for setting up mics at a distance from the source.) —*Kevin Becka*

CHUCK DAHMER

"Centering" via LCR array (pink), Decca array (blue) or X/Y with or without a third mic (yellow, green)

POWER TIP

TRACKING YOUR TRACKS IN PRO TOOLS

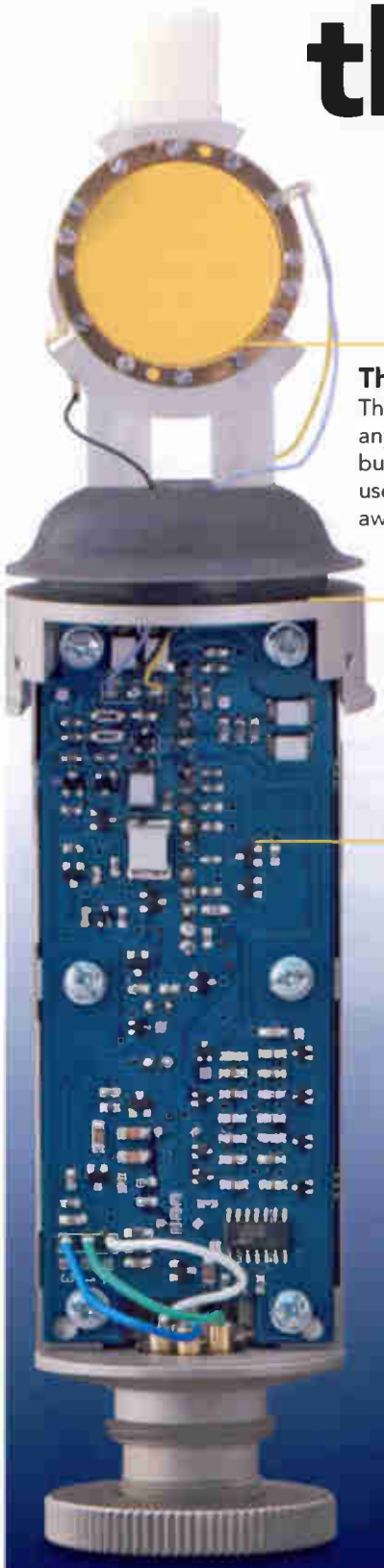
Mixing drums means managing plenty of tracks. If you're using a DAW, streamline the approach by keeping onscreen elements to a necessary minimum. In Pro Tools, try organizing your onscreen tracks using Show/Hide group. With this function, you can assign any tracks to a custom group that can quickly be recalled from the Memory Locations window. This is not grouping in the traditional sense; here, one channel's fader level and mute will not affect the others. Rather, it is simply a way of cleaning up your worksurface so you can view only what you'd like. (By the way, Digital Performer has a similar function to Show/Hide, and Logic Pro can hide tracks but not organize them in the way we're trying to here.)

For starters, you'll want a Show/Hide group where all elements reside. From any screen in Pro Tools, push the Enter key and a New Memory Location window will pop up. If you're on a laptop, choose Memory Locations from the Windows pulldown at the top of the screen and then use the Name key on the window to choose Add Memory Location. Either way, once you see the New Memory Location window, choose None in the Time Properties section and then give your group a name in the General Properties section (for example. "All"). Next, click on the small square between the eyeball and Track Show/Hide, and hit Return or click OK. Your group now appears in the Memory Locations window with a number, name (All) and an eyeball icon to the right. This setting can now be recalled by clicking on that All label in the window or by using period, number location and period on the 10 keypad.

For the next group (let's group drums as that's what we're mixing), hold down the Option key and click on any member of the Show/Hide list to the left of the mix or Edit window to clear them all. Then, hold down Apple and choose the members of the drum group. Be sure to include any master faders, bus returns, reverb returns and other elements needed for your drum mix. It is a good idea to include the bass guitar here, as the drums and bass are foundational elements in your mix. If a lot of elements are next to each other in the list, you can choose the first and then hold Shift and choose the last; all the channels in between will come along for the ride. Once you have all of the desired elements chosen, make a new Show/Hide group and title it appropriately. Do this for all your mix groups and then quickly jump between them to keep your desktop neat and your tasks focused. —*Kevin Becka*

Beauty is more than skin deep.

First impressions can be misleading. On the surface, many microphones appear to be the same, it's only when you look deeper you see the truth!



The heart and soul:
The capsule is the heart of any microphone. The NT2-A is built around the same capsule used in the internationally awarded K2 tube microphone.

A solid foundation:
The computer designed and modeled non-resonant substructure is precision machined using the latest automated systems.

The art of electronics:
Audiophile grade surface mount technology as used in only the finest and most expensive studio microphones.

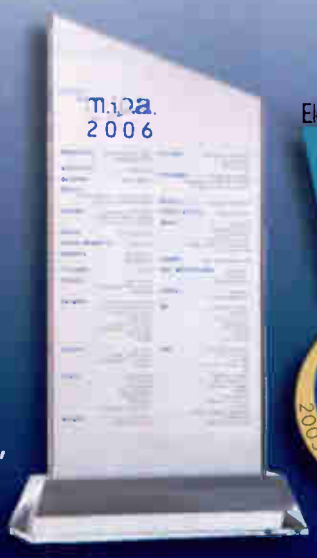
The New NT2-A, represents a major technological advancement over the legend that started a revolution, the NT2: a studio microphone that sold in the hundreds of thousands, and is the tone behind countless recording hits.

When you decide to invest in a studio microphone, look a little deeper than what is on the surface and you will see that RØDE stands alone.

No other microphone delivers the same combination of sound quality, engineering excellence, and true value for money.

THE RØDE NT2-A, Continuing the Legend!

The M.I.P.A is decided by a panel of people from 80 of the world's leading audio and music industry press. This is the Grammy of the music equipment industry, and this year the RØDE NT2-A won the **'World's Best Studio Microphone!'**



NT2-A

...the true sound of beauty

www.rodemic.com

RØDE MICROPHONES

up and down from dead-zero to full volume. After all, completely isolated tracks sound like a drum machine, not a drum kit. Once you find the lowest volume level where the toms sit nicely, find the spot at the top of their ideal volume range in the mix. This high point may vary from hit to hit depending on your drummer's consistency. Once you find the upper range, you can ride the fader or physically write it in on your DAW's volume graph within these parameters.

Toms can also be EQ'd individually using a 3-band approach. Start with the high tom and find the bright top end of the skin at about 5 to 8 kHz and bring that up. Next, there is sometimes a "tubby" muffled range that can be cut out (anywhere between 400 to 1.5k Hz). Lastly, find the fundamental at 100 to 200 Hz and add that to taste. DAWs make it easy to isolate and loop a portion of a single hit, making EQ'ing a quick process. Because you're riding the toms, you can get away with a bit more EQ than you could if the toms were up in the mix all of the time. Once you hear them in context, you can then fine-tune to perfection.

VIEW FROM OVERHEAD

The overheads bring the whole kit into focus and let the cymbals shine in the mix. We know that a shelving EQ from 8 kHz and up makes for some nice sizzle. However, adding some bottom end (100 to 200 Hz) to these tracks can really help emphasize the low end of the kick drum and toms. After all, you don't listen to a kick or tom with your ear next to the head; you hear them in the room. Because of drum kit logistics and overhead mic placement, the snare can sometimes lean to the drummer's left. (See "Before You Mix" on page 28 for some tips on how to keep things centered.)

To further bring the drums up naturally (or unnaturally) in the mix, you can compress the toms and overheads together. Adding a bit of mild compression—2 to 3 dB of gain reduction with a slow release (80 to 150 ms) and a mild attack (30 to 60 ms)—will tend to make them sound bigger and more in your face in the overall picture. You can accomplish this effect easily if you're mixing outside the box by sending your toms and overheads to the same stereo pair in your summing box and then putting the compressor across that feed. Or, if you're inside the box, bus your tracks to a stereo aux input and use a plug-in such as the Waves Renaissance compressor on that track. A hardware option might be a pair of the Retro Sta-Level tube compressors or Universal Audio's

TROUBLESHOOTER

SAVE MY SNARE TRACK!

Q: How do I quickly resurrect a badly recorded snare that is dull and has no punch or snap?

A: A badly recorded snare can often be helped by duplicating it and then treating the duplicates as separately processed members of the same "club." For starters, duplicate your track, either by multing it to a second channel on your console or physically duplicating it in your DAW. One of these dupes will be optimized for punch, while the other will be used to add snap. Alone, they will not have what it takes to flavor your drum mix, but that's the point—it's the combination that will work.

First, bring out the snare's low end on one track with some EQ at 100 to 200 Hz. Remember, this will be the foundation of your track, so don't be afraid to go for punch. Then treat the other track more severely, digging out the transient with a compressor set to a slow attack time (30 to 50 ms) and a fairly fast release (100 to 300 ms). The release time is tempo-dependent, so you can get away with a slower release time on a ballad than you could on an up-tempo song. Try to stay away from the dreaded "pumping," where the compressor gasps for breath in-between hits, bringing up the noise floor unnaturally. Set the EQ to bring out more of the top frequency range of the instrument at 1 to 3 kHz. Once both tracks please your ear, you can mix them accordingly. If you're mixing in a DAW, then make sure your latency is lined up perfectly by using delay compensation or physically correct it by sliding the tracks back by the amount of delay. Most DAWs will let you see how much latency is being introduced by a group of plug-ins. Take that number and move your entire track back to match up with its original position. Keep in mind that one track's latency may not match the others due to differences in plug-ins. *—Kevin Becka*

new 2-LA-2 Twin T4 leveling amplifier.

You can greatly enhance room mics by heavily compressing them and then adding a touch of the room to the mix. Sending it through a "personality" compressor such as the Distressor from Empirical Labs will give you the ability to crush the signal, bringing out the roominess of the sound and making it sound bigger than it physically is. Sending these mics through the Little Labs IBP can give you even more control over the sound by allowing you to play with the phase in relation to the close mics. Use the mix's low end to discern whether you're getting the most out of your room feed.

DRIVERACK 4800
LOUDSPEAKER MANAGEMENT SYSTEM

SYSTEMS SOUND BETTER WITH

DriveRack 4800

- 4 analog and AES/EBU inputs
- 8 analog and AES/EBU outputs
- Full Bandpass Filter, Crossover & Routing Configurations
- 31-Band Graphic and 9-band Parametric EQ on every input
- 6-band Parametric EQ on every output
- Selectable DSP inserts on all inputs and outputs including Classic dbx® Compression, Limiting & Advanced Feedback Suppression
- Loudspeaker Cluster and Driver Alignment Delays
- HiQnet™ networking and control
- Optional dbx ZC wall panel controls
- Optional Jensen® I/O Transformers

"When the audience hears Toby Keith, that's *all* they hear." *Dirk Durham, FOH Engineer*

"I knew the DriveRack® 4800 was going to be great the first time I tested it. None of us – including our monitor engineer Earl Neal, or Dave Shadoan, President of Sound Image – could spot the processed signal: it was beautifully transparent.

I can get anywhere on the front panel with just *two* button pushes. Everything can be visually represented on the 4800's color front panel display or via System Architect™ software on a laptop or wireless tablet PC – which is very important when you're surrounded by 20,000 screaming fans.

I've been with Toby as we've gone from small clubs to huge arenas...it's been a great ride, and the ride is getting better with dbx on board. The new DriveRack 4800 is just one incredible box."

Dirk Durham

The Toby Keith Big Throw Down II tour audio crew, L-R: Ryan Reynosa, Monitor tech; Russell Fischer, System Engineer; Dirk Durham, FOH engineer; Earl Neal, Monitor Engineer; John Brawner, System Tech.

Not shown but also available: DriveRack 4820 with tamper-proof front panel for installed applications.

dbx®
PROFESSIONAL PRODUCTS
dbxpro.com

'VERB VIBE

There are a couple of ways to address drum reverb in your mix. In a DAW, you could instantiate a plug-in on each track and work that way. This works well for single elements, but when you're working with a drum kit, it's more DSP-efficient to bus your tracks over to an aux input and have the plug-in on that channel. This technique works especially well if you have more than one flavor of reverb on a track (i.e., short, medium or long 'verb).

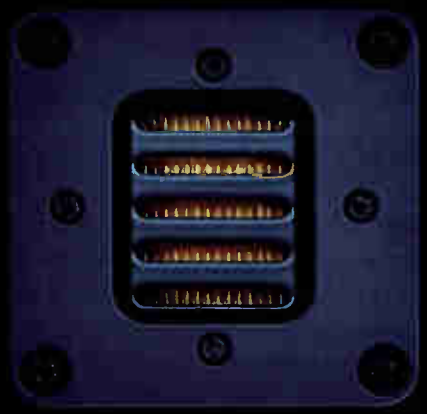
You can better organize your mix by labeling your bus sends rather than letting them retain their bus 1/bus 2 labels. Some DAWs will allow you to name your buses. In Pro Tools, for example, click on the Settings pulldown and choose I/O. Click on the Bus tab at the top and then, on the left, double-click on the bus you wish to rename. Once you confirm, this name will then be on the Insert window when you choose it for your send. Now when you bus to an aux input, your bus will be named in the channel. For simplicity, call it by the name of the reverb or delay's personality, such as Lng Vrb, Med Vrb, Shrt Dly, Lng Dly. Now when you look at your channel, you don't see a faceless bus but a label that corresponds to the chosen effect.

If you're looking for a very expressive and clean snare reverb, then create a secondary version of your snare to send to the reverb. This effect can be created by multing the snare to a second channel on the console and gating it, or duplicating the track in your DAW and stripping out everything on either side of the transient until only the snare hits are left. In your DAW, use a short fade on the front of the hit and a longer, tapered fade at the back to make it sound more natural and to keep the track from "clicking" when you cut across the audio. Be sure to take this track out of the stereo bus and send it only to your reverb. Bring your reverb return back as you usually would and add it to the mix. The effect will be the original snare remains as recorded, but you will have a much cleaner reverb return uncluttered by leakage from the other drums.

THIS OLD DRUM

If you need to beef up weak drum tracks or replace them altogether, there are some easy ways to do it through software. Digidesign's SoundReplacer or the Drumagog Drum Replacer operate within your DAW and come with a wide variety of sounds from which to choose. It's often a good idea to clean up a track before you add to or replace it. This technique can make a busy drum part less obtrusive in the

ADAM
PROFESSIONAL AUDIO



The ADAM A.R.T. Tweeter

Accelerated Ribbon Technology

ADAM's unique folded ribbon diaphragm moves air four times faster than any driver in any other professional monitor, resulting in incredible clarity, breathtaking detail and imaging like you've never heard before. You'll work faster, better, and more efficiency than ever.

A7

ADAMs For Everyone

The A7 combines ADAM's renowned A.R.T (Accelerated Ribbon Technology) folded ribbon tweeter with a state of the art 6.5" carbon fiber woofer, resulting in an extremely accurate monitor with all of the clarity, detail and spectacular imaging traditionally associated with the ADAM name.

- Two 50 watt amps (one per driver)
- 46Hz - 35kHz +/- 3dB frequency response
- 105dB SPL @ 1 meter
- Front panel: stepped level control & power switch
- Rear: tweeter level, Hi/Lo shelving EQs
- XLR balanced and RCA unbalanced connectors
- 2 year warranty

... and you can own a *pair* for only **$999!**

THRILLING EARS AROUND THE WORLD

(818) 991-3800 | usa@adam-audio.com | www.adam-audio.com

arrangement and maximize its impact.

You can also replace or enhance a weak snare the old-school way: placing a speaker on a snare in the studio and then sending the snare track out to the speaker. To accomplish this trick, you'll need a re-amping device such as the Radial Engineering X-amp or John Cuniberti's Reamp. You'll also need a speaker amp or guitar amp to get your signal up to speaker level. Send your existing snare through the re-amping device to the amp and then to the speaker. The pulse of the snare will then trigger the new snare, which you can record in the traditional sense or have it run live in your mix. For extra vibe, you can also put up a room mic.

GOING WIDE

The width of your mix is one of your most valuable palettes, but just because you can pan as wide as possible doesn't mean you should. Pan decisions depend on the arrangement of the other tracks and the production's musical style. For instance, to my ear, panning a solo piano hard-left and hard-right sounds ridiculous. Yet, a wildly busy pop or rock track can afford to be wider because you have to space your elements to give them a soundstage.

Making something speak might mean moving it just a bit further left or right of another element. This means that the drums might be better heard if centered when competing with a lot of other percussive elements panned to the sides. Think of the tracks as actors on a stage: If they're all shouting at once from center stage, then you have little chance of discerning individual voices. But if they are all spread across the stage, then you can hear everyone a little better. This puzzle needs to be solved individually for each mix and is a lot of fun once you get into balancing these relationships.

AIM HIGH

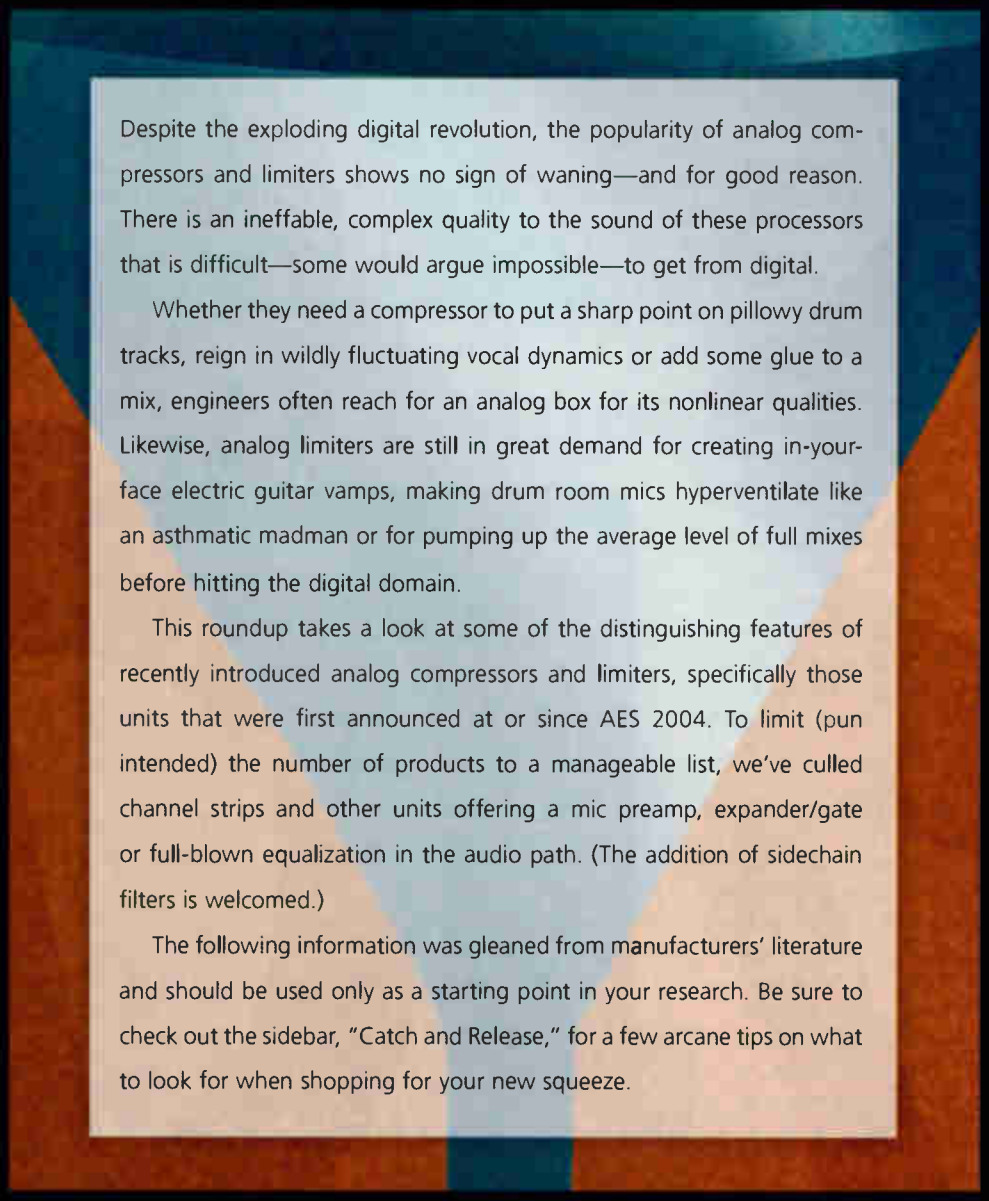
After everything is organized, cleaned up, beefed up and sprinkled with ear candy (aka effects), it's time to balance the whole mess. This is where a reference can be handy. It's not cheating to emulate your favorite drum mixes. How loud is the snare overall? How big is the kick in relation to the bass guitar? How does the whole kit fit in relation to the rest of the band? These questions can be answered by imitating a track you admire in other productions. As said earlier, know your direction before you start; it could save you a lot of time in the long run. ■

Mix technical editor Kevin Becka would like to thank David Rideau and Craig Schumacher for their help with this feature.

A Trip to the Slammer

A GUIDE TO NEW ANALOG COMPRESSORS AND LIMITERS

BY MICHAEL COOPER



Despite the exploding digital revolution, the popularity of analog compressors and limiters shows no sign of waning—and for good reason. There is an ineffable, complex quality to the sound of these processors that is difficult—some would argue impossible—to get from digital.

Whether they need a compressor to put a sharp point on pillowy drum tracks, reign in wildly fluctuating vocal dynamics or add some glue to a mix, engineers often reach for an analog box for its nonlinear qualities. Likewise, analog limiters are still in great demand for creating in-your-face electric guitar vamps, making drum room mics hyperventilate like an asthmatic madman or for pumping up the average level of full mixes before hitting the digital domain.

This roundup takes a look at some of the distinguishing features of recently introduced analog compressors and limiters, specifically those units that were first announced at or since AES 2004. To limit (pun intended) the number of products to a manageable list, we've culled channel strips and other units offering a mic preamp, expander/gate or full-blown equalization in the audio path. (The addition of sidechain filters is welcomed.)

The following information was gleaned from manufacturers' literature and should be used only as a starting point in your research. Be sure to check out the sidebar, "Catch and Release," for a few arcane tips on what to look for when shopping for your new squeeze.

ILLUSTRATION: KAY MARSHALL

THE SQUEEZEBOXES

The Alta Moda Unicomp (dist. by Las Vegas Pro Audio, www.lasvegasproaudio.com; $4,250) is an FET-based, dual-mono/stereo compressor with serious multiple personalities. Users can switch the unit's detection circuit to provide either a feed-forward or feedback scheme for different sonic textures. The sidechain's detector can also be switched to either RMS or peak-rectifier mode. And if the high-voltage, minimalist audio path (which is fully discrete, Class-A) is too clean for that guitar track you're whacking, then crank Unicomp's Warmth control to add second-harmonic distortion in proportion to the depth of compression. A Blend control allows you to mix unprocessed and compressed signals at the unit's output.

Alta Moda Unicomp FET-based compressor

The Buzz Audio DCS-2.2 (www.buzzaudio.com, $3,000) true Class-A dual-compressor system combines two independent compressors—one FET-based and the other using an opto cell—under one hood. The two compressors can be placed in series in any order or in parallel configuration. Use the Blend control to mix the compressors' output signals in any proportion when in Parallel mode or to adjust the blend of processed and unprocessed signals. Each compressor section also sports a defeatable transformer-saturation circuit and sidechain insert point; internal sidechain filtering is also provided. Two mono units can be linked, and a stereo-matched mastering version will be available for $3,500.

Buzz Audio DCS-2.2 combines two independent compressors.

API Lunchbox owners should also check out the Buzz Audio Essence ($1,000), a Class-A optical compressor designed and approved to fit the API 500 VPR Series rack frames. This mono module uses the Buzz Audio differential drive sidechain to process the positive and negative waveforms in two separate audio paths. A 10-segment LED ladder uses VU ballistics to show input or output level or gain reduction. Other goodies include Lundahl I/O transformers, built-in high- and low-shelving sidechain filters, an external sidechain insert point and a sidechain monitor switch. Multiple units can be linked in one rack.

Chandler Limited (www.chandlerlimited.com) recently celebrated Abbey Road Studios' 75th birthday by issuing the new EMI TG12413 Zener Limiter (price TBA), which is based on vintage EMI gear used to record The Beatles and Pink Floyd. The new, dual-channel limiter borrows from the '60s-era RS168 Zener Limiter and TG12345 console channel, but adds new controls for increased flexibility, including switchable input impedance (which changes the gain to drive the limiter softer or harder), three different dynamics settings, sidechain filtering, and 11-position attack and 21-position release controls. A stereo-link switch and VU meters cap off this beauty.

Chandler Limited EMI TG12413 Zener Limiter

The D.W. Fearn VT-7 (www.dwfearn.com, $4,800) dual-channel vacuum tube compressor features an all-discrete, Class-A, all-tube audio path and uses a pulse-width modulator for gain control. A total of eight dual triodes—a combination of 6072A and 6N1P tubes—and Jensen I/O transformers shape this dual-channel compressor's sound. Turning a special control knob for each channel simultaneously adjusts ratio and other parameters for harder or softer compression. A large VU meter for each channel can be switched to show either output level or gain-reduction amount. Channels can be stereo-linked.

Catch and Release

COMPRESSOR SHOPPING CONSIDERATIONS

When searching for an analog compressor or limiter to buy, you should consider a whole lot more than just the specs for time constants and ratio, and whether or not there's a tube or transistors in the audio path. Here are some pointers that go beyond the obvious.

First off, the type of gain-control element the unit employs to achieve gain reduction really affects its character. FET-based limiters are ultra-fast, and therefore fantastic for putting a firm lid on boiling guitar tracks or a finely sculpted point on a snare drum track. On the other hand, if you need something more natural- and transparent-sounding to "sit" a lead vocal track in the mix, the relatively slow optical (aka, opto or electro-optical) compressor is your friend.

Maybe you need versatility for handling many different tasks. A compressor that uses a VCA will generally give you that. Typically slower than FET-based but faster than optical compressors, units employing a VCA usually offer wide-ranging attack and release times and the ability to deliver extremely deep compression for taming the most unruly tracks. And while a variable-mu or variable transconductance compressor (which employs a vacuum tube for gain control) is unable to provide very deep compression (due to the tube saturation), the sonic "densification" it lends to tracks is a beautiful thing when you want to bring beef to the table.

For use on the mix bus, you'll probably want a compressor that provides an exponential taper to its ratio control; that will let you fine-tune very moderate ratios (below 2:1) with ease. And while limiters usually offer a maximum ratio between 20:1 and infinity:1, the incorporation of peak or look-ahead detection circuitry will also be necessary for effective use as a "peak" or "brickwall" limiter. RMS-detection circuitry is more effective for compression duties and not for limiting—that's something to keep in mind when looking at a unit that promises both compression and limiting capabilities solely on the basis of its wide-ranging ratio control. —*Michael Cooper*

UNWRAP™

Unsurpassed Stereo to 5.1 Conversion

More Pro for Your Tools

POWERCORE

PRO TOOLS HD

A Higher Level of Sophistication!

The reference mastering and film up-converter, UnWrap™, has been ported for Pro ToolsHD and PowerCore. Originally developed for the ultimate HD processor, System 6000, this full version algorithm offers a high level of sophistication with unprecedented control and resolution. An abundance of parameters facilitates the conversion of stereo and LtRt sources to 5.1 while remaining faithful to the original mix's width, timbre, spaciousness and other significant factors.

Features:

- Transparent up-conversion from stereo to 5.1, and from LtRt to 5.1
- World's primary high-resolution up-conversion algorithm
- Direct algorithm port from System 6000
- Precision aligned outputs for subsequent down-mix
- EQ and contour styles for center and surround channels optimization and control
- Additive, perfect down-mix and PONR presets included
- Available for Pro Tools and PowerCore: TDM and VST versions for Mac and PC

TC ELECTRONIC A/S DENMARK
✆ +45 8742 7000
TC ELECTRONIC INC USA
✆ (818) 665 4900
INFO@TCELECTRONIC.COM
WWW.TCELECTRONIC.COM

t.c. electronic®
ULTIMATE SOUND MACHINES

The Drawmer 1968ME Mercenary Edition (dist. by TransAudio Group, www.transaudiogroup.com; $1,995) compressor takes an unusual hybrid approach by combining a FET gain-control element with a tube

Drawmer S3 3-band optical compressor

makeup gain stage. This dual-channel unit features switched attack and release times (the latter including three program-dependent settings) and a sidechain listen function. Tom Hanks will love the unit's switchable Big function, which makes the JFET ignore low frequencies to lessen pumping and keep the bottom end rockin'. And forget tiny overload LEDs—the 1968ME's multifunction meters glow entirely red when levels approach clipping.

Where wide-band processing won't get the job done, Drawmer's new S3 ($6,995) 3-band optical compressor offers a solution. This stereo split-band compressor's sonic signature is sculpted by I/O transformers, passive components and 10 vacuum tubes per channel in a balanced, Class-A configuration. This baby cooks—an electronic oven keeps the opto cell's LDRs at optimal temperature to maintain their calibration and performance. The VU meters can be switched to show peaks or re-scaled to accommodate smokin' +30dBm maximum output levels. Adjustable band-crossover points, a stereo balance control, and dedicated gain-reduction metering and bypasses for each band complete the picture.

The elysia alpha compressor (www.elysia.com, $11,999) goes beyond mundane feature sets with the addition of M/S pro-

elysia alpha adds M/S processing for mastering.

cessing for mastering applications. Mid- and side channels have independent access to filtering and can also be linked. The dual-channel, all-discrete, Class-A dynamics processor also features soft-clip limiters, feedback and feed-forward sidechain modes, stereo channel-linking, and built-in HPF and LPF sidechain filters. Parallel compression is complemented by a Mix controller that allows combining unprocessed and compressed signals in the desired proportion.

On a tight budget? The **FMR Audio** (www.fmraudio.com, $249) Really Nice Levelling Amplifier (RNLA7239) is a single-channel, ⅓-rackspace unit that offers unbalanced inputs that accept TRS connections from console inserts, balanced mic preamps and so on. Outputs are balanced but non-differential (i.e., the cold signal is not driven), and hardwire bypasses output signal even in the event of AC power disruption. A Log Rel function speeds up release time in relation to compression depth to restore punch.

The single-channel **Groove Tubes** Glory Comp (www.groovetubes.com, $3,499) joins a relatively short list of variable transconductance-based compressors currently in production. The all-tube design wires up large pentode tubes as triodes so that they can be matched and recalibrated by way of front panel pots. This, along with multiple linking setups and switched controls, provides the rock-solid imaging and repeatability necessary for applications such as mastering. Dual-release modes (providing linear or logarithmic/exponential response) and sidechains with built-in filters and external connections increase flexibility. Cranking the Glory knob adds second-order harmonics to the processed signal for a richer sound.

PREEMPTIVE STRIKE

Pro audio equipment designer Stayne McLane says the secret gain-control element in his **InnerTUBE Audio** Dual Atomic Squeeze Box (www.innertubeaudio.com, $6,750) is a first and was chosen for its uncanny transparency, even when processing stereo, broadband, percussive material. The all-tube, 2-channel (linkable) compressor uses an outboard power supply (included), octal dual triodes and nickel-core I/O transformers. Attack and release times are program-sensitive. The ratio control has a linear taper, and the unit can deliver more than 20 dB of gain reduction.

The **Joemeek** Mc2 (www.joemeek.com, $330) stereo optical compressor takes the "stereo" bit seriously. Included in the unit's feature set is a stereo-width processor that can take program material from mono to "wide stereo." Unlike many opto compressors, the Mc2 offers attack, hold and release controls; ratios up to 10:1 are offered. Two multisegment LED meters show gain reduction and output level, respectively. Both -10dBV and +4dBm nominal operating levels are accommodated.

The 6-channel **Neve** 8051 (www.neve.

The analog console for the digital world:
Solid State Logic AWS 900+

Mousing through your mix is no way to make a hit record. But in this DAW-based world, what other choice do you have? Solution: the new **AWS 900+ Analogue Workstation System**, which offers the unique combination of a compact, world-class analogue mixing console and a comprehensive DAW controller. Every inch a 'real SSL', the AWS 900+ is the answer for producing exceptional results in today's digital environment.

Solid State Logic
AWS 900+
Analogue Workstation System

Make It Happen With GC Pro!

It's pretty simple: GC Pro offers the very best pro audio products, at the excellent pricing you'd expect from the world's largest pro audio dealer. Then, we add world-class service through local GC Pro Account Managers who deliver the expertise and extraordinary service you deserve.

From rare/vintage gear to the most sophisticated audio technology, we are your one-stop solution. Contact us today for a personalized consultation.

GC Pro has expert Account Managers in nearly every territory of the USA... contact us today!

800-935-MYGC
www.gcpro.com

Music • Post • Live Sound • Lighting

GCPRO
www.gcpro.com

eu, $9,650) uses the same feedback topology as the company's 33609 compressor for that trademark Neve sound. Each of the six transformer-balanced audio paths can be conditioned at once by either of two sidechains, using any surround or multistereo format. Sidechain trims and filtering increase

The Neve 8051 can be used for surround apps.

the 8051's flexibility for surround applications. Also included are electronically balanced key and LFE filter inputs (one each) and control voltage I/O; the latter is useful for linking multiple units or to a 33609.

Brand new from Pendulum Audio (www.pendulumaudio.com) is the PL-2 ($2,500) analog peak limiter, which offers both JFET and MOSFET peak-limiting modes for hard- and soft-limiting, respectively. This brickwall limiter's two channels are fitted with stepped I/O controls to accommodate session recall, and both channels and several units can be linked for stereo or surround mastering. The peak-limiter circuit—originally used in the company's Quartet II tube recording channel—stays out of the signal path when program level is below threshold. Gain reduction is shown via 13-segment LED array.

The Retro Instruments Sta-Level (dist. by Vintage King Audio, www.vintageking.com; $2,350) tube compression amplifier is a near-replica of the vintage (circa 1956) Gates Sta-Level. Users can choose between using either a 6386 tube or a pair of more readily available 6BJ6 tubes (in addition to the other five stock tubes) to drive this mono box. Two or more units can be coupled for sidechain, stereo or surround applications. Custom-wound, balanced I/O transformers and a spartan control set grace this blast from the past, which can deliver up to 40 dB of gain reduction.

The two independent channels of the Rupert Neve Designs Portico™ 5043 (www.rupertneve.com, $1,895) compressor/limiter duo can be linked for stereo operation and ducking duties. A bus input allows

Rupert Neve Designs Portico 5043 comp/limiter

connecting the 5043 to other products in the company's modular and expandable Portico system to create an integrated setup for tracking and mixing. The VCA-based 5043 uses I/O transformers and almost entirely discrete component amplifiers. Both feedback and feed-forward modes of compression are offered, with ratios ranging from 1:1 to 40:1.

Why settle for one gain-control element when you can have two? The Shadow Hills Mastering Compressor (www.shadowhillsindustries.com, $6,500) places two gain-control elements—a T4B opto cell and Class-A VCA—in series to shape the compression slope. Alternatively, either or both elements can be bypassed. Choose from among three different custom output transformers—dubbed Nickel, Iron and Steel—at the flip of a switch to get distinctive sounds. A stereo-link function and switched rotary controls accommodate mastering duties, but dual-mono operation is also afforded for tracking and mixing. A built-in sidechain filter can be activated to reduce pumping on bass-heavy material.

The SM Pro Audio OC8E (www.smpro-audio.com, $609) multichannel compressor packs eight channels of electro-optical compressors—each having its own VU meter and bypass switch and separate controls for ratio, attack, release and output gain—into a 2RU chassis. Rear panel I/Os are all on ¼-inch jacks. The unit's Class-A, high-voltage signal path is transformerless.

The Toft Audio DC-2 (www.toftaudio.com, $800) FET compressor includes a line preamp with front panel ¼-inch instrument input jacks for each of its two linkable channels. Input and output gain can each be boosted or attenuated up to 20 dB. Balanced I/O connections and VU meters grace this unit designed by Malcolm Toft, recording engineer for The Beatles, David Bowie, James Taylor and others.

Poised for release sometime this winter is the Universal Audio 2-LA-2 (www.uaudio.com, price TBA) twin T4 levelling amplifier. This dual-channel, tube-amplified unit takes the original LA-2A's all-discrete, Class-A circuitry and adds defeatable stereo-linking and switchable slow and fast recovery times. (The latter is courtesy of a second T4 cell included in each channel.) Ten tubes and custom I/O transformers are part of what makes this puppy sing. ■

Mix contributing editor Michael Cooper (www.myspace.com/michaelcooperrecording) is the owner of Michael Cooper Recording in beautiful Sisters, Ore.

MX200

Think inside the box.

The MX200 Dual Reverb Effects Processor changed everything by combining the rich sound of Lexicon® hardware reverb with the flexibility of full automation and control within your DAW program via VST® and Audio Units plug-ins.

MX400

Think inside a REALLY SPACIOUS 4-in/4-out box with 17 Lexicon® reverbs, 9 delays, 8 effects plus dbx® compression and de-essing.

The new MX400 Dual Stereo Surround/Effects Processor continues the Lexicon legacy. More power (quad processors). More programs (223 factory/223 user). More electronic routing options (seven). VST® and Audio Units plug-in operation via USB. Get the inside-the-box story of the MX400 Dual Stereo Surround/Effects processor online or at your Lexicon dealer.

lexiconpro.com

Lexicon

A Harman International Company

BY PAUL TINGEN

Jim Abbiss

Bringing Old-School Savvy to New British Bands

In recent years, Jim Abbiss has stepped into the limelight as the producer of a string of hit records by mainly young and trendy British bands. Most notably, he produced Arctic Monkeys' *Whatever People Say I Am, That's What I'm Not*—a phenomenon in the UK, where it was the fastest-selling debut in album chart history; it also reached the upper regions of the U.S. charts.

Whatever People Say was nominated as Best Album of 2006 for the prestigious Mercury Music Prize (Britain's equivalent to the Grammy Awards), as was another Abbiss production, Editors' *Back Room* (2005, a UK Number 2 album). He also co-produced Ladytron's *Witching Hour* (2005) and Kasabian's eponymously titled debut album (2004), and he had production input into recordings for Placebo, Suede, Lamb, UNKLE, Clearlake, Goldfrapp and more. In addition, he co-produced Kasabian's latest album, *Empire*, with the band.

This impressive track record must put Abbiss at the top of many a young bands' "to call" lists, but strangely, very little is known about the man. Google his name, and all that turns up are some credit lists and a few name-checks by bands he's produced. One of the reasons for the lack of information is that Abbiss has done hardly any interviews. This is, he says, speaking in the mix suite at Olympic Studios in West London, "because I consider what I do in the studio as the background to what the artists are doing. It's not about putting my stamp on records."

With very little to go on, journalists have categorized Abbiss with tags like "electronic rock producer" and "indie rock producer" because electronics and heavy, jangly, electric guitars are featured on many of his productions. The producer balks at such portrayals, however, effectively arguing the title of that latest Arctic Monkeys album. "I hate being pigeonholed. Having said that, I do like working with young bands," he says, "because it takes me back to the excitement of when I was 14 and played in a band."

As a teenager in the early 1980s, Abbiss not only played in guitar bands, he also got involved in electronics and built a drum machine. The young man felt inspired by the D.I.Y. approach of the latter days of punk and "the original indie music explosion in the UK and early electro from the U.S." Finding that he didn't excel as a musician, Abbiss started work as an assistant engineer at Spaceward Studios in Cambridge and then moved to the Power Plant in London, where he ran the common gauntlet of teaboy, tape op and assistant engineer before becoming chief engineer at Maison Rouge.

When Maison Rouge closed in 1990, Abbiss went freelance and built up an impressive resume with engineering and remix credits for the likes of Björk, Massive Attack, The Verve, Sneaker Pimps, System 7, David Gray and many others. Yet by the end of the 1990s, Abbiss had that sinking feeling of his day job turning into drudgery. The way he handled this occupational crisis laid the foundation for his current successes as a producer.

PHOTOS: PAUL TINGEN

It sounds like a major shift happened for you in the late 1990s.

Yes. I found myself doing endless sessions, some of which I didn't always want to do and some I don't even remember anymore. So I took a couple of years off to write music, after which I came back to working in studios refreshed and looking for bands that I really wanted to work with and be more creative with.

Recording is supposed to be a creative process, yet I had worked on so many projects in which people treated recording as a series of jobs. They would put up wall charts, and it would be drums for three days and then bass for three days and so on. I'd also had four programming rooms over the years, in which I did my own writing and a lot of dance music. That method is now taken even further, with people recording drums in a studio and then going into a small programming room in an industrial estate to do all their programming. I don't think anyone really enjoys that process. I got bored staring at a box. I realized that I was happiest in a studio with lots of equipment and being able to go wherever the mood takes you and the band. The best use of my brain is not looking at a computer screen; it's getting musicians to play together.

Can you give some examples of how your working methods changed after taking two years off?

I returned to work by taking part in the making of UNKLE's

64 channels of digital I/O direct to Pro Tools | HD®.

So simple, it's almost black and white.

With the XLogic Delta-Link MADI HD, MADI-equipped digital mixing consoles, routers and audio converters can be interfaced directly with your Pro Tools|HD® system, eliminating the requirement for complex workarounds.

There's no need for multiple, expensive I/O units - Delta-Link delivers 64 channels of digital audio input & output in a single hardware interface - at $3,595 MSRP.

For larger Pro Tools|HD® to analogue A/D D/A, AES/EBU or ADAT systems, combine Delta-Link MADI HD with the new Alpha-Link range of SSL Audio Converters and create complete I/O solutions starting at $7,200 MSRP.

It's time to connect with SSL - visit us at www.solid-state-logic.com.

XLogic Alpha Link - SSL Audio Converters

• Alpha Link MADI SX - MADI + AES/EBU + 24Ch A/D D/A

• Alpha Link MADI AX - MADI + ADAT + 24Ch A/D D/A

• Alpha Link AX - ADAT + 24Ch A/D D/A

XLogic DELTA-LINK

XLogic ALPHA-LINK

Oxford +44 (0)1865 842300 New York +1 (1)212 315 1111 Los Angeles +1 (1)323 549 9090
Paris +33 (0)1 48 67 84 85 Milan +39 039 2328 094 Tokyo +81 (0)3 5474 1144

www.solid-state-logic.com

Solid State Logic
SOUND | | VISION

Pro Tools|HD is a registered trademark of Avid Technology Inc. No endorsement or affiliation is implied.

Psyence Fiction, which was a watershed for me. It was a fascinating project, and I found DJ Shadow [bandmember with James Lavelle] inspirational to work with. His attention to detail was incredible. He did not know any technical terms or how the desk worked, so he would ask for sounds that gave him a feeling. He'd say things like, "When it comes to the middle section, it should have the feeling of an airplane coming over and nearly deafening you." The way he approached music made me completely rethink the way I did sound. After that, the desk became a much more creative tool again.

Also, I try to make recording as much like a performance as possible. I like to have the recording room set up for the whole band for the whole time we're recording. If at any point someone goes, "I'm not happy with the way we did so-and-so," they can go and play it again. All we need to do is begin a new session in Pro Tools and have another go. But if you have invested a lot of time in organizing things with wall charts and so on, you don't want to go back and redo things because it's such a pain to do. So I don't use wall charts. This means that you don't have the drummer bored shitless after the first week because he's got nothing to do anymore.

I always try to get a song to the stage where all main parts are recorded, including the vocal, before moving on to the next song. All the details may not be there yet, but when you put the song back on a couple of weeks later, it makes sense as a song. Of course, I do make notes, and when we feel that we need an additional part or something, I'll make a note of it. But I take fewer notes now than I have ever done, because when you put a track up again after you've had a couple of weeks break from it and everybody is there to listen to it, it will be evident to everyone if it needs something.

Abbiss favors mixing on the vintage 16-channel EMI TG1 mixing console.

Finally, everyone can buy a computer and loads of plug-ins now, and that's great. I'm all for the D.I.Y. approach. But the result of everyone using the same equipment and the same presets is that many records sound the same. With the D.I.Y. approach in the past, people had many different collections of equipment, and they had to get the best out of what they had. They had to push what they had to its limits, whereas now, you can buy a plug-in or effects bank with classic sounds and it all kind of blands out. That doesn't interest me. What interests me is equipment that has been built with great care and has great character. I'll always prefer a dedicated hardware box over a plug-in.

The Arctic Monkeys' Whatever People Say I Am, That's What I'm Not *was recorded at The Chapel Studio near Sheffield over a period of 15 days with you and Ewan Davies engineering. Can you tell us the story of the making of that album?*

I didn't do pre-production with the band because I didn't need to. There was only one song that needed to be re-thought, "Riot Van," because they had changed quite a bit

Fine Tuning.

Two channels of four band EQ
with multi-position range control

The 5500 Dual Equalizer.

All Discrete from API

www.apiaudio.com
301.776.7879

api

Phat's good.

of the lyrical content and structure, and they were not sure how to go about finishing it. But the rest of the songs were very well worked out, so it really was a case of them setting up and playing the songs through. They had done a lot of touring and were playing things very fast, so I generally tried to get them to play a bit slower so you could hear the words.

I had the whole band in one room, with the two guitar amps in a booth and the bass amp in the corridor. All the musicians stood around the drums and had headphones and their own mini-mixers. For a few songs, we baffled Alex [Turner], the singer, because he wanted to sing live, but for two-thirds of the songs, he just played guitar and overdubbed his vocal afterward. The microphones were pretty regular: AKG D 112 inside of the bass drum; Electro-Voice RE20 outside of the bass drum; Shure SM57 on the top and bottom of the snare; Sennheiser MD 421s on the tom-toms, again top and bottom; and AKG C 12s as overheads. There were a couple of tracks on which the ride or hi-hat needed to be a bit louder, so I had a Neumann 84 on each of them. I also placed an AKG C 451 at the side of the snare drum, heavily compressed to give front end to bass and snare. We had a couple of room microphones up, but didn't use them much.

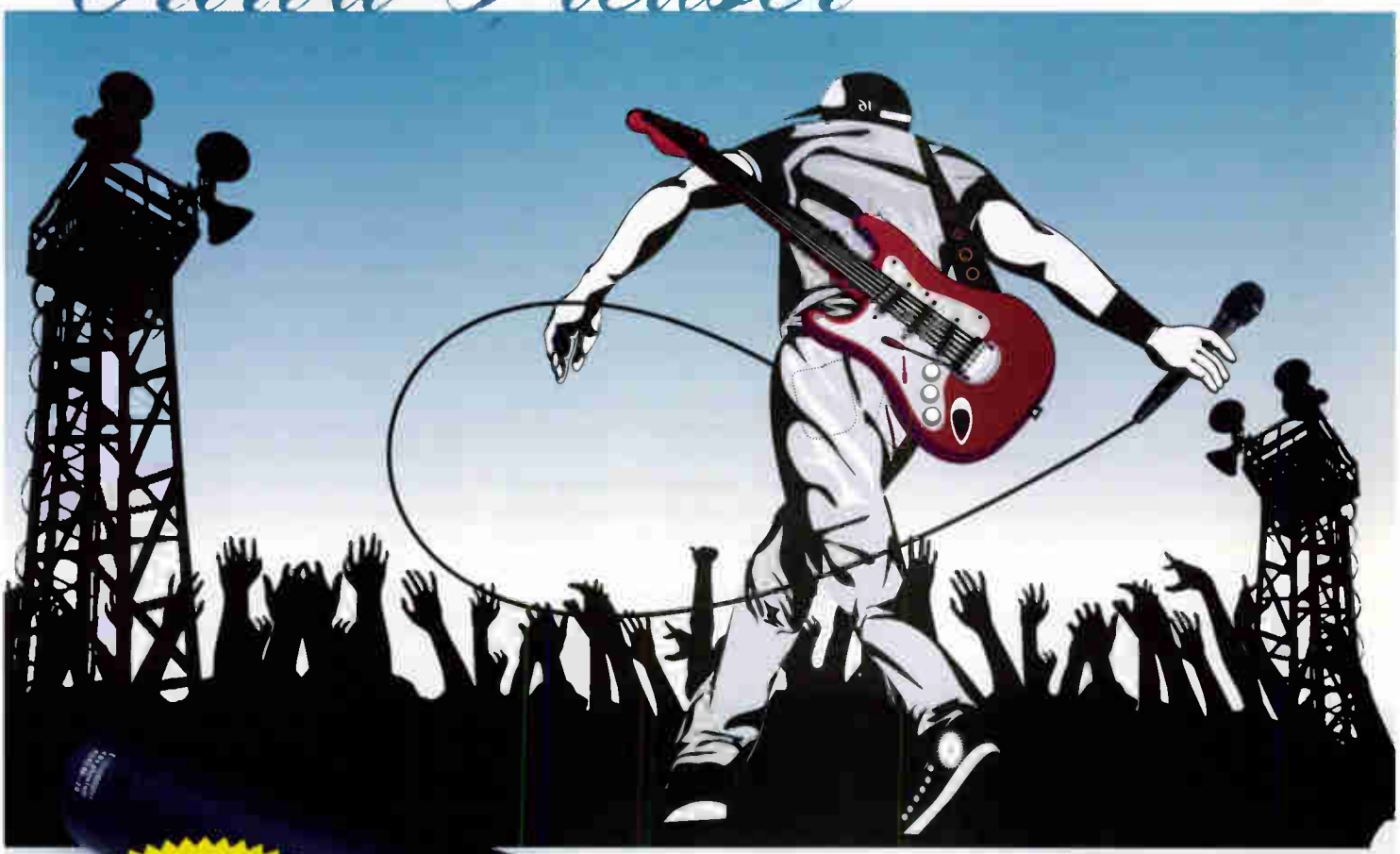
For guitars, I generally start with an SM57 and a Royer 121 together, placed slightly off-center. It's the perfect combination: If I want to brighten the sound, I'll turn up the 57; if I want warmth, I'll turn up the Royer rather than EQ things. The bass went through my favorite amplifier, the Portaflex B15, which is a beautiful valve combo, and it had a Sennheiser MD 421, and I'll have a disused NS10 cone hanging from a stand, wired up to an XLR. Its frequency range is 20 or 30 Hz to maybe 500 Hz, which is good for picking up the low end of the bass. We used a Neumann valve M149 for the vocals going through an 1176. Half of the microphones went through the Amek desk at The Chapel Studio; the other half went through external mic pre's, depending on what sound I liked. I used Massenburg GML 2032 for the top-end stuff because it sounds really clear, and the rest were old valve Telefunken pre's or APIs.

You recorded the album to Pro Tools. Didn't you say that you wanted to get rid of computer screens?

I love tape, but it's just too time-consuming to use it. I use Pro Tools as a tape recorder and for quick editing, very much in the same way people used razor blades years ago. I don't use things like Beat Detective unless I'm desperate. I'll do several band takes and will go through them and select the best sections from their best takes so I don't need to drop in or do overdubs. The Pro Tools systems have become so much better in recent years that the sonic difference with analog is tiny and not worth the additional effort involved in using multitrack tape. I've always been more interested in the feeling you get from a piece of music and whether the take is great than with the technical aspects of things. But when I was mixing in the early days of Pro Tools, I found that I didn't get the same depth of sound, whereas with tape, it all seemed to glue together.

Barny [mixer of the Arctic Monkeys album] and I did find, however, that when it came to mixing, things didn't sound right coming off Pro Tools and through the J Series SSL desk at Olympic Studio 1. We couldn't put our fingers on what it was, so we asked Olympic whether their old reconditioned 16-channel EMI TG1 desk was available. The desk is originally from Abbey Road and has incredibly well-made early transistor circuitry. Per channel, it has two tone controls, a compressor, a pan and a line gain, and within an hour of getting some basic EQs, it sounded much better than the SSL. Because we had only 16 channels, we had to submix

Crowd Pleaser



SEE US AT
NAMM
BOOTH #6976

VX-5

Hand-Held Vocal Condenser

Powerful - Stylish - Innovative

The new VX-5 from Audix takes the mystery out of using a high quality condenser microphone for live vocals.
By incorporating a -10 dB pad and a bass roll-off filter , the VX-5 is like having two mics in one.
Whatever your style of music , the VX-5 will rise to the occasion and take you all the way there.

FOR LIVE SOUND & STUDIO APPLICATIONS

- Features pad and roll-off
- Ultra smooth and accurate
- Dual stage grill ball
- Precision die cast zinc body
- Excellent gain before feedback

AUDIX
MICROPHONES

FOR A DEALER NEAR YOU CALL: 800-966-8261
TEL: 503-682-6933 www.audixusa.com

stuff inside of Pro Tools. It was very straightforward and all about the balance and not about mix tricks.

Moving on to Kasabian, their mixture of soaring, electro-flavored and indie-influenced rock is perhaps more typical of the stuff you produce. How did you go about producing their new album, Empire*?*

The recordings took place over three-and-a half months at Rockfield Studios in Wales and involved about every strategy in the recording book. The band hadn't worked out the entire album and arrangements before we started. There were some tracks that were maybe just an idea or a short demo, while other tracks were full-fledged songs, which often evolved into something else. It was an ongoing process of writing, arranging and recording—sometimes overdubbing, sometimes recording the whole band together. We decided on a song-by-song basis what the best way was of doing things.

Did you use a similar recording setup with the Arctic Monkeys?

It was quite similar, although Rockfield has quite a few Neumann U67s and we used a few of them. Rockfield also has a Neve with great-sounding preamps and a rack with Rosser mic pre's, and we used both. I also hired the TG1 and took it over to Rockfield and recorded the drums through that. One half of the album is more rock 'n' roll and the other half is far more keyboard- and sequence-oriented. There are some bits where the two overlap, but the rest is almost done in two different styles.

How did you work with the keyboards?

I have synthesizers like the ARP 2600, ARP Axxe, a Korg MS10 and Oberheim OBXa. Almost all of the stuff that I own are toys for musicians to play with, like old tape delays, spring reverbs, weird guitar pedals, synthesizers and guitar synths. We used quite a bit of the old [Sequential Circuits] Pro-One synthesizer, which is a great keyboard. We also used an old EMS guitar synth, the Synthi Hi-Fly. It's a white, plastic, bulbous-looking thing with 10 controls on it, and Serge played the keyboard part on his guitar and it ended up sounding halfway between a guitar and a synth. Other keyboards that we used were the OBXa and MonoPoly.

Empire*'s rockier tracks were mixed by Andy Wallace in New York. He's known for his work with Nirvana, Sonic Youth, Jeff Buckley, Rage Against the Machine, System of a Down. What were your experiences?*

I was very surprised to be met by this small, gentle, 68-year-old guy with white hair and glasses. He mixes in a very "old-school" way. He mixes the songs in about three to four hours, and it's all about subtle bits of EQ and where the faders are. He was constantly adjusting instruments that were playing with the vocals so you could hear the vocal, and then when it stops, you can hear the instruments. He hardly had any outboard gear plugged in—perhaps a plate, a short room, a stereo harmonizer, a delay and that was it.

It sounds like you found a bit of a kindred soul in Wallace.

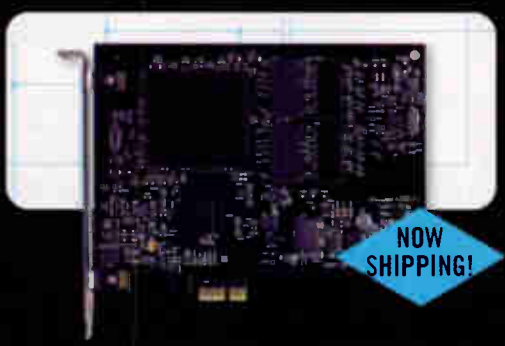
Yeah. He commented that in the old days, mixing would be a small percentage of recording because people made sure that everything on tape would be the best performance with the best sound. That's also the way I work, and I realize that I'm a dinosaur. I'm not a retro person; I like to think that I make records that are current. But I realize that in the current economic landscape, studios are closing and it's getting harder and harder to work the way I do. But as long as I can work like this, I will because I think it is the best way. ■

Paul Tingen is a Dutch guitarist and writer who lives in Scotland.

UAD

"The UAD-1 is possibly the best value of any product available for a DAW."
-Mike Clute, Pro Sound News

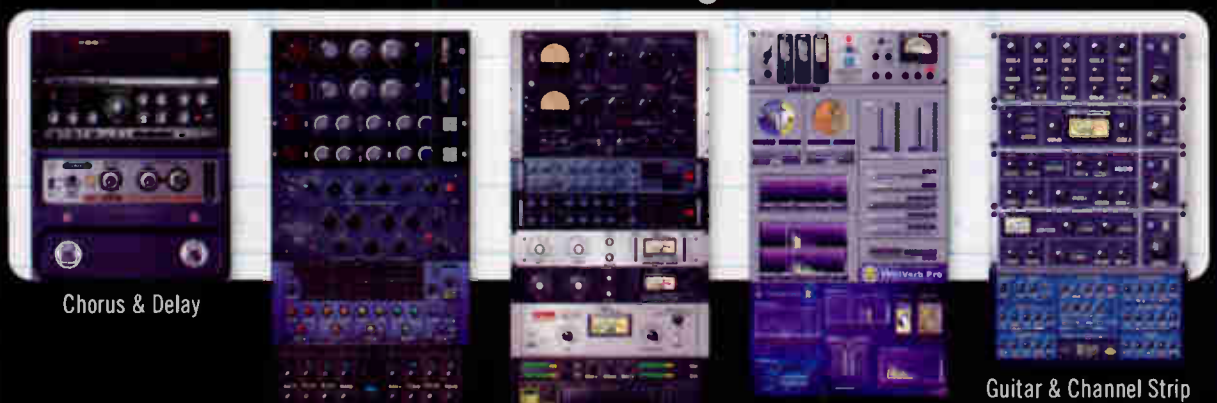
UAD-1 PCI DSP Card



UAD-1e PCI Express DSP Card

Powered Plug-In bundles to suit every need and budget – purchase more plug-ins 24/7 @ my.uaudio.com, including exclusively licensed Neve® and Roland® emulations.

Powered Plug-Ins™



Chorus & Delay

Equalizers

Compressors & Limiters

Reverbs

Guitar & Channel Strip

analog ears | digital minds™

www.uaudio.com • Customer Service & Tech Support: 877-MY-UAUDIO • Business, Sales & Marketing: 1-866-UAD-1176

BY HEATHER JOHNSON

Fireproof Recording

Young Man Goes West, Opens Up His Home

Adam Lasus (inset) has a comfortable gig in his new West Coast studio space.

When rent on his Brooklyn, N.Y., studio, Fireproof Recording, jumped from $1,000 a month to nearly quadruple that amount, producer/engineer Adam Lasus faced a difficult decision: go against his philosophy of offering affordable recording to D.I.Y. and indie bands, or move out of the converted 1800s firehouse. Having produced and/or engineered albums for Madder Rose, Helium, Gigolo Aunts and, more recently, Brooklyn-based indie darlings Clap Your Hands Say Yeah, he chose to relocate—all the way to the other coast in Studio City, Calif.

"It was the classic scenario," says Lasus from his new operation, which opened in early 2006. "My wife, Linda, and I realized that for the same money we were paying on rent for our tiny New York apartment, her office and my studio, we could buy a house with a yard and space for a studio." They chose the L.A. area to be near Lasus' in-laws, which meant grandma could help babysit their newborn son.

They found a home that serendipitously included a separate 600-square-foot building that the previous owner had used as a soundproofed rehearsal space, with cathedral ceilings and nonparallel walls. Getting the space studio-ready required very little construction. Lasus hired a contractor to install windows for an iso room and control room and filled a hollow wall with Fiberglas. "We had to do some sonic treatment with foam, but because it's built on concrete, the place sounds fantastic," says Lasus, who did much of the design work on his Brooklyn studio.

Lasus brought most of his equipment from Fireproof-East, including a 32-channel Neotek Elan (he first worked on one at Fort Apache Studios in Boston, where he engineered albums for Juliana Hatfield, among others) and an Otari MX-80 24-track machine, which he almost always uses to record basic tracks "until the tape is full, then I transfer over to [MOTU] Digital Performer," he says. For outboard, he favors his Chandler Limited, Wunder Audio and Brent Averill 312A mic pre's, UREI 1176, Focusrite Red, Allison Research Gain Brain and Manley ELOP compressor/limiters, as well as "quirky" items such as a Maestro Echoplex tape delay, a Roland RE-150 Space Echo, and Audio Design Recording's Vocal Stressor compressor and Compex limiter. Though he incorporates various plug-ins and uses Digital Performer for automation, he usually mixes by going back through the Neotek and outboard gear down to a Studer A80 ½-inch 2-track, "making records that sound like the ones we grew up on," he says.

To make guests feel at home, he vibes out his space with comfortable furniture, lava lamps and an assortment of instruments, including a drum klt, a Moog synth and Casio keyboards, guitars, amps and pedals, and a Mattel Optigan, a nifty toy keyboard that comes with disks filled with '70s-era drum, guitar and piano samples. Jon Brion, Tom Waits and Blur have used the Optigan on various projects.

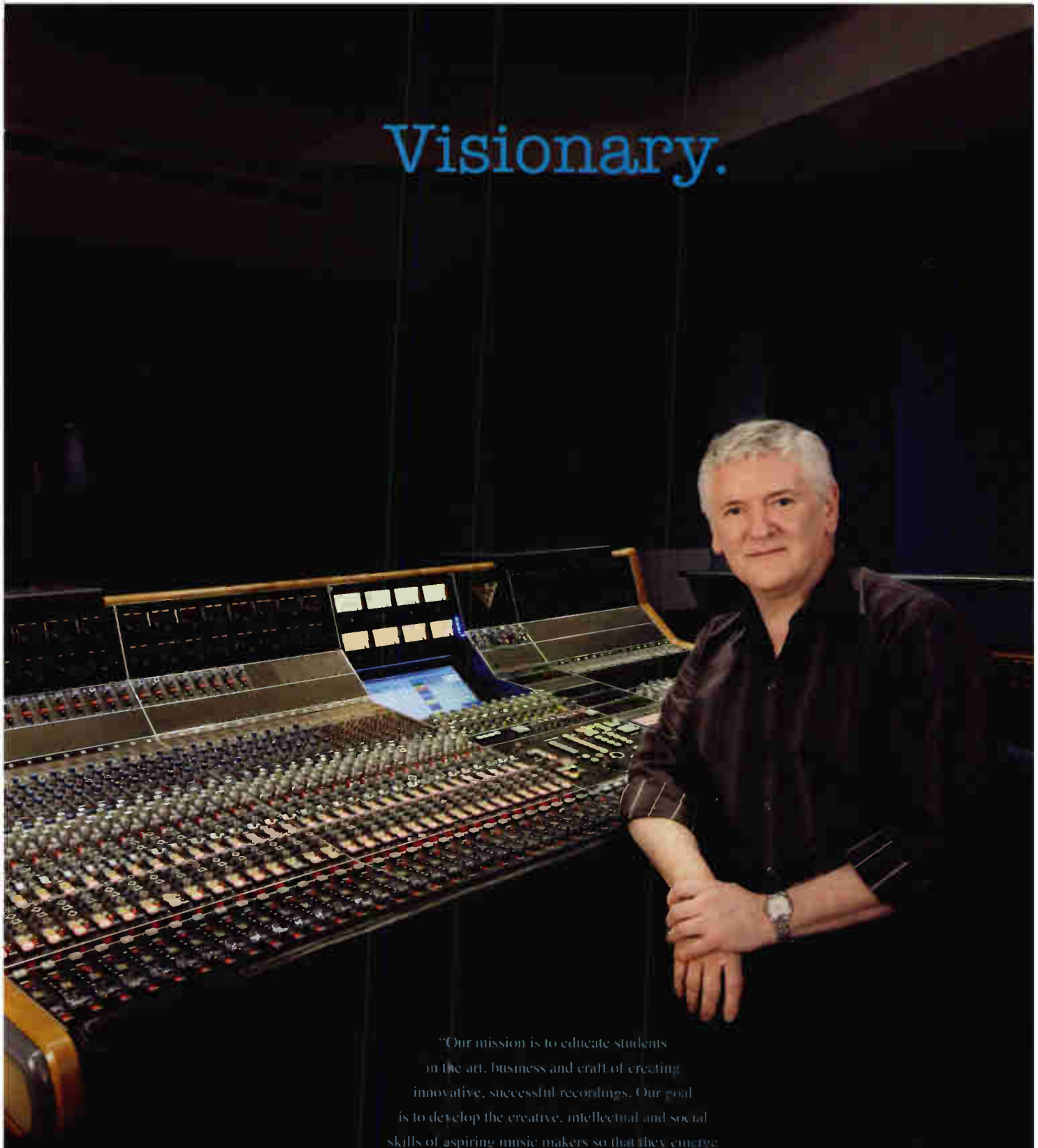
Though Lasus found an ideal space in L.A., he built his niche in New York and had some trepidation about relocating. Well, he barely had the truck unloaded when Clap Your Hands Say Yeah's self-titled release—recorded in two weeks at his Brooklyn studio—hit big, ultimately selling more than 200,000 copies worldwide (with no record deal), landing a slot on *Rolling Stone*'s Hot List, and getting airplay on L.A. powerhouse radio stations such as KCRW and Indie 103.1 FM. As soon as L.A.'s indie scene found out that the CYHSY producer lived and worked nearby, Lasus received a wave of new clients from around town, as well as bands from throughout the U.S. and as far off as Germany and the UK.

He recently finished tracking an album with singer/songwriter and former Varnaline front man Anders Parker, backed by the exceptional lineup of drummer Ken Coomer (Wilco), pedal steel player Eric Heywood (Son Volt, The Jayhawks), bassist Jennifer Condos (Jackson Browne) and guitarist Kirk Swan (Dumptruck, Steve Wynn, John Wesley Harding). With the exception of Parker and Heywood, who recorded in the iso room, the band recorded in the control room. "It's my biggest room," says Lasus, who also recorded Varnaline's self-titled album. "Ken Coomer was 20 feet away, backed up against the wall so that I could use room mics. The bass player and guitarist were a couple feet from me, so it was sort of a fun, cozy vibe. You feel like you're more a part of the session instead of someone that's looking at it from between the speakers."

Now that the L.A. community is starting to embrace its latest East Coast import, Lasus can pick up where he left off in his once-affordable Brooklyn neighborhood. Clap Your Hands—and roll tape. ■

Heather Johnson is a Mix *contributing editor.*

Visionary.



"Our mission is to educate students
in the art, business and craft of creating
innovative, successful recordings. Our goal
is to develop the creative, intellectual and social
skills of aspiring music makers so that they emerge
as the next generation of visionary music industry leaders.
**Our new API Vision console allows our students
to discover their musical dreams."**

Jim Anderson, Chair, Clive Davis Department of Recorded Music, Tisch School of the Arts, NYU

www.apiaudio.com

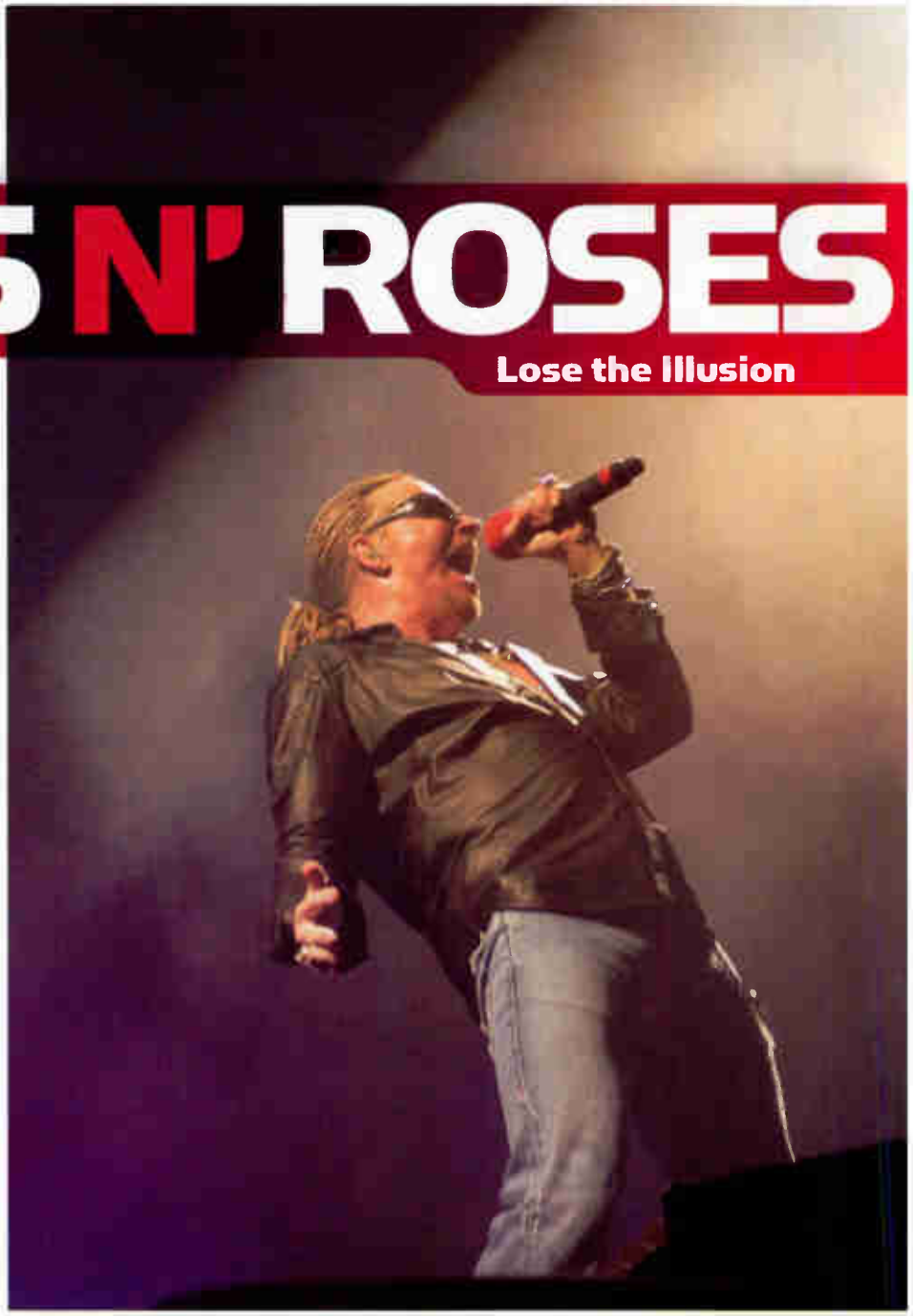
301.776.7879

api

GUNS N' ROSES

Lose the Illusion

By Gregory A. DeTogne



ALL PHOTOS EXCEPT ENGINEERS SHOT PAUL NATKIN

Tirelessly flogged in the media for every manner of abuse, imagined or otherwise, Guns N' Roses is still legitimately regarded by many as one of the biggest American rock 'n' roll bands to emerge from the late 20th century. And this is despite major changes during the years that have left frontman Axl Rose onstage as the only remaining original member.

Amidst wide speculation last September over the long-awaited release of *Chinese Democracy*, an album that languished in production for nearly 10 years at a reported cost of $15 million, Guns N' Roses played five warm-up shows prior to setting forth on a North American tour. Held at the Hard Rock in Las Vegas, the Warfield in San Francisco and at the Hyundai Pavilion in Devore, Calif., these dates led to the tour's official launch in Sunrise, Fla., on October 24.

Winding its way from Florida into Canada, and on through the Midwest to points west before landing at the Gibson Amphitheatre in Universal City, Calif., just before Christmas, the act revealed a bigger and brawnier band than ever in sheer size and sonic horsepower. Weighing in with eight members including Rose, the band showcased a complex fusion of blues, punk, metal and classic rock 'n' roll infused with the talents of Dizzy Reed and Chris Pitman on keyboards; former Nine Inch Nails member Robin Finck, Richard Fortus and Ron "Bumblefoot" Thal on guitars; Tommy Stinson on bass; and Frank Ferrer on drums.

Behind the scenes, Toby Francis was the point man at the front-of-house mix position, riding herd over a Showco Prism rig comprising 80 boxes flown per side and 16 subs, all fueled with Crown power and featuring Clair iO crossover management. To properly manage monitoring tasks onstage within a notoriously hot-seat environment known for ruining many a strong man, monitor world was subdivided into two areas of responsibility: Andy Ebert taking charge of the band's needs and John "Elmo" Sheldon given sole charge of Rose's personal mix.

Francis had more than a passing acquaintance with Guns N' Roses prior to signing on at FOH for the band. His first contact with the group came in 1988 while he was on tour mixing the house P.A. for Aerosmith and Guns N' Roses was occupying a support-act slot.

"*Appetite for Destruction* came out while we were on that tour, and GNR just exploded," Francis recalls. "I got to know the bandmembers, and it was clear they had something that other bands didn't. I would go out and watch their whole show. What I saw and heard then is hard to describe. The music was transcendent; it drew you in, along with the rest of the audience, and took everyone to a different plane. The members may have changed over the years, but that magic is still there."

Today, Francis occupies a spot once artfully directed by the late David Kehrer, who died on Maui in 1997 of complications resulting from hepatitis C. Francis finds it hard to believe that he's now standing in the shoes of an old friend he misses every day, as well as somewhat ironic that he's still working in front of a Prism system every night, a rig he was using nearly 20 years ago with Aerosmith.

"I've used line arrays mostly for the last six years or so, but the Prism system was the only thing readily available in Europe when I first signed on with this show, so I went with it," he says. "As things have turned out, I'm really enjoying it more than I thought I would. This P.A. has a huge sound, and once

Clockwise from top left: Robin Finck, Ron Thal, Frank Ferrer and Tommy Shinson

you have it dialed in, it's really great for rock 'n' roll. The bottom octaves are as solid as you could ever want in any P.A."

While things may not have changed that much this time around for Francis in terms of P.A., his control surface is light years away from what he relied upon back in the day. Like Ebert, to meet his mixing needs for this latest Guns N' Roses foray, he enlisted the aid of a Digidesign VENUE D-Show console. Given his own Pro Tools background, Francis found that he could make a natural transition to the VENUE desk, and is quick to note that engineers working for the various acts opening for GNR had no problem quickly learning what it could do.

"We put new guys on the VENUE all the time that had never even used it, and nine times out of 10, they walked away with a big smile on their face," Francis says. "They couldn't believe how easy it was to adapt and how quickly they could get a good mix. The thing I like most about this particular console is that it sounds phenomenal. It's the most analog-sounding digital board I've ever encountered. If a console sounds good, I can get around any of the other stuff. The Yamaha PM1D is also a good-sounding digital board, but it's harder to operate and there are a lot of things to navigate around. Digidesign's VENUE is straightforward."

Thanks to the desk and the fact that it uses the same type of TDM plug-ins as any Pro Tools HD system, Francis was also able to significantly reduce his outboard gear. "I really like using plug-ins," he adds. "Everything pops up on the screen, and I can reach it all without moving my body. One of my favorite plug-ins for this show was the Bomb Factory BF76, which is a digital emulation of a vintage UREI 1176 peak limiter. The 1176 is a great compressor, but it doesn't take to life on the road well. The Bomb Factory plug-in captures the sounds perfectly, only without all the familiar hums, clicks and buzzes."

Within the austere collection of outboard gear Francis did keep at hand, little more gained rackspace outside of a Lexicon 480 used for drum reverb and a TC Electronic M5000 on Rose during "November Rain."

Francis' basic approach to the house mix was to emulate the energy of the sound fans have come to expect from GNR based on the records, while giving definition and form to new material off of *Chinese Democracy*, which is also featured on the tour.

"When I first heard the songs from the new record, they floored me," Francis admits. "This may indeed be the most-expensive album ever and the longest it's taken to do a record, but those who heard the songs live were stunned. Lyrically, there is a depth that stands up to *Appetite*, and it's very emotional. There is a positive side to this music as well that really surprised me. Most of the songs look forward without making so much as a nod to the past."

DOUBLE MONITOR ENGINEERS, DOUBLE THE BOARDS

Onstage, Rose's predictable unpredictability keeps everyone on their toes. Working a tightrope where anything can happen and probably will, the sound crew went to work each night without the luxury of a set list. While the structure of the show remained in place from town to town, individual songs

From left: front-of-house engineer Toby Francis and monitor engineers John "Elmo" Sheldon and Andy Ebert at one of three VENUE consoles

were called out from stage just prior to their performance using strategically placed talkback mics.

Francis and monitor engineers John Sheldon and Andy Ebert built a largely wireless input and monitoring scheme. Within this world, Rose relies upon a single in-ear monitor and Prism SRM Series enclosures used for frontfill and buttfill, along with a pair of Prism Blues boxes and two subs per side. Elsewhere onstage is full in-ear monitoring, with Ebert dispensing 32 Sennheiser beltpacks out each night to the band, backline techs, pyro technician, lighting guy, various guests and Skid Row's Sebastian Bach, whose band opened the shows.

"Last summer in Europe, I had a Midas Heritage 3000 with a sidecar and I already had 58 inputs," Ebert recalls. "I quickly ramped up to 64 inputs on the fall U.S. leg of the tour; that's the main reason I switched to the VENUE console. This tour lives up to its reputation for being tough, but my band guys are great and easy to get along with. We started rehearsing back in April so I know what's going on. I'm riding vocal mics all the time and making adjustments, and as long as I'm on top of that and not missing any cues, everything is fine."

Dominated by Shure products, the input list onstage featured hardwired SM58s for all vocals except those supplied by Rose, who was on a UHF-R wireless rig using a Beta 58A–equipped transmitter, which he tosses into the crowd each night at the show's end. Shure UHF-R wireless guitar systems were also the choice for Fortus and Thal.

Sheldon switched Rose to the Beta 58A from a standard 58 in part to gain a tighter pickup pattern that would reduce some of the ambient bleed coming from onstage. "Everyone is basically on ears, but it's still a loud rock show," Sheldon says. "The drums are right about at head level, and the stage was enormous with side wings, so I was getting a lot of wash. Every little bit helps at that point, so that extra bit of high end you get from a Beta 58A seemed to help me considerably. The mic has a clean transparent sound, too; Axl's voice isn't colored by it in any way. His voice sounds like it should to me."

With the large amount of wireless mics and wireless in-ear monitor systems, RF activity was formidable for this tour. To help avoid problems, Sheldon kept his wireless systems within the 500MHz range, while Ebert roamed freely within the 600 to 700MHz range.

"We weren't plagued with wireless problems," Sheldon says. "But no matter what you do, you're always going to have a little bump somewhere. With the UHF-R system, however, the automatic frequency scan feature makes it easy enough to redial a mic instantly if you have trouble. The same is true in terms of speed for system setup."

Proving that history doesn't always repeat itself, Sheldon survived his nightly trial-by-fire turns as Rose's monitor engineer by adopting a strategy that comes natural to him. "It's all a matter of attitude," he believes. "You have to stay clam and keep your head in the game. If something goes wrong—and it will—you can't flip out. With Axl, you have to logically sort through everything that's going on, as well as maintain that connection with him. There can't be any moments when I lock up or waver. I have a plan and backups of backups for every situation that may arise. That's how I maintain my calmness, that's how I'm able to hang in there." ■

Gregory A. DeTogne is a freelance writer who lives and works at the Electric Gnat Ranch, his rural refuge north of Chicago in Libertyville, Ill.

LIVE

It's showtime.

Waves Live Bundle

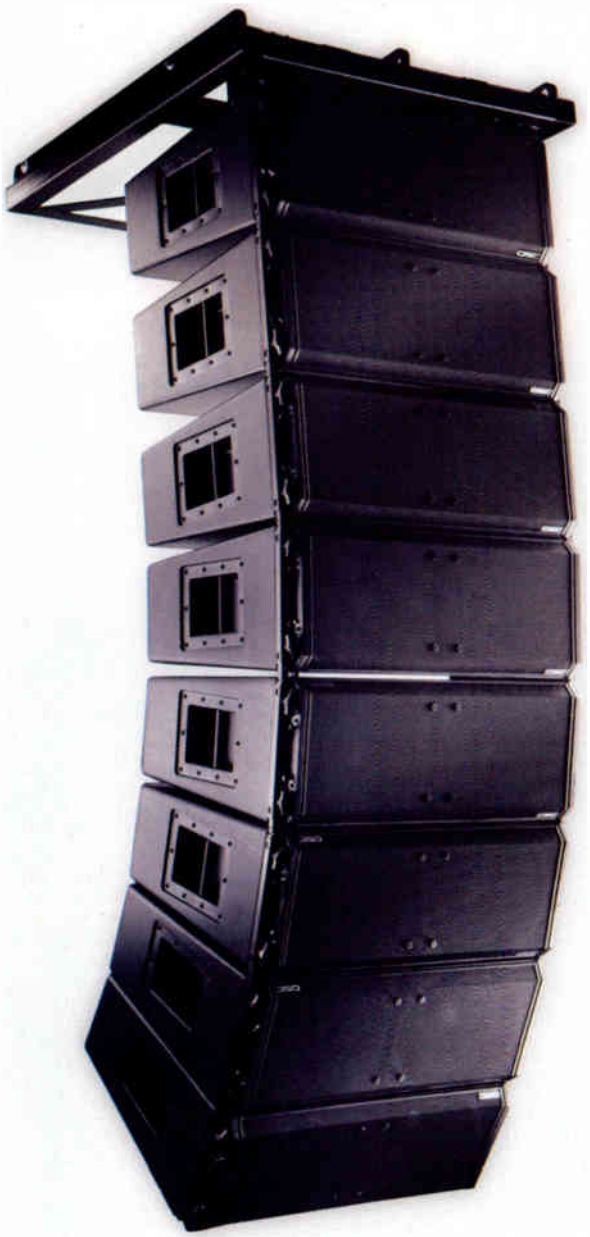
27 processors custom-engineered
and optimized for Digidesign
Venue Series **D-Show Consoles.**
Finally, studio quality sound – live.

WAVES

www.waves.com

WideLine Series Gets Wider

The New Wood WideLine



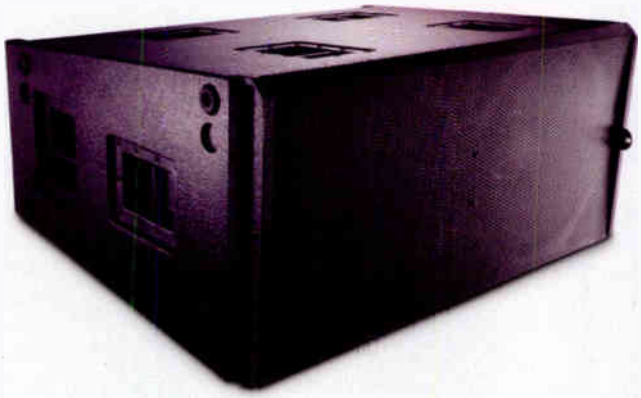
QSC's WideLine has obliterated the distinction between compact, unobtrusive line arrays for corporate gigs and high output rigs for arena rock. In today's market environment you've got to go from business casual to tour t-shirt without missing a beat. QSC's WideLine has the flexibility, diminutive footprint and professional appearance the corporate world requires. And if you need to dust off the formal wear, it's got the fidelity and finesse for a night at the opera. But behind that unassuming facade is an arena rocking machine just waiting to show you what it can do.

Housed in its original, weather resistant, Composolite enclosure WideLine set the standard for compact line-array performance and value. Now, you can get the same performance at an even more attractive price with the WL2102-w (as in wood) version. Either way you get more than just a great line array system – you get a complete QSC solution.

So contact QSC and let us demonstrate how WideLine will raise your bottom line.

...and Deeper

The New WideLine Subwoofer



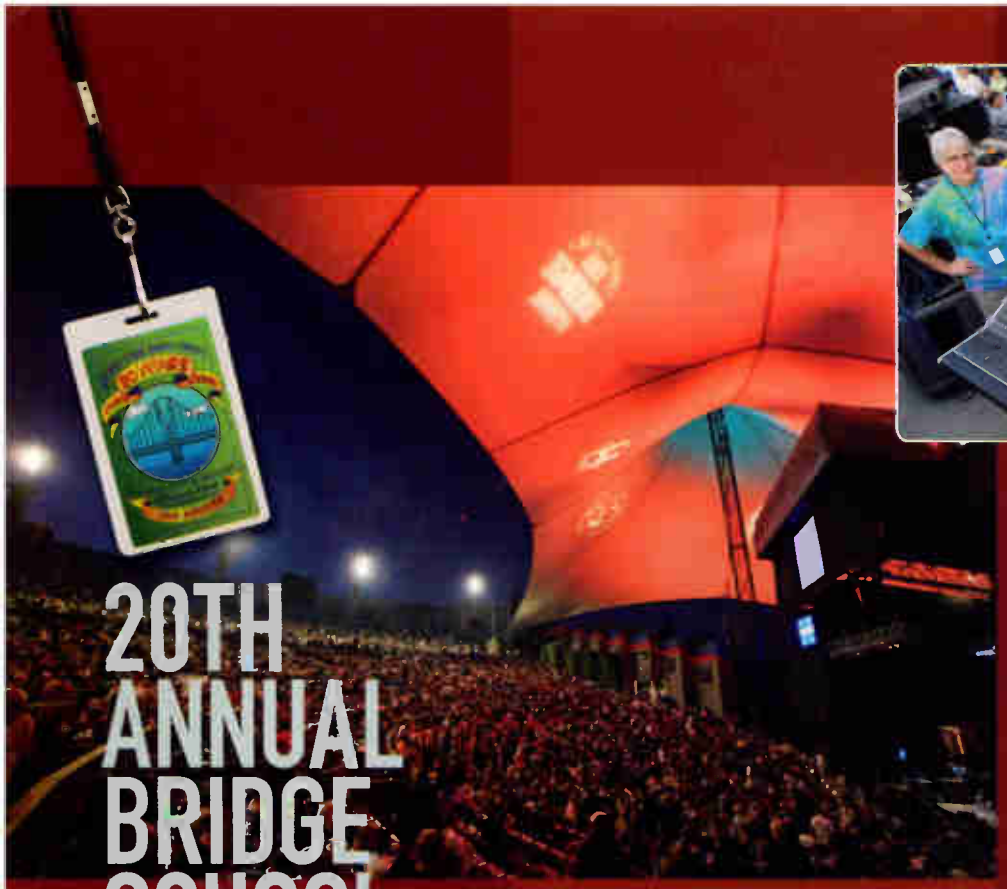
QSC's WideLine is an extraordinary line array system that deserves an equally extraordinary companion subwoofer. So we listened — to user needs and the best the industry has to offer. And the WL218-w is the result. Equally at home on the ground or in the air, this sub produces chest pounding punch and then just keeps going down to grab you with plenty of big, warm low-frequency extension.

There are plenty of good subwoofers available. But building a subwoofer this musical and powerful requires experience and attention to detail. On the road experience to know what live sound engineers want and engineering experience to know how to achieve it. Add the attention to detail that puts handles everywhere they need to be and includes a dolly board that attaches or detaches with impressive ease.

Let QSC show you how a WideLine system with the new WL218-w can give you bottom end you crave and the bottom line you need.

For more information,
call 1-800-854-4079
or click online at
qscaudio.com

Hear the Power of Technology



20TH ANNUAL BRIDGE SCHOOL BENEFIT CONCERT

For the past 20 years, Neil and Pegi Young have brought together an eclectic lineup of top-notch musicians to perform in front of an enthusiastic crowd at the annual Bridge School Benefit concert at the Shoreline Amphitheater (Mountain View, Calif.) in late October. Proceeds of the annual event go to the Bridge School, an education program dedicated to ensuring that children with severe speech and physical impairments achieve full participation in their communities.

At front of house, from left: Gregg "Fish" Salmon (of Sound Image and monitor engineer for Neil Young and Brian Wilson; works on a Yamaha PM1D), Bryan Worthen (FOH engineer for Foo Fighters and Trent Reznor; works on a DiGiCo D5), Greg Nelson (FOH engineer for Pearl Jam; works on a Digidesign VENUE), Gary Hartung (Sound Image), Rob Mailman (system coordinator for Sound Image and FOH engineer for Brian Wilson; works on a Midas XL4) and Tommy Sterling (Sound Image). Not pictured: Tim Mulligan (FOH for Neil Young, works on a Heritage 3000); Jeff Thomas (FOH for Dave Matthews, works on Digidesign VENUE); and Will Markwell (FOH for Death Cab for Cutie, works on a DiGiCo D5).

Acting as system coordinator for the entire gig is Sound Image's 21-year-vet Rob Mailman (also front-of-house engineer for Brian Wilson). The sound company–provided P.A. comprises 48 JBL 4889 VerTec enclosures, 24 JBL 4880 subwoofer enclosures and six Sound Image CF front-fill speaker enclosures. The system is powered by Crown IT-8000 amps using the HiQnet System Architect Configuration Control, assisted by dbx 4800 for EQ. This configuration augmented Shoreline's installed P.A., which includes JBL VerTec 4888 enclosures powered by Crown IT 8000s and processed by BSS SoundWeb.

"The team of guys, which were assembled at the last minute," he continues, "were all picked for their experience and expertise in certain areas. The most important thing about a show like this is to have a really organized team to patch the stage while your monitor and FOH techs deal with the needs of the guest engineers. All of these guys have good, easygoing personalities, which is essential on a show like this because you have bands and guest engineers walking up and changing or adding inputs at the last minute.

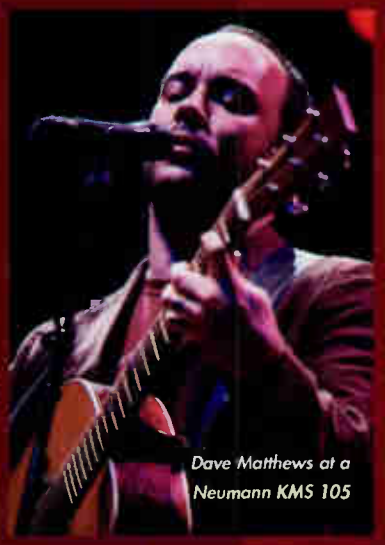
"The real success of this show is attributed to the Sound Image crew. I can't say enough about those guys. The band engineers for all of these acts are top-notch. This kind of an event can go south for a number of reasons really fast. I was really pleased with the outcome, and was proud to have been a part of the 20th anniversary."

According to Mailman, "Each side of the P.A. had a 15-deep hang in front with an eight-deep hang of subs next to that, followed by an offstage hang of nine deep. On the deck, we had four subs per side and a total of six front-fill enclosures."

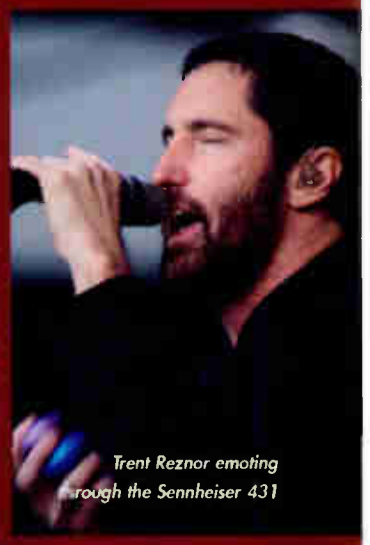
Photos & Text by Steve Jennings

Brian Wilson sings through Shure SM58.

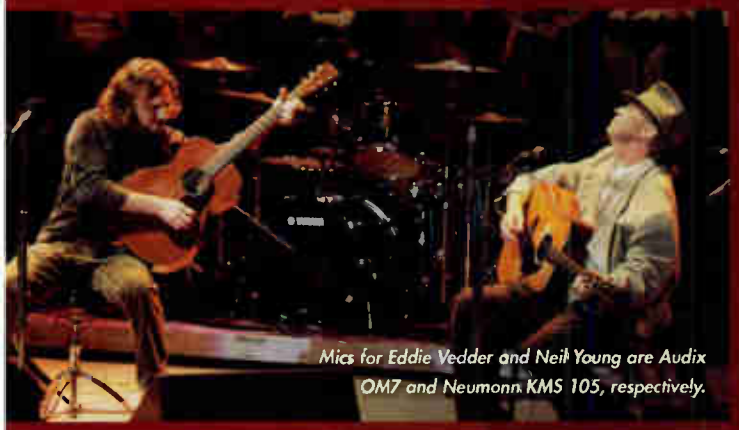
Gillian Welch is heard through a Shure SM58.



Dave Matthews at a Neumann KMS 105

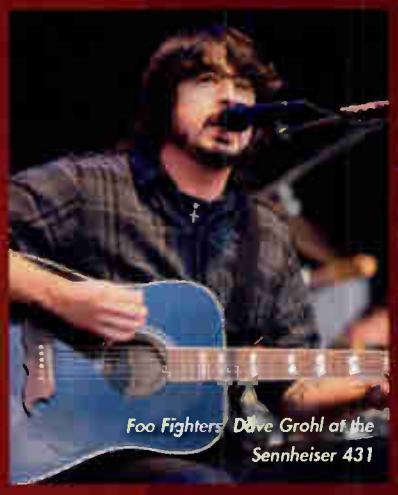


Trent Reznor emoting through the Sennheiser 431



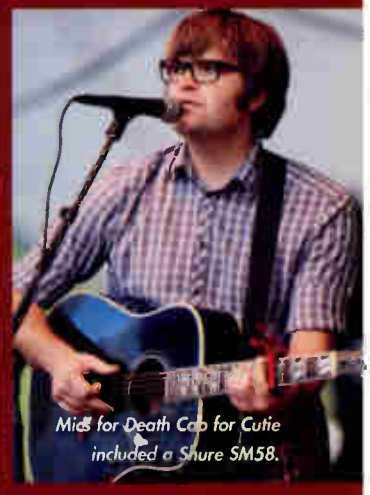
Mics for Eddie Vedder and Neil Young are Audix OM7 and Neumann KMS 105, respectively.

Gillian Welch shows off her second outfit to Neil Young.



Foo Fighters' Dave Grohl at the Sennheiser 431

Pegi and Neil Young thank the crowd for their support.



Mics for Death Cab for Cutie included a Shure SM58.

At monitor land, from left: Sound Image's Jon Schimke, Brian Montgomery, Chris Lantz, Fumi Hikookazaki, Gary Hartung, Micah Goldfarb, Gregg "Fish" Salmon and Tommy Sterling. Not pictured: Karrie Keyes (monitors for Pearl Jam, works on a Midas Heritage 3000); Ian Kuhn (monitors for Dave Matthews, works on a Yamaha PM1D); Ian Beveridge (monitors for Foo Fighters and Trent Reznor, works on a Yamaha PM5D); and Adam Wakeling (monitors for Death Cab for Cutie, works on a Yamaha PM5D).

PHOTOS: STEVE JENNINGS

The Dixie Chicks

By David John Farinella

Onboard Effects Create Smooth Vocals

Fern Alvarez, who has been handling the Dixie Chicks' front-of-house mixing responsibilities for just about a decade, has seen numerous changes while touring with this three-piece. Most notably, each tour has grown in size—from band and crew traveling across the U.S. in a single bus to this year's world tour, which has been playing to packed arenas in support of the Chicks' latest album, *Taking the Long Way*.

But not much seems to rattle Alvarez, who is now busy mixing a 12-piece band that, in addition to the Chicks (Natalie Maines, Martie Maguire and Emily Robison), includes three guitar players (David Grissom, Audley Freed and Keith Sewell), drummer Fred Eltringham, bassist Byron House, keyboardist Larry Knechtel, steel guitarist Pete Finney, cellist John Krovosa and violinist Janna Jacoby. For instance, the tour is carrying all of the gear (sans P.A.), creating a level of comfort and recallability for the FOH engineer and two monitor engineers, Marty Strayer and Scott Reikowsky. This truckload of gear includes all of the musicians' amps and instruments, a trio of Digidesign VENUE consoles (one at FOH and a pair used for monitors), four sidecars and all of the personal monitoring equipment; Alvarez first used the VENUE on a brief run with Lisa Marie Presley in 2005. In addition to the board, The tour has also incorporated two Pro Tools HD rigs—one at FOH and one at monitor position—each capable of recording and playing back for a multitrack archive of each show.

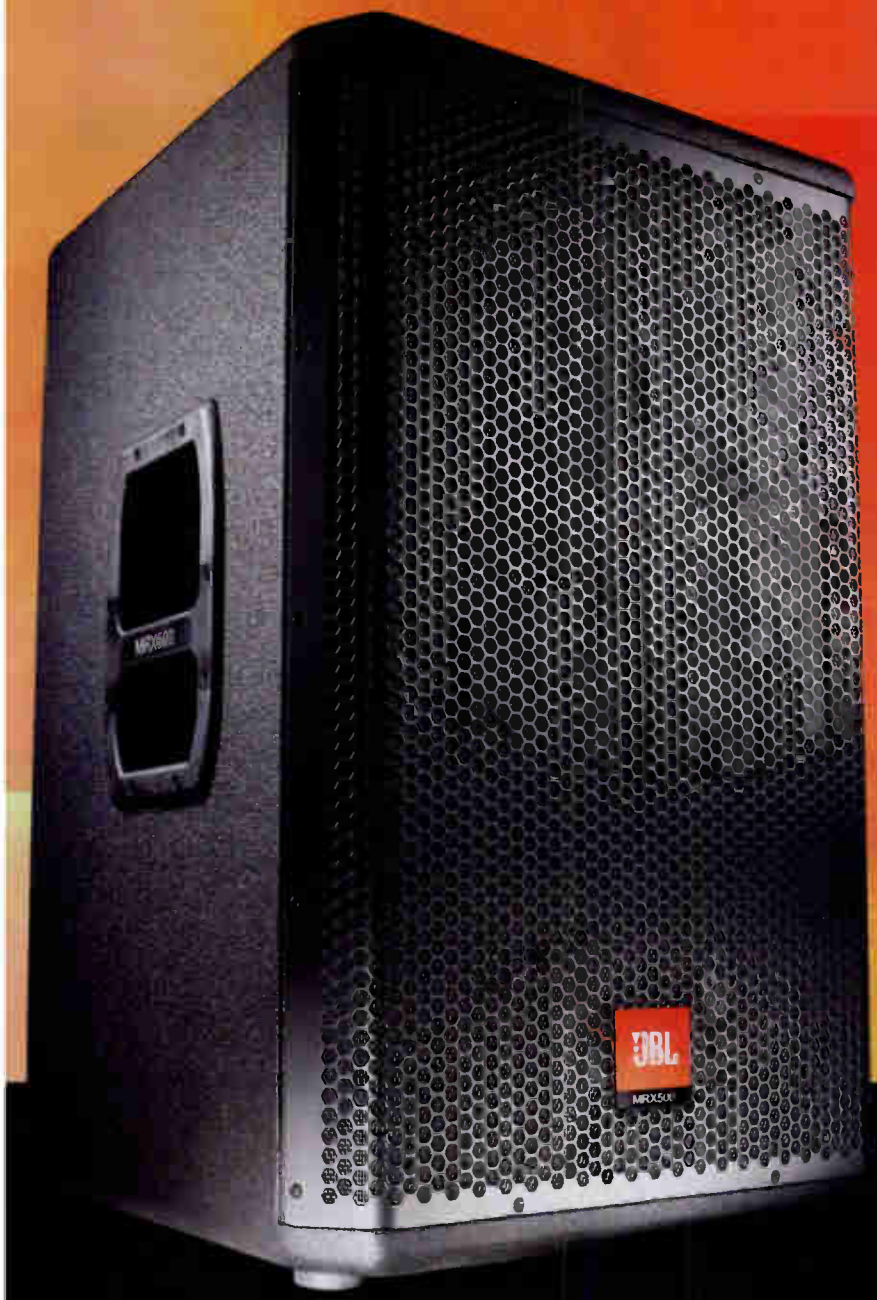
Front-of-house engineer Fern Alvarez uses a Digidesign VENUE console.

"When we travel, we don't travel lightly," Alvarez says with a laugh. "It can be easy to run these consoles with a thumb drive, but we have these rigs set up and routed a special way, and we didn't want to have to reconfigure someone else's rig for our comfort. The girls approved it because they want it to be as normal as possible, and when we go overseas, there's almost no rehearsal time, so there's no time for prepping."

In November, the tour stopped at the newly named Oracle Arena in Oakland, Calif., where the band played a rollicking 22-song, 90-plus-minute set that included a variety of their hit songs, including "Goodbye Earl," "Landslide" and "White Trash."

Alvarez is using the Clair Bros. i4b line array system—24 cabinets off left and right with another 16 for side hangs and eight S4 subs—that's powered by Crown amps and driven by the Clair iO system with a wireless tablet. "I don't run a lot of dB, just enough to get the information out," Alvarez explains. "It's more of an acoustic show with

Lighter. Louder. Legendary.



MRX500
S E R I E S

The legendary sound of JBL heard on tour with the world's greatest performers is now available in an ultra lightweight, high-powered, portable loudspeaker. Introducing the MRX500: a new series of extremely lightweight, powerful loudspeakers designed for the working musician and DJ. Featuring the same high-performance Differential Drive® technology used in the industry leading VERTEC® tour systems, the MRX delivers outstanding performance where smaller, lighter, more portable systems are required. As much as 30% lighter than similar systems, the MRX series is easy to transport and easy to store. From room to room or city to city, the MRX500 gives DJs, musicians and performance venues the power to move.

Visit jblpro.com to learn more or experience the sound at your local music retailer.

JBL PROFESSIONAL

H A Harman International Company

the instruments that the girls play: banjo, acoustic guitar, violin, mandolin, fiddle, dobro. Those types of instruments don't translate well at a high level of dB."

The audience members in the front five rows hear the show through 12 Showco L3 cabinets that Alvarez runs off an attenuated left-right matrix. The use of those cabinets negates the need for a central cluster. "The video screen is a priority," he says with a laugh. "I've never done a center cluster because I haven't really needed one. Natalie gives enough information off her own vocal that you really don't need it. Vocally, this is the easiest gig to mix because they do such a great job."

Everyone onstage sings into Shure SM58 microphones with Shure UHF-R systems. Rather than stacking up a pile of outboard gear at the FOH position, Alvarez uses the VENUE's onboard gates and compressors, as well as a handful of plug-ins. For instance, Maguire and Robison's vocal tracks are spun through a Bomb Factory BF-2A plug-in, and Maines' vocal is treated with the McDSP MC2000, Digidesign Smack! and Focusrite d2 EQ plug-ins.

Alvarez also uses plug-ins on some of the band tracks: Line 6 Amp Farm on the bass player's tracks, a Bomb Factory Slight Rude compressor on the Leslie cabinet and a Purple Audio MC77 limiting amp on the fiddles. There are also a handful of effects, including Digidesign Re-Vibe and D-Verb, Line 6 Echo Farm and the Eventide H949 Harmonizer. "I have about 25 plug-ins across the console, but I'm up to 78 inputs," Alvarez says. "I try not to overcompress and overdo things to these inputs. I try to keep it as simple as possible. I use the Purples on the fiddle to warm them up a little. On Natalie's vocal, I use the McDSP with some Smack to smooth it out a little, and on [Maguire and Robison], I use the BF-2As to warm up their vocals."

At monitor land, from left: crew chief/system engineer Brad Ervin, monitor engineers Marty Strayer and Scott Reikowsky, system tech Christy Spradley and RF/system tech Kevin "Kap" Kapler

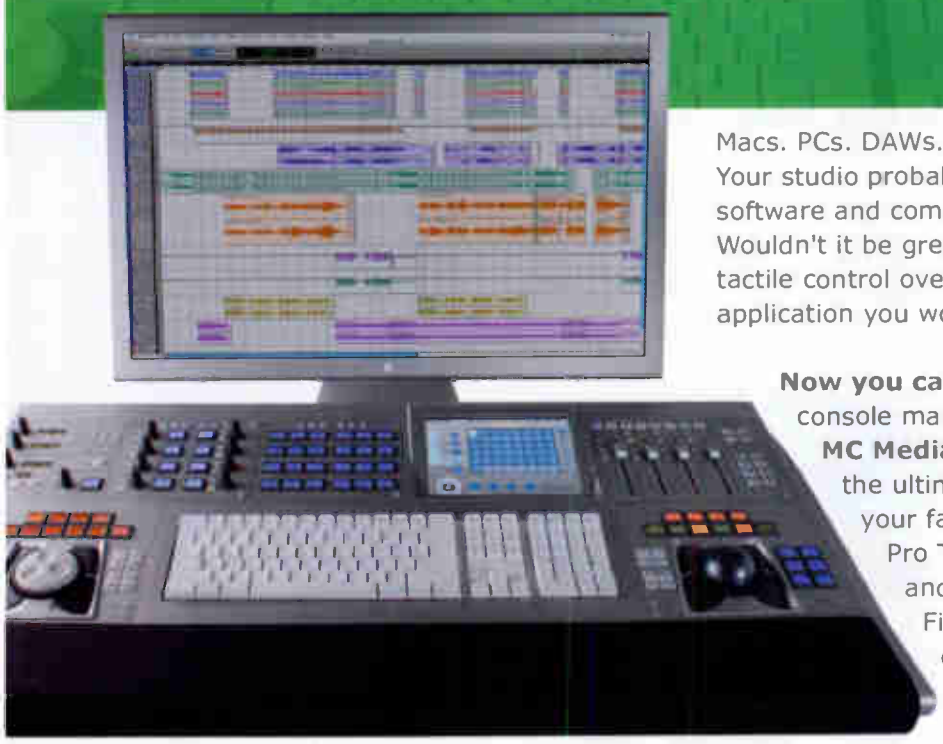
Likewise, miking the band is straightahead. All of the guitar cabinets (mostly Black Cat amps) have been isolated and miked with Shure KSM32s. The Leslie cabinet has two Shure Beta 91s on top and a Beta 91 on the bottom. On the drum kit, Alvarez places a Shure KSM137 pencil mic on the ride, hi-hat cymbals and the bottom of the snare drum.

Making sure that 96 channels of RF can be found and used at each venue is one of the challenges that the crew faces each day. However, Alvarez has gotten consistent results with a Lectrosonics Venue Modular system with IM and SM transmitters and no companders—creating a considerably more natural sound.

DUELING MONITOR BOARDS

While Alvarez handles the front-of-house mix, monitor engineers Strayer (who is

Everything. Under control.



Macs. PCs. DAWs. Soft synths. Samplers. And more. Your studio probably contains a wider variety of software and computer platforms than ever before. Wouldn't it be great to have perfectly integrated tactile control over every computer and software application you work with?

Now you can. Euphonix, the world-renowned console manufacturer, has delivered the **MC Media Application Controller.** It's the ultimate worksurface for controlling your favorite software apps, from Pro Tools® and Logic® to Nuendo® and more. Hell, use it with Final Cut Pro® or Photoshop®, or your web browser if you want. Because if there's one thing we all need, it's a little more control.

The Euphonix MC includes a full sized keyboard with trackball and jog wheel, plus 56 LCD SmartSwitches, 4 faders, 9 rotary controls, and a monitoring section. ***Works with ANY software application on Mac or PC.***

Euphonix MC

Get In Control With GC Pro!

In a world where music and audio gear is more and more sophisticated, GC Pro is here to offer personalized expert consulting on putting together the best combination of equipment for your specific requirements. You also take advantage of the excellent pricing you'd expect from the world's largest pro audio dealer.

From mics to monitors... front end processors to dedicated audio computers... vintage instruments to the most cutting-edge software tools... we are your one-stop solution. Contact your local GC Pro Account Manager today!

GC Pro has expert Account Managers in nearly every territory of the USA... contact us today!

800-935-MYGC
www.gcpro.com

Music • Post • Live Sound • Lighting

GCPRO
www.gcpro.com

Panic! at the Disco

By Gaby Alter

Engineer and Band Rise Up Through the Ranks

Front-of-house engineer John Harris (front) and monitor engineer Larry Mignogna

PHOTOS: PAUL SAURANO

An elaborate circus set filled the stage at Madison Square Garden Theater for Panic! at the Disco's pair of concerts in mid-November, complete with a lion cage and a large painted backdrop of Victorian-era spectators. The band, fresh off the first dates of its Nothing Rhymes With Circus tour, blasted the crowd with its brand of dark, high-energy punk/pop.

With the meteoric pace of their success from their debut album, *A Fever You Can't Sweat Out*, Panic! has had to quickly acclimate to bigger venues, as has front-of-house engineer John Harris. Originally from Florida's local punk scene, Harris has worked on some larger tours, but this is his biggest yet. "There's more math involved, and there's a lot more to learn, which is so much fun," he says.

To enhance the music's raw, live energy, Harris mixes on an analog Midas Heritage 3000 console. "A lot of people go for the digital compressed mix," he says. "It sounds like the record. I don't want to pay $20 to go to a performance and feel like I'm hearing the band on a CD or my iTunes. I want the kick to punch me in the stomach."

To create this in-your-face sound, Harris uses top-notch mics. "What you want—this is from working in a recording studio—is you want to keep everything as flat as possible as always. If there's a problem, you fix it at the mic [or] at the instrument." The tour has an endorsement deal with Audio-Technica microphones, whose sound Harris loves. "It just sounds really true," he says.

Harris has both guitars double-miked: lead guitarist Ryan Ross' with a Shure KSM32 and an Audio-Technica AT4050, and Urie's with an Audio-Technica dual-element AE2500. John Walker's bass gets an AE2500 and a Countryman DI. Drummer Spencer Smith's snare is miked top and bottom with ATM650s, while the ride gets a side-address ATM450. The floor and rack tom receive AE3000s; AE5100s are used underneath the crash cymbals. The kick is double-miked with a Shure Beta 91 and Beta 92.

A keyboardist and cellist augment Panic!'s sound on the tour. (Both are elevated above the band on the circus set.) The cello is electric and uses a DI. Harris takes two DIs out of a laptop running Reason for the keyboardist, using plenty of compression to squash the wilder frequencies of some of Reason's electronic sounds. Adding to the creepy carnival atmosphere, the keyboardist plays a Glockenspiel, which Harris mikes with a stereo pair of ATM450s.

There's also a DI'd electric banjo and a second keyboard that Urie uses while playing a Queen song. The band gutted an old piano, replacing its innards with a Yamaha P Series weighted keyboard. For a drum-cadence sequence, in which the band and some of the dancers line up and play marching basses, snare drums and trash cans, Harris had marching drums specially outfitted with Beta 98s on the snares and Beta 91s mounted inside the two bass drums.

For the vocals, an AE5400 serves as the stage-right microphone, and Urie sings into an AEW-5255 wireless. Harris uses an Avalon 737 compressor on the vocals—"the EQ on it is great," he notes—and minimal effects: voice doubler on a Yamaha SPX990 and a TC Electronic 2290 digital delay. "I use effects just to warm things up and get [Urie] over everything else," Harris explains. "I'm not trying to hide some screamer behind the guitar." On the rest of the mix, he uses Drawmer gates, BSS DPP-102 compressors and a dbx 160XT comp.

For the first time, Harris is working with a Clair Bros. i4 line array system, which is maintained by system engineer/crew chief Andrew Berlin and sound techs Don Baker and Mike Gamble. The system uses QSC, Crown and Carver amplification, and Lake iO processing. The main hang speakers are 26 boxes per side, with 10 boxes of side hangs on each side for arenas, and six Prism sub-basses on the floor.

Presiding over the monitors is Larry "Filet" Mignogna, a veteran of Alicia Keys' and Paul Simon's tours, who is manning a DiGiCo D5, the model he used on Keys' 12-person band. "It does sound great; a lot more warmth to it," he says of the board.

Mignogna has the band on Ultimate Ears UE7 IEMs with Sennheiser G2 beltpacks. He also uses 12 AM Clair wedges for Ross, and Clair R4s and ML18 subs as sidefills, "mostly for low end and for the dancers," he adds.

From New York, the tour moves on to dates at pavilions and arenas on the West Coast and Mexico. For Harris, figuring out how to negotiate the tour's larger venues is exactly what he loves to do. "Whether being in small clubs or bigger theaters or arenas, I learn something new all the time," he says. "I feel like if you stop learning, something's wrong." ■

Gaby Alter is a New York City–based writer.

DON'T TAKE OUR WORD FOR IT...

Here is what the PRO'S are saying about the latest microphone from MXL:

The **MXL V69M Mogami Edition** large diaphragm, Tube microphone, has a classic sound that will enhance vocal and instrument performances in any recording environment. The extremely low noise FET output circuitry, wide dynamic range and warm, airy, tube sound makes the V69M a perfect complement to all analog and digital recording devices. The MXL V69M comes housed in a deluxe flight case with a pop filter, shock mount, and dedicated power supply.The V69M is internally wired with Mogami cable and is supplied with Mogami Tube and low-noise studio microphone cables. All at a price that's unbelievable! Audition one today at your local music or pro-audio retailer. You will not believe your ears.

"It was detailed throughout the frequency spectrum, and from a near-whisper to a wail, the V69 caught every nuance. The Marshall MXL V69 Mogami edition is an excellent microphone, and when you factor in the low, low price, the price performance becomes downright amazing."

Scott Burgess Pro Audio Review

"So, we tested the V69 against - count 'em - 11 other popular condensers, ranging in price from $169 to $5,000 list... both the engineer/producer and the singer picked the V69 over the other 11 mics. None of them had the same combination of classic tube warmth and top-end air of the V69."

Fett, Songwriter Magazine

"If you're looking for a mic that performs like it costs a bunch more, give the V69 a very close look. You'll be thrilled at how little money you have to shell out, and you'll be even happier at how well it does it's job."

Mitch Gallagher, Editor Eq Magazine

"Soundwise, I was very impressed that the V69 could hold its own against an industry standard like the U47. It struck me as very versatile and of higher quality than other budget tube condensers."

Pete Weiss Tape Op Magazine

MXL

Tel.: (310) 333-0606
Toll Free: (800) 800-6608
www.MXLMics.com

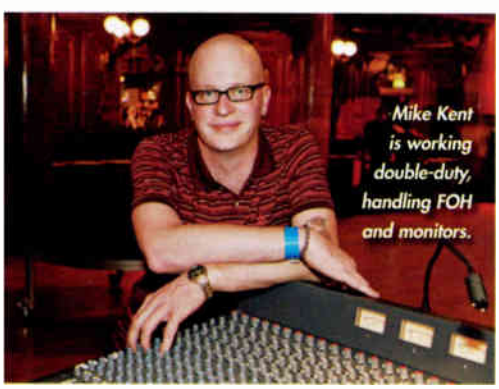
OK Go

By Heather Johnson

Short Club Tour for Multitasking Engineer

You may not know OK Go by name, but you've probably seen their notoriously popular video for "Here It Goes Again," in which the four bandmembers (Damian Kulash, vocals/guitar; Andy Ross, guitar/keyboards, Tim Norwind, bass; and Dan Konopka, drums) choreograph their hit song while walking/dancing on treadmills. The video numbered 10 million-plus hits on YouTube, as well as massive airplay on MTV, VH1 and FUSE. This insanely popular video helped attract a full house at San Francisco's Great American Music Hall in early November at the beginning of the band's fall/winter tour, which precedes their opening slot for Death Cab for Cutie in early 2007.

While this initial success is easily selling tickets, front-of-house engineer Mike Kent is finding the tour a bit more difficult: In addition to relying on house-provided gear, Kent is also acting as monitor engineer. According to the engineer, who joined the band in February 2005 after stints with Everclear, The Jayhawks and Old 97's, "Unfortunately, a lot of bands at this level can't afford to take multiple guys. I carried racks for a while, but then I realized that almost every night I was seeing something in the venues that I could use so I stopped lugging them around."



Mike Kent is working double-duty, handling FOH and monitors.

However, Kent says that this band is very easy to work with, monitor-wise, as each member wants only the basics in their mix. "Damian just wants his vocals and nothing else in his monitor; he can pick up everything else onstage," Kent says of Kulash's mix, which is heard through the venue's McCauley SM95-2 wedges. Norwind, who just wants to hear his vocals, gets the same treatment. Ross and Konopka's mixes are sent through Sennheiser Evolution 300 IEM in-ear monitor systems. "Andy just wants keyboard, his vocals and a little of Tim's vocals," Kent explains. "Dan just wants a little bit of kick, bass and a little bit of Damian's guitar. Then you learn how to instruct the house monitor guy."

In most cases, Kent runs the four monitor mixes from FOH, which streamlines his job and cuts down on costs for the band.

Aside from eight channels reserved for monitors and two for an iPod (used for a dance routine at the end of the show), the band occupies 19 inputs of the venue's 40-input Soundcraft K2 console. Bass and keyboards run direct, a Sennheiser 915 mikes the snare, and 604s and 914s capture the toms and overheads, respectively. Kent mikes the guitars with e 609 Silvers, and puts an e 902 on an Ampeg 115 bass amp, which Kent uses on Kulash's guitar as a "boost amp" for "a nice, rich, low-end sound," he says. "We can roll all of the high out of it, so when he kicks it on, it sounds great." All vocals are miked with Sennheiser e 945s, and during the band's two mid-set acoustic numbers—which they perform on a round riser that's rolled out into the middle of the crowd—Kent uses the Evolution wireless 550 with a 945 capsule.

Save for a dbx 166 compressor on the lead vocals, Kent uses very little EQ or processing. Computer-savvy keyboardist Ross manages the samples and presets via Native Instruments Kontakt, which runs on a Mac Mini through an M-Audio Axiom USB MIDI controller.

For the San Francisco date, the band had the advantage of playing through the venue's L-Acoustics KUDO loudspeaker system, which comprises twin arrays, each containing five KUDO boxes per side perched high above two stacks of three SB-118 single 18-inch subs. L-Acoustics' 115XT HiQ side-balcony fills and a flown pair of 115XT rear-balcony fills round out the package. Powering the KUDO system and subs are L-Acoustics' LA 48 Class-TD amplifiers (with Lab Gruppen fP 6400 power amps), while LA 17 Class-A/B amplifiers (with Lab Gruppen fP 2600s) power the fill speakers. "We were hitting it pretty hard, but it still had a great response and seemed to really help with the high-end reflections," says Kent.

Sonically, the band delivers a tight, spirited set of songs with plenty of onstage banter and jokes in between. Building on the sonic audio wall is an intricate video display combining graphics and animated images (including a spinning treadmill) with jittery, ultraclose-up shots of the band courtesy of tiny video cameras stuck to the bandmembers' Sennheiser microphones. This, of course, means Kent has a third role on tour: video director. Let's just hope that when the job of "exercise equipment manager" becomes part of the tour support team, they'll get this guy some help! ■

Heather Johnson is a Mix *contributing editor.*

The world's most affordable automated disc publishing system... now on tour.

Bravo^{se}™
Disc Publisher

*Just $1495**

Introducing the **New Bravo™ SE Disc Publisher** from Primera. Designed specifically for the needs of audio and music professionals, whether in the studio or on the road.

Call 1-800-797-2772 (USA or Canada) or 763-475-6676 for a FREE sample disc.
Visit us on the internet at **www.primera16.com** or email to **sales@primera.com.**

Bravo is a trademark and Primera is a registered trademark of Primera Technology, Inc.
*Manufacturer's Suggested List Price in the USA. Reseller price may vary.

PRIMERA TECHNOLOGY, INC.

Alice in Chains

Straight-Ahead Guitar Rock Hits Small Theaters

By Sarah Benzuly

Front-of-house engineer/production manager Chad Olech and monitor engineer Maxie Williams couldn't ask for a better gig. Alice in Chains are relatively easy to mix: one guitarist (who also sings, Jerry Cantrell), one bassist (Mike Inez), a drummer (Sean Kinney) and new vocalist (who will often sling his own axe, William Duvall)—all done in a straight-up, hard-rockin' fashion. What's more, both engineers are mixing on Yamaha PM5D digital boards, allowing them to rely on onboard effects rather than hauling racks of outboard gear, so it's no wonder that they were all smiles when *Mix* met with them at San Francisco's Warfield Theater

In the beginning, it wasn't all roses and sunshine. With the passing of longtime band vocalist Layne Staley, Alice in Chains brought in Duvall, who not only had to fill some very big shoes, but also had to win over the crowd—which he's been doing in stride. On the audio end, both engineers came onboard at almost the last minute: Olech (who did a short run for Linkin Park in Japan) arrived just days before a two-week stint of rehearsals.

Chad Olech at the Warfield's FOH position

Williams followed him shortly, when he left the current Guns 'N Roses tour (see page 54). Prior to that, Williams was a senior production manager at the new Hard Rock Café in Biloxi, Miss. "It was good until Katrina hit—I lost my job and my house in the same day," Williams says.

The team chemistry had to be just right, as the band recently switched to in-ears. "At first," Williams says, "they went through three monitor guys when they were coming off of the wedges. The wedges are off—but they're still onstage as the band wants to see them—and the sidefills [two Clair Bros. R4s and two Clair ML18s] are practically non-existent; it's just kick and snare." There are also two ML18s for drum subs and four Clair 12AMs as emergency backups: two for Williams and two for the band in case the ears go.

All the bandmembers are on Ultimate Ears UE7s. "I changed Jerry to the Ambient 5s because he's a bit claustrophobic and was having just a little 'hole closing down,'" Williams says. "He didn't like it and went back to the UE7s, which is fine because his guitar sounds a bit fatter in his ears"

As for mixes, Williams gives everybody a left and right stereo, "and then I have a spare guest mix, and it's also a backup if I have any frequency problems," Williams adds. "Jerry is straight up the middle with his mix and then he has William's guitar out to his right ear. Same way with Mike: He's got Jerry off to his left ear and William off to his right ear. A little bit of panning on the toms, but nothing silly or complicated. Run audience mics to the guys in-between songs when they talk; Jerry pretty much stays on that."

The only outboard gear Williams is running for in-ears are Sennheiser G2s and a "high-powered, 50-watt Clair amplifier with a Helicon collapsible antenna," Williams adds. Olech also carries little in the way of outboard: an Alan Smart C2 compressor on the stereo mix. Why no racks? "It's not needed," Olech answers. "This is a straight-ahead rock band. If you listen to their records, there is literally only two effects cues that are crucial. I have two reverbs, two delays and one distortion effect. Put the vocals a little on top and guitars a little up because everyone wants to hear Jerry. I mix the guitars a hair louder than I normally would, but that's about it."

Perhaps as heavily spotlighted as Cantrell's playing and singing is Duvall, who must remain a powerful force during a grueling two-hour show, which includes an acoustic set. "He's been doing really well," Olech says of Duvall. "He's easy to work with in the sense that he's consistent: When he's playing guitar, he sings a lot quieter and when he's not playing guitar, he sings a lot louder. As for all the fan reaction, they're saying he's a great choice."

RACKS AND STACKS

This tour is a Showco/Clair Bros. account for monitors and board groups, but Olech must contend with local racks and stacks. "I prefer Prism," Olech says, "but you're not going to get that on a local racks and stacks tour, so we usually go with V-DOSC or VerTec." Because he's coming into a new venue and a new P.A. at every gig, Olech tunes the system with Clair iOs. "More of it is by ear," Olech says. I'll throw on an iPod and give it a listen, and get it to where I like it. This is my sixth or seventh time at the Warfield and I've never had any significant issues here."

Augmenting the Clair Bros. gear list is a separate rack that Olech uses to record each show to Nuendo for archival purposes.

www.yamahaca.com

Taking it back.

To the classics, that is. With the DM2000VCM (Virtual Circuitry Modeling) timeless effects are brought back for even more production power. Amazing recreations of compression and EQ units from the 70's, simulations of legendary analog open-reel tape decks, REV-X reverb effects, and a wide variety of vintage stomp boxes provide a sonic blast from the past. Combined with the already well-established sound and reliability of the DM2000, VCM allows you to experience the warm sounds of analog in a digital console.

Yamaha's DM2000VCM. Retro Remixed.

DM2000

When you need help, time zones shouldn't matter. Yamaha provides coast to coast 24/7 technical support. With dedicated staff and regional service centers, assistance is around the corner. If we can't fix it over the phone, we'll put a part or a person on the next plane out. It's that simple.

YAMAHA
commercial audio

Yamaha Commercial Audio Systems, Inc. P.O. Box 6600, Buena Park, CA 90620-6600 ©2007 Yamaha Commercial Audio Systems, Inc.

"From the Yamaha we go ADAT Lightpipe to Nuendo, which accepts the Lightpipe in without extra converters or steps. I have to re-label all the files so that Toby Wright, who is doing the archiving, will be able to have Pro Tools see [the AIFF files] and understand them. Each show has 26 tracks, but it's actually more than that because we do an acoustic set in the middle. Basically, I'm recording two shows a night.

"The original thought was to do a 'next-day on the Internet sale' thing," he continues. "The band knows what they want and I can't do a proper job just taking an hour or two to remix it. You need to edit it; it needs to be done professionally. This can be done, but it all takes time. I'm wearing a couple of different hats on this tour and I would need six or eight hours to get a product that the band would be happy with."

Also adding an extra "hat" to his mixing duties is Williams, who is doing his own tech'ing—the first time in six or eight years. "I'm not complaining," Williams says with a smile. "I'm rockin' and rollin'. It's streamlined now and I don't think anything about it."

All Miked Up

[Eds. note: Alice in Chains and Maxie Williams are Shure endorsers.]

Drums
Kick: SM91 and Beta 52
Snare: Beta 57A (top), KSM27 (bottom)
Hi-Hat: KSM137
Toms: SM98s
Overheads: KSM32s
Ride: 137
Cantrell Vocal: Beta 58
Duvall Vocal: KSM9 wireless
Bass: KSM27
Duvall Guitar: KSM32
Cantrell Guitar: two KSM32s, Beta 57
Spare Vocal: KSM9
Acoustic DIs: Countryman

BRING YOUR FRIENDS

Alice in Chains likes to invite their musician friends onstage to do a couple of tunes if they happen to be playing in the same city. The Denver show saw Primus; other guests include Corey Taylor from Stone Sour, Doug Pinnick from King's X, Dave Navarro, Jane's Addiction drummer Stephen Perkins, Staind's Aaron Lewis at the Houston gig and Metallica's James Hetfield

Monitor engineer Maxie Williams (left) and stage manager Jay Weinburgh at the Yamaha PM5D

at the Warfield. "You have a spare mix that is already set up," Williams explains. "A lot of the time, we don't hear about the guests until 10 or 15 minutes before showtime," Olech adds. "But it doesn't affect us nearly as much as it affects the backline guys."

"It's been a fun tour," Williams says. "This is definitely in the top two fun bands I've worked with in my life." Olech agrees: "Things have been consistent for [Alice in Chains] and that's what they've been striving for. We finally have a team in place and it seems to be working. And it has finally reflected back to the band to where they are not asking for much." ■

Sarah Benzuly is Mix*'s managing editor.*

www.yamahaca.com

Roadies.

EEEngine

With 30 years of experience under our belt, we're ready to hit the road again. Introducing the Tn Series of amplifiers from Yamaha. Stable 2 ohm drive capabilities make this series perfect for pairing and touring with NEXO and other line array systems. Built with a sturdy exterior, removable handles and easy air-filter maintenance, rigorous road conditions don't stand in the way. A 50% reduction in power consumption is realized with Yamaha's own EEEngine amp drive technology. These guys are built strong to run all night long. A five year warranty proves it.

The Tn Series of Amplifiers. Working hard so you don't have to.

When you need help, time zones shouldn't matter. Yamaha provides coast to coast 24/7 technical support. With dedicated staff and regional service centers, assistance is around the corner. If we can't fix it over the phone, we'll put a part or a person on the next plane out. It's that simple.

YAMAHA
commercial audio

Yamaha Commercial Audio Systems, Inc. P.O. Box 6600, Buena Park, CA 90620-6600 ©2006 Yamaha Commercial Audio Systems, Inc.

Pet Shop Boys

Photos and Text by Steve Jennings

Despite not having toured since 2002, electro-pop duo the Pet Shop Boys played to an exuberant crowd at San Francisco's Bill Graham Civic Auditorium in early November. *Mix* stopped by the Fundamental tour, where we asked front-of-house engineer Colin Boland and monitor engineer Seamus Fenton about the LD Systems–provided system.

The Electro-Voice X-Line P.A. is flown 10 boxes per side, carrying a total of 16 sub-bass boxes, although Boland says they rarely use that many. The system is augmented with two X-Array boxes and two d&b boxes per side for inner and outer front-fills. Boland mixes on a Yamaha PM5D. "I find some of the facilities onboard are more flexible than the 1D," he says. "Practically all processing and effects are onboard and the only external unit being used is a Lexicon 300 for vocal reverb. We are also using a variety of computers running the Iris system software, Lake processors, some analyzer programs, Pro Tools for recording and iTunes for walk-in music."

According to Fenton, Neil Tennant and three backup vocalists sing through Shure SM58 capsules on the new UHFR wireless systems. For in-ear monitors, Tennant has two pairs of Ultimate E5s; all the IEM systems are Sennheiser G3s. "Chris Lowe prefers Sony headphones and a Shure hardwire system for parts of the show," Fenton continues, "but mainly relies on his pair of L-Acoustics MTD108P near-fill monitors, which sound amazing."

Lowe plays a Korg Triton, which runs a Mac-based patch change system with two Virus Access rackmount modules. All the keyboard patches are submixed through a Yamaha 01V.

Colin Boland (left, FOH) and Seamus Fenton (monitors)

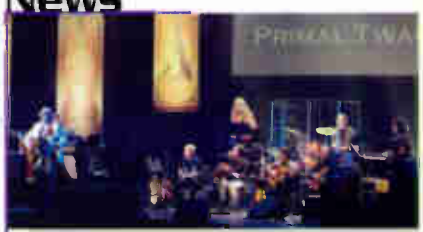
FixIt

Greg Mace of house-of-worship audio specialists GJM Sound recently completed an install at Nampa First Nazarene Church (Nampa, Idaho) that required serious planning, as the space was highly asymmetrical and finding the "sweet spot" for the Electro-Voice line arrays was difficult.

The center of the stage is off-center in relation to the center of the seating area, and both are off-center relative to the center of the room. This means there isn't a "center" from which to plot a traditional system design. We got the plumb bob lasers out, we made calls to double-check the [Electro-Voice] EASE data and we made a ton of chalk marks on the floor. Finally, we shot the room with lasers, and then got out two pieces of string. After using a balance of high-tech software and simple geometry, we did a sweep of the room from front to back with the string, and where the two crossed was our center. As additional insurance, each main array grid features a custom rotateable yoke, allowing for easy, non-Sheetrock-invasive aiming adjustments.

inside

News



For Primal Twang's world premiere at San Diego's North Park Theatre, rental sound company Meeting Services provided a Harman HiQnet™ SR system, which included JBL's VP (Venue Performance) Series loudspeakers and a Soundcraft Vi6 digital console.

For the seventh year, **3G Live** (L.A.) provided staging/lighting/sound for **Reventón**, a Latin rock/pop music festival held at the Los Angeles Memorial Coliseum, where 50,000 fans heard RBD, Ricky Martin, Alejandra Guzman and seven other Spanish-language performers. 3G Live brought out more than 200 **L-Acoustics** enclosures, some of which were cross-rented from fellow V-DOSC Network Owners Rat Sound, U.S. Audio and L.A. Cobra Sound...Auckland-based **College Hill Productions** selected its first **Soundcraft** Vi6 digital console. Company founder **Chris Tate** gave the console its first major workout at the Trusts Stadium for the Cirque Rocks event...**Zaxcom**'s wireless mic systems were put to the test for *Sunday at the Park With George* at London's Wyndham's Theatre. UK distributor **Everything Audio Ltd.** and **Orbital Sound** supervised the TRX900 systems' install...Sydney's **Jands Production Services** added a **Digidesign** VENUE to its inventory, making Jands the first rental company in Australia to offer a 96-channel D-Show Console...**Shure** and **Atlas Sound** will contribute $25,000 each to a fundraising campaign for the **NSCA Education Foundation** (www.nscafoundation.org)...**Atlanta Sound & Lighting** brought out its **Electro-Voice** XLC rig for a recent **Hank Williams Jr.** concert in Brunswick, Ga. Front-of-house engineer for the event was ASL's **Steve Dublin Stapleton**, who mixed on a **Midas** Heritage 3000.

Why pay less?

I'm amazed at the recent price drop of entry level condenser microphones.

Is the $1.99 microphone coming?

Are they any good? Well the short answer is yes!

Today, there are many cheap guitars, drums and keys for sale. These novice instruments serve a purpose by allowing kids and those who want to begin to experience music, to do so at a relatively low cost. If they don't continue playing, they haven't lost a lot of money. The cheap microphone does the same thing for recording.

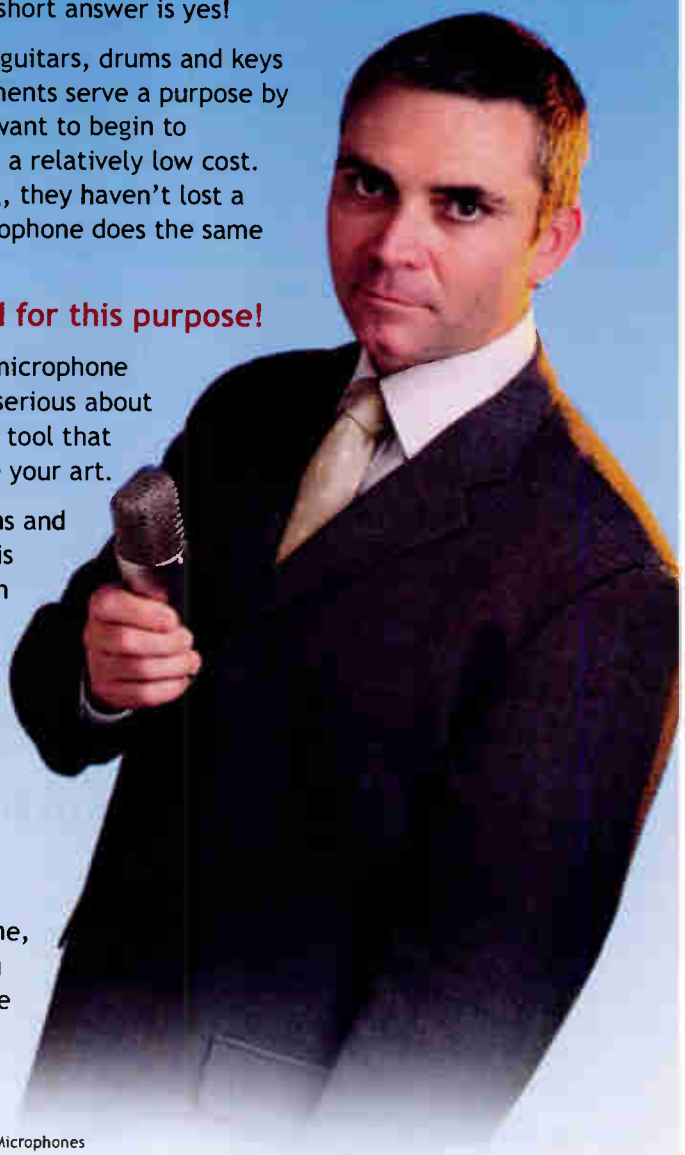
The NT1-A was not designed for this purpose!

The **NT1-A** is studio quality microphone designed for people who are serious about their music. This is a creative tool that can be relied upon to capture your art.

Thousands of serious musicians and engineers have invested in this microphone, thus making it an industry standard.

While the **NT1-A** isn't the lowest cost microphone available, it's worth every penny and continues to win prestigious awards for quality and performance.

Please listen to the **NT1-A** before you buy any microphone, and you too will hear why you should invest just a little more for the real thing.



Peter Freedman
President - Rode Microphones

Electronic Musician 2004 EDITORS CHOICE

Proudly designed and manufactured in Australia

www.rodemic.com

International

RØDE Microphones, 107 Carnarvon Street
SILVERWATER, NSW 2128 Australia
Ph: 61 2 9648 5855 Fax: 61 2 9648 2455

USA RØDE LLC

P.O. Box 3279 Torrance CA 90510-3279
Ph: 877 328 7456 (Toll Free within the U.S.)
Ph: 310 328 7456 Fax: 310 328 7180

Technical Support

For information and technical support questions in the Unites States and Puerto Rico, contact:

usasupport@rodemic.com, or
call: 877 328 7456 (toll free), or
310 328 7456

RØDE® MICROPHONES

PHOTO: TIM SOLAR

PHOTO: A.J. PEN

On the Road

Goo Goo Dolls

Front-of-house engineer Paul David Hager just wrapped up a couple months with the Goo Goo Dolls' tour, which relied on gear supplied by Showco/Clair Bros. The tour used the company's new i3 line array, which Hager was involved with for testing and R&D, augmenting the system with Prism 2 subs and P2 front-fills.

How much gear are you carrying?

The front-of-house console is a DiGiCo D5. Outboard gear comprises two TC Electronic D2 delays, a Line 6 Echo Pro, two Eventide H3000 SE, a Lexicon 480L and PCM70, and a Yamaha SPX990. Our drive rack includes a Crane Song HEDD 192 (AES out of the D5), seven Clair iO and two Sony CD players. We're recording to Pro Tools 7.2 with an Apple G5 Quad and three Accel cards.

What is the miking scheme?

Lead vocal is using a Sennheiser 5200 Series wireless with a K 104 head. Drums include AKG D12 and Sennheiser 901 (kick), Audix i5 (snare top) and AKG 414 (snare bottom), Neumann KM184 (hi-hat/ride), Neumann TLM 103 (toms/overheads), Royer 121/Audix D5/Neumann TLM170/Shure KSM32/Shure SM57 (guitars) and Audix OM5 (backing vocals). Basses are taken direct, and the sax uses an Audix RAD 360 wireless with MicroD.

Any specific mixing techniques?

I use a lot of studio mixing techniques to create a powerful sound without resorting to loud volumes. I do a bunch of side-bus compression. I use a TG-1 on drums and some tube compression on guitars. Also, there are no guitar amps onstage, so I have to create an environment at the very front of the stage that has a powerful sound for the people up-front. With this band, I like people walking away saying that the band rocks more than they thought they would.

Where can we find you when you're not on the road?

In the studio mixing records and eating sushi.

Now Playing

Barenaked Ladies

Sound Company: Solotech (Montreal)
FOH Engineer/Board: Robin Billinton/Soundcraft Vi6
Monitor Engineer/Board: John Sulek/Midas H3000
P.A./Amps: L-Acoustics V-DOSC, dV-DOSC, ARCS, SB218; Meyer Sound UPA-1P/Crown power
Monitors: Shure PSM700s, Ultimate Ear UE-10s
Microphones: Shure Beta 87Cs, KSM 44, KSM 32, Beta 52, Beta 57A
Additional Crew: Systems techs Marco Giappesi, Louis-Philippe Maziade Sirois

Imogen Heap

Sound Company: ESS (East Sussex, England)
FOH Engineer/Board: Mike Benson/Midas Heritage
Monitor Engineer/Board: Darren Connor/Soundcraft SM20
P.A.: Turbosound Aspect narrow TA890H, TA890L, TSW718, TQ445 fills
Monitors: ESS dual-concentric 15-inch, IEMs
Outboard Gear: TLA C1, Drawmer DS201, dbx 166/160A, Lexicon PCM81, TC Helicon, Yamaha SPX990, TC Electronic M1/D2
Microphones: Shure Beta 91, Beta 52, Beta 58A; Audio-Technica AE3000, AE5100, ATM 35, AT4050; Beyer M88; Sennheiser MD409
Additional Crew: crew chief/FOH rigger Gary Brookes, P.A. tech James Kazeze

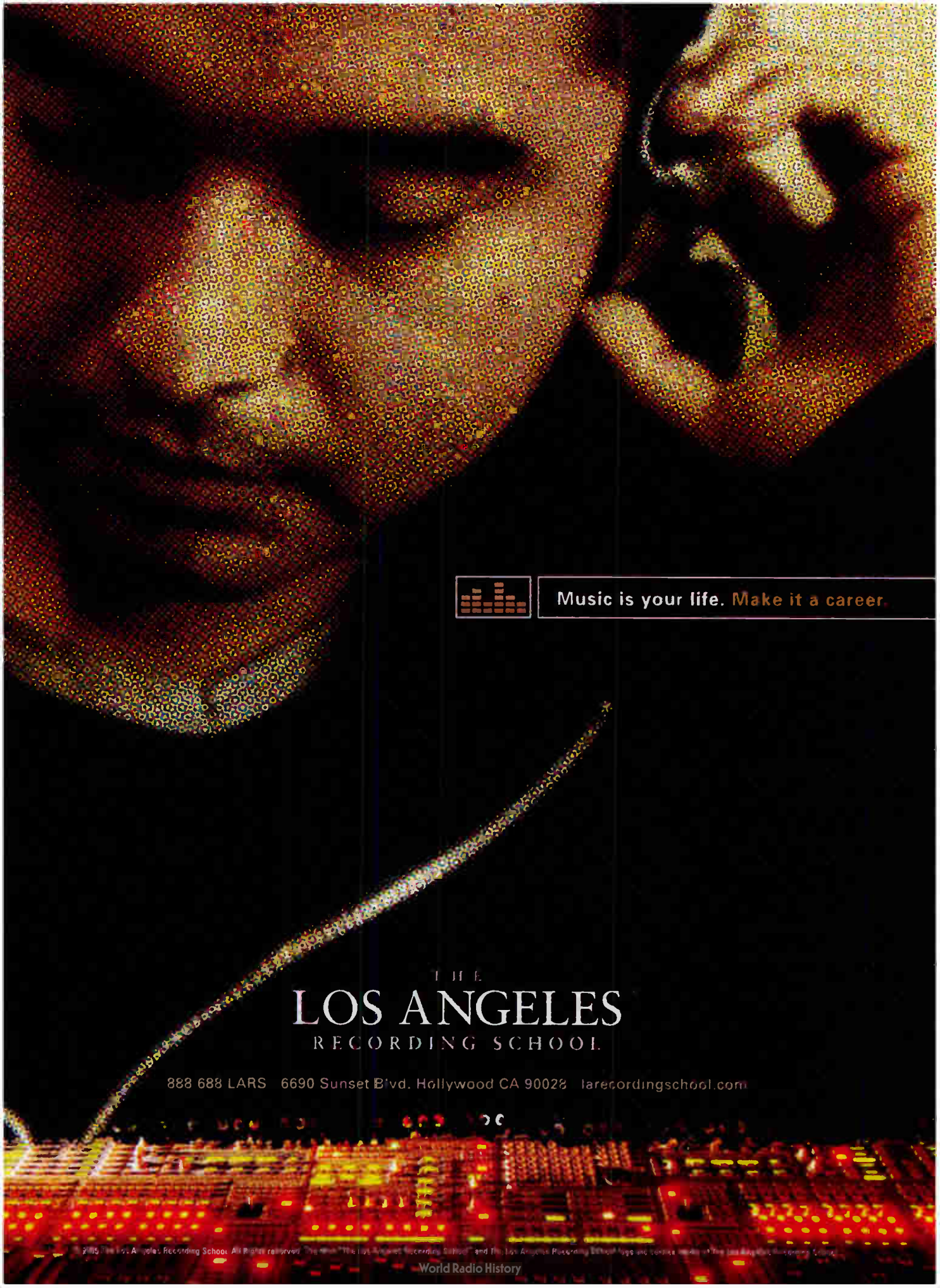
Garry Brown Takes on Vegoose

PHOTO: DAVE VANIAN

Garry Brown at the Vegoose festival stop

Held over Halloween weekend, this year's Vegoose festival (Las Vegas) saw four stages hosting top talent such as Tom Petty & The Heartbreakers, the Black Crowes, the Mars Volta and The Killers, among others. *Mix* caught up with Trey Anastasio and Phil Lesh's engineer, Garry Brown, about the festival stop. "As we were already out on tour, we had our own board groups and stage package," Brown says. "But for the last night at the festival site, we only used our monitor console, a Yamaha PM5D, and stage package, d&b M2 wedges. The festival P.A. company was Eighth Day Sound—also our touring company—which made things very easy. I used Widespread Panic's console. We are both using the Digidesign VENUE, so instead of having two sitting next to each other at FOH, I just brought my file on a USB stick. That made life easy!"

For this stop, Brown contended with mixing for both Anastasio and Lesh simultaneously while the two jammed with keyboardist John Medeski. "So it was an adapted mix," Brown explains. "The biggest thing was making sure that the low end was tight and even."



BY SARAH BENZULY

Sound on Stage

Growing Alongside San Francisco's Music Scene

The Bridge School benefits. Hardly Strictly Bluegrass Festival. Numerous local radio station events and accompanying fireworks displays. Bay to Breakers marathon. Greek Theater. Shoreline Amphitheater. HP Pavilion. Blues festivals. San Francisco Symphony at Davies. Stern Grove. Konochti Harbor. Broadway by the Bay. High-profile corporate work.

These are but a few from a long list of events and clients that San Francisco Bay Area–based Sound on Stage (Hayward, Calif.; www.soundonstage.com) services. And just like many local SR providers across the country, it all began with music.

In the late '60s, owner Jerry Pfeffer moved to the Bay Area to play in bands and get a degree in broadcasting. At that time, the San Francisco music scene was exploding, with sounds from the Grateful Dead, Janis Joplin, Jefferson Airplane, Big Brother & The Holding Company and many others blasting over the local airwaves. And the birth of this new type of music and culture also saw the beginning of Sound on Stage. "It was really good here in the late '60s, early '70s," Pfeffer recalls. "A lot of Bay Area bands were touring, and we started going on tour and building equipment to go on tour. One tour led to another, and we built more equipment. The local scene itself, there were the annual events coming and going from one year to the next. I've been with some events 25, 30 years now. We helped dedicate Shoreline [Amphitheater] getting built originally, so we've been there since the beginning. We were at AT&T Park's [home of the San Francisco Giants] groundbreaking ceremonies. Also, I've been the sound engineer for the San Francisco 49ers; this is my 27th year. I've been through all the Super Bowls."

Whew. For a company with its hand on the pulse of the city, finding the right crew and right gear to fill the riders is a must. "That's what we strive for," Pfeffer replies. "You can't continue to grow your company without good staff. So having staff who have been with us a long time helps because they understand the philosophy of what we're trying to do: Please the customer, day in and day out, no matter how big or small." Making happy customers is a crew of somewhere between 25 and 30 engineers and techs, as well as a slew of union labor. In addition, the company's Cal Cases case company is built into the back of the facility, and provides custom ATA cases and repair/refoam service for other brands. "It was a necessary evil," Pfeffer says of this new branch. "There are a couple of our people who do nothing but build cases."

With this new source of revenue, Sound on Stage has been continually stocking its console inventory. "Early on," Pfeffer recalls, "we couldn't buy mixing consoles, so I built three mixing consoles—multiple-mix desks. But after a while, Yamaha started and we started buying

PHOTO: DENNIS DEEM

Sound on Stage's Jerry Pfeffer at one of the many Yamaha boards

Yamaha [consoles]. I think I owned every one from the PM1000, 2000, 3000, 4000, 5000 and PM5D. We're starting to move more into digital consoles. I think that's the move at the moment. At this point, if someone comes into town, we get a lot of esoteric digital gear; it's hard to own all the digital consoles that everybody wants. There's about four or five [main digital boards], and each one is about $75,000, so keeping that inventory in stock is hard. But we have 14 or 15 consoles, primarily Yamaha. We had a DiGiCo D5 out; we've used the Digidesign [VENUE], which is a nice console—whatever the rider calls for, and that's primarily where our inventory stems from.

"So in the past 20-odd years," Pfeffer continues, "I built my own speaker systems, pretty much like every other company did. In the last few years, we hooked up with [L-Acoustics] V-DOSC and we liked the way it sounded and we started buying speakers off the shelf; this is the first time in the company's history that we are actually using off-the-shelf [speakers] that we're renting to people." The company offers a stocked P.A. inventory, including dV-DOSC, ARCs, 115XT monitors and subs. Complementing this system is hundreds of mics, a huge Shure wireless and in-ear bud inventory, proprietary JBL boxes ("These are small and unique for a lot of these jobs where you need to hide speakers in the corner," says Pfeffer), Crest/Crown/Lab.gruppen amps, and XTA and BSS processing.

Whether it is thinking about the general overview of the Bay Area scene or getting into the nitty-gritty of determining cable supply, Pfeffer and general manager George Edwards are insistent on one thing: customer satisfaction. Pfeffer's motto, Edwards says, "is, 'Gentlemen, remember: Every day is about continuing to refine our craft.'" To that, Pfeffer adds, "and try to make everybody happy." ■

Sarah Benzuly is Mix's managing editor.

Perfect Sound Every Time.

*DTS-HD Master Audio Suite comes with DTS HD StreamPlayer™ and DTS StreamToole™

Take your audio content performance to a new level with DTS-HD™ Master Audio Suite software – an all in one solution for audio encoding, decoding, quality control, and bit stream management for Blu-ray Disc™ and HD DVD™. DTS-HD Master Audio™ streams can be encoded with up to 7.1 channels of bit-for bit audio with a backward compatible DTS Core - all in a single encoded data file. Designed for ease of use, simplified workflow, and legendary DTS audio quality - It's a Perfect 10 Every Time.

Visit us at www.dts.com/pro-audio for more details.

dts-HD™
High Definition Audio

BY STEVE LA CERRA

Talk To Me

DEVELOPMENTS IN LIVE SOUND SYSTEM PROTOCOLS

A long time ago, in a sound system not so far away, routing audio meant connecting copper wire from an analog output to an analog input. Anytime a connection changed, the system designer had to re-patch, taking into consideration connector type, gender. signal "direction," impedance and channel identification. "Multipair" cable was developed to help steadfast audio engineers manage large numbers of channels. Unfortunately, copper multipair is heavy, stiff and expensive, and analog audio degrades as it travels over copper.

When digital technology came along, multichannel audio changed drastically. Not only was it possible to send more than one channel down a twisted pair of copper wires, but fiber-optic cable made it possible to send *many* channels of audio down a *single*, bidirectional connection. Further complicating matters was the fact that different types of data (audio, video, MIDI, control) could be routed via the same connection.

Somewhere along the way, the pro audio industry realized we could take advantage of hardware developments (such as Ethernet or FireWire) into which the computer industry had already invested. There is a distinct edge in such a philosophy: As huge corporations such as Cisco and 3Com continue to advance Ethernet technology, digital audio networks benefit from the increase in speed and decreased manufacturing costs of associated hardware. Cat-5 cable is cheap, readily available and easy to work with. The result is that there are an awful lot of "standards" for digital audio distribution. Many of these networks are "open," meaning that they are not restricted to products from one manufacturer, and in some cases, a single interface may be able to control devices from multiple manufacturers.

To make clear the similarities and differences, compatibilities and lack thereof, *Mix* spoke with manufacturers and industry experts about digital audio system networking. One important concern is understanding the distinction between the different types of networks that are available.

"A common thing that I observe," explains David Scheirman, VP of tour sound for JBL Professional, "is the lack of clarification between networked digital audio and digital control networks. The word 'digital' alone can throw non-technical people off the track. Digital control networks are found in many industries, from high-rise elevators to industrial plant controls to security systems. Digital audio networking is much more complex, requiring higher bandwidth, and has evolved more recently.

"Harman's chosen path is that many of our newer products—AKG wireless mic receivers, JBL powered loudspeakers, digital EQs from BSS and dbx, Crown amps and Soundcraft/Studer consoles—can work together with a single connectivity scheme and a common user interface [System Architect software], so users can bundle all product classes within the same network," continues Scheirman. "Our product set from the different brands is divided into two categories: products that can be digitally networked for control and monitoring purposes from a remote-control device, and products that can also use and incorporate networked digital audio signals. They can all be linked on the same network. The HiQnet system does not 'care' if you want to incorporate digital audio into the network or not, in addition to [controlling and] monitoring signals, but it is engineered to do so."

Because digital audio networking is a relatively new technology, improvements are being made rapidly. "Digital audio networking as a whole has evolved quite a bit, not just with Yamaha mLAN but [FireWire IEEE] 1394 as a whole," says George Hamilton, Yamaha's music production product manager. "There were issues in the past where manufacturers of the FireWire controller boards were not holding to tight enough of a tolerance in the voltage supply. If that happens, the network disconnects temporarily and loses the device. There were also issues when Windows Service Pack 2 was released. It reset the FireWire bus back to S100; even if you were using FW800 devices, they operated at S100. Things like that have been corrected and mLAN is getting along well with Windows. Things have been a bit slower on the Mac side because developers have to wait for Apple to make changes to Core Audio before we can take advantages of certain mLAN features like the graphic patchbay. In addition, Apple also switched over to a completely different processor, which requires twice the effort to upgrade two Core systems."

One of the problems with computer digital audio stems from the computer itself. "A computer is a very poor tape recorder, and it is not a real-time device," Hamilton explains. "Computers may be very fast, and we continue to make them faster so that we can do things that appear to be happening in real time. That's where latency comes in and causes problems. Most new computer hardware is oriented more toward video graphics. It's much easier to fool the eye than it is to fool the ear. You can fool the human eye with 24 frames per second, but you cannot fool the ear with 44,100 samples

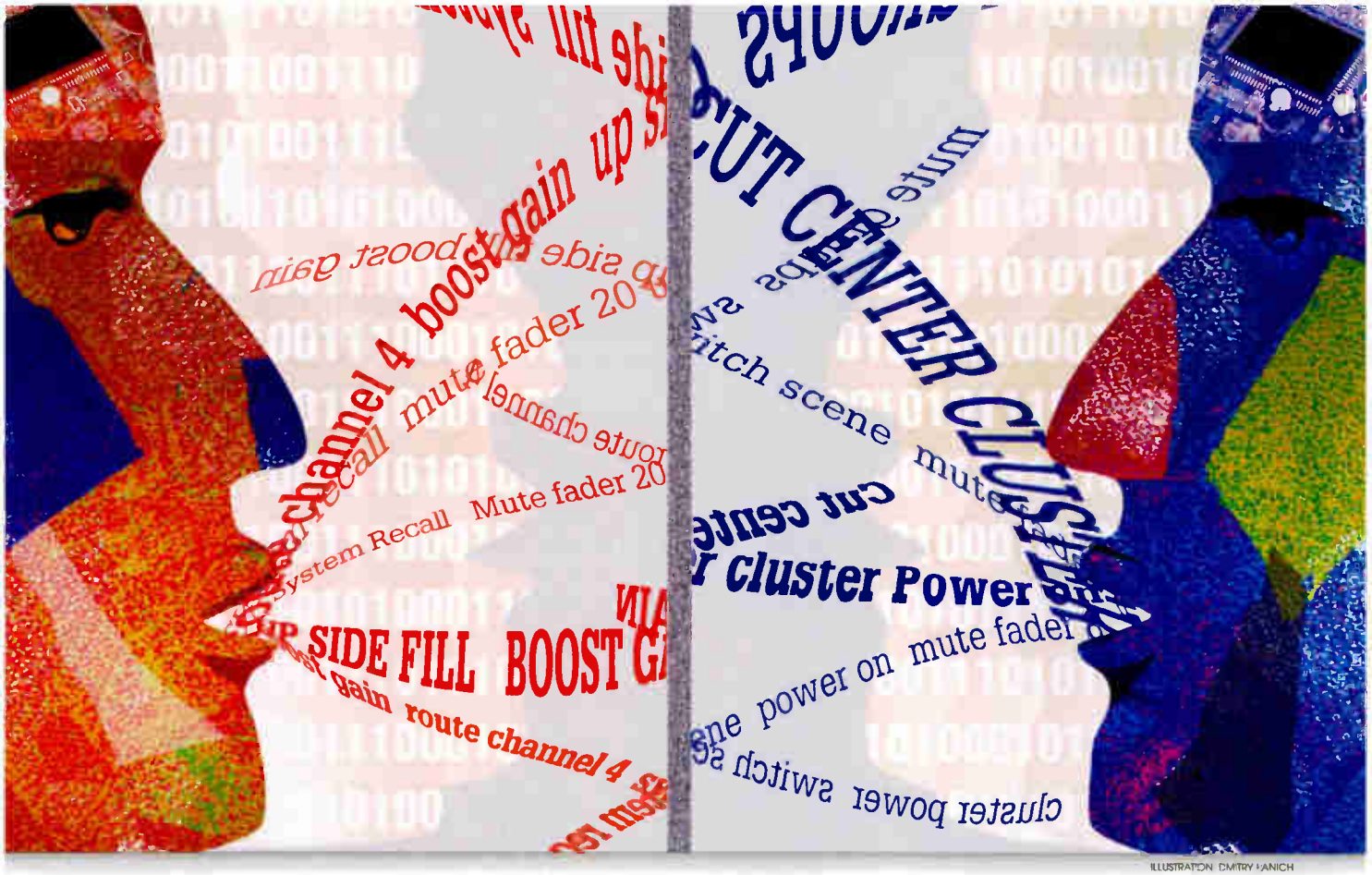


ILLUSTRATION: DMITRY KANICH

per second. That means that we need wider bandwidth to take multitrack audio to the highest level."

Although some digital audio network manufacturers embrace using existing network technology, others feel that there are different paths to travel. "Part of the problem with basing an audio network upon existing network technology is that those systems were not intended to support high-quality, high-bandwidth audio in real time," explains Ray Legnini, senior marketing product manager at Aviom. "A certain segment of the market is content with the concept of distributing audio down the same pipeline used by their printers and computers, but those networks are not designed to move audio in *real time*. They *can* be used by people working in editing suites who need to move computer data. If an MS Word doc arrives at your desk a few milliseconds late, who cares? If you're in a situation where the network serves sound effects, you could request a 'door slam' sound and have it in a few seconds. You're not streaming audio and you're not using it in real time. But if you're overdubbing to a guitar track and it arrives a few milliseconds late, that's a serious problem.

"We developed A-Net® from scratch with a different perspective," Legnini continues. "We asked the question, 'What is the best way to move high-bandwidth, high-quality audio and lots of it in real time?' We found that common computer networks couldn't cut it. There are problems with lack of bandwidth, signal degradation caused by things like jitter and wander [low-frequency jitter artifacts], and a traditional computer network's lack of ability to deliver audio in what you'd call real time. Obviously, we know that audio must go through some sort of A/D and D/A process, so it's not *truly* real time—there is some delay. How do you provide what feels like real-time monitoring for performers when they are overdubbing to tracks that were recorded yesterday? We combat these issues by making a system with latency [that is] as low as conceivable—given the hardware available in the world today—that can pass audio for a concert through a digital pipeline without introducing a slapback echo anywhere in the network."

The issue of distributed digital audio goes well beyond finding a replacement for multipair copper technology. Simply replacing an analog snake with a digital network between the stage and front of house works great, but doesn't represent the big picture.

"The benefits of connectivity make digital audio networking so powerful," says Legnini. "Take a front-of-house-to-stage connection and add a recording feed. You need a method of splitting the signal. In the analog world, this means copper wire, connectors, and the time and effort to terminate the connections. Once audio is in the digital domain, it's relatively easy to add another split. Consider something like a concert at the Olympics. The stage outputs must go to every country's sound booth so they can mix in their own manner and blend in native-language commentary. Now you need 25 splits. If the audio is already in digital form, you simply extend the network and run a cable to each booth. Try that with analog."

MORE THAN MEETS THE EAR

Bob Moses, IC program manager at THAT Corporation, has been involved with digital audio networking since 1995, when he linked a PC to a home hi-fi system via FireWire for a Bill Gates keynote address at a Windows Convention presentation. Moses points out that there's a lot more to networking digital audio than meets the eye. "When you look at an audio network, you are really looking at something more like an operating system on a PC," he says. "There is a tremendous amount of software involved in that network, and there are rigid

constraints on what the network can do and how it accomplishes the job. As designers, we try to hide that as much as possible and have little icons on a GUI screen so a user can draw lines and everything is magically connected."

However, creating an audio network requires dealing with many variables. "You have to pick a set of compromises from parameters including the application, the cost, the types of devices, the audio formats and whether there will be additional data such as control or video," notes Moses. "The CobraNet designers chose one set of compromises, and the EtherSound designers chose another set of compromises. Comparing them is like comparing apples to oranges. Different networks are intended for different applications and reflect a different set of compromises. They are all great for what they were intended to do, but if you try to take them beyond their original intentions, they start to reveal limitations or problems."

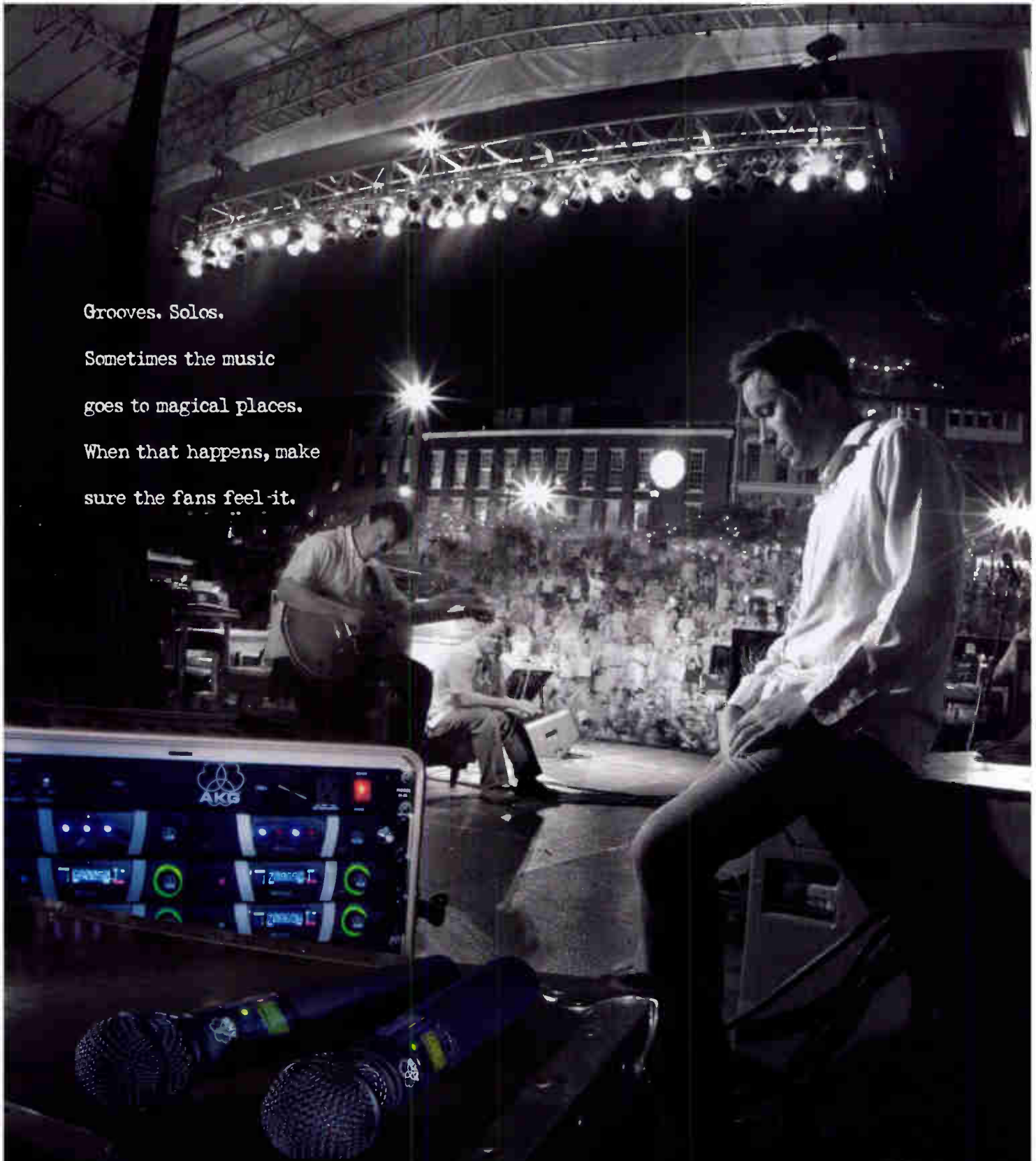
Lack of compatibility should be examined on a per-application basis. "CobraNet and EtherSound are popular for large installs, but in the studio there's FireWire. If you try to take FireWire into a large venue and do a live show with it, you're stretching it beyond what it was meant to do," Moses explains. "CobraNet or EtherSound were never intended to talk with FireWire. If you look under the hood, they are very different technologies. Theoretically, it is possible to translate one protocol stack to the other, but it's complicated and prone to problems.

"In our market, people want to go to a store and choose a brand that fits their application at a price point that has the right features," Moses continues. "We'd like it to be like an XLR connector; we really don't care what the electrons are doing in and out of that connector. We'd love for there to be one ubiquitous network that does what MIDI did for us. Yet even with MIDI, some people use Sys Ex for certain messages and that won't talk to devices using controller messages. With networking, we are trying to create huge systems with very complex devices doing very complicated things. It's difficult to accomplish that within a network, let alone accomplish that between networks that are not designed to work together. Instead of putting so much effort into trying to make systems talk to each other and thus compromise what they do, there should be more effort into educating people as to the applications for which these various networks are designed."

THE FUTURE OF AUDIO NETWORKING

Looking through various digital audio networks profiled later, you'll notice a lot of possibilities, many of which won't play nicely with each other. This is reminiscent of a similar scenario in the late 1970s and early '80s. At that time, synthesizer companies produced keyboards, sound modules and sequencers that used proprietary communication protocol to talk to each other. None of company A's devices could be used with company B's devices unless clumsy (and sometimes unreliable) converters were employed. When the MIDI spec arrived in 1983, those problems went away. To say that electronic music and the gear used to produce it flourished as a result of MIDI would be a gross understatement. Perhaps our situation is best summarized by Tom Stephenson, director of technology for Roland Systems Group U.S.

"In the professional live sound world, we have a plethora of formats all of which



AKG WMS 4000 Galactic is known for being musically adventurous with its funk/fusion style. That's why AKG offers products like the WMS 4000. A wireless mic system for vocals or instruments that's simply unrivaled for audio quality and reliability. It captures those unexpected moments with very expected clarity. When the music is going places, make sure your equipment is worthy of the journey.

Visit www.akg.com/us to find your nearest AKG distributor or dealer.
Catch the band on tour: www.galacticfunk.com

AKG

ADV 6501/E

H A Harman International Company

Believe In Your Passion™

are proprietary," Stephenson says. "Most manufacturers are trying to create their own standard, but none are free and open as most successful standards have been. In addition, computer companies don't want to support myriad proprietary formats that require licensing fees. Although FireWire has been used for audio in the studio, it has a distance limitation and is a very complicated and expensive format to support. Witness the fact that there still aren't any FireWire products that work the way MIDI works, allowing products from different manufacturers to interface with each other easily.

"As manufacturers, we need to consider working together to create an open, free standard, probably based around Gigabit Ethernet," Stephenson continues. "As a standard it should work like MIDI, allowing for manufacturers' products to easily interface with each other while offering paths for proprietary control data, as does MIDI Sys Ex. Gigabit Ethernet would take advantage of the economies of scale of the consumer electronics world, and would provide a high bandwidth and scalable format that could accommodate many channels of audio, as well as video and data control. A free and open standard would benefit the whole industry, making it easier to design systems using the best components from a range of manufacturers."

THE SYSTEMS

Would you buy the newest digital reverb from Lexicon if you couldn't use it with your Yamaha mixing console? With that and other questions in mind, we examine available audio networking protocols.

Adopting the physical aspects of Ethernet, Aviom's (www.aviom.com) A-Net® is designed specifically for streaming audio. Benefits of A-Net over Ethernet-based transfer include reduced latency, longer cable runs and improved clock performance. Aviom's Pro16 Series™ is intended for point-to-point audio distribution with maximum speed. A Pro16 system introduces less than 1 ms of latency, including the A/D and D/A conversions, even when a number of devices are daisy-chained. Pro16 supports bidirectional audio transfer in systems as large as 32x32 or 48x16. It is designed for plug-and-play operation, facilitating cue monitoring through Aviom's A-16*II* personal mixer. One input module can supply audio to as many personal mixers as required, with up to 150 meters of Cat-5 cable between devices.

The Pro64 version of A-Net employs the speed of Pro16 but adds support for higher-resolution sample rates, channel counts up to 64x64, control data for remote mic pre's such as the Aviom 6416m and network management. Aviom's Virtual Data Cables™ enable distribution of 14 channels of data such as MIDI, GPIO or RS-232. Pro16 Series output devices and Pro64 Series products may be used together in a single system using the ASI A-Net systems interface as a link.

BSS (www.bssaudious.com) Soundweb™ is a family of audio processing devices linked via a digital communication network. Soundweb-compatible hardware is self-contained and requires no additional hardware to route eight bidirectional channels of 24-bit/48kHz audio, plus control data via Cat-5 cable at distances up to 1,000 feet. Systems can be designed offline using Soundweb Designer software. Adding BSS's SW9016 video/audio matrix switcher allows simultaneous routing of video and audio to several zones.

A basic Soundweb can be created by connecting two Soundweb 9088iis with a Cat-5 cable, networking eight channels of audio, plus control data. Larger systems may be created by patching the network "out" of

—CONTINUED ON PAGE 96

Contain Yourself

We're not necessarily referring to your enthusiasm for these four exciting new MG-Series mixer models. It's more about the unique single-knob compressors on their mono inputs, designed to keep loud from getting too loud and soft from getting lost in the mix. Combine this with MG's other performance-enhanced features and it's hard to resist a visit to your local Yamaha Live Sound dealer for closer examination.

YAMAHA

- Switchable Monitor Mix Routing
- SPX Digital Effects (MG82CX/MG124CX)
- Mic Stand-Mountable (MG102C/MG82CX)
- $149.00–$379.00 Suggested Retail Price

BY GEORGE PETERSEN

The Big Boards

LARGE-FORMAT SOUND REINFORCEMENT CONSOLES

Ten years ago, this article would have been very different. The concept of digital consoles for sound reinforcement was in its infancy, with a single entry, the InnovaSon Sensory, just a few months old. Meanwhile, the number of choices in the big boards that offer 40 or more inputs was limited to a few models at most; with few exceptions, back then the idea of a "big" board was a 32-channel model. It's one of those curious addictions we have in audio—as the number of available channels increases (live *or* studio), so does the apparent need for more inputs.

But unlike attitudes concerning recorded sound, the word "vintage" holds little excitement when it comes to sound reinforcement gear. Some of those "good old days" weren't really all that good. Today, for the most part, reliability is up and weight/bulk are generally down, as are prices—certainly in terms of the features/performance ratio offered by modern consoles. And whether you're looking for an analog or digital model, you'll find that these are pretty good shopping days. As profiled in the following pages, there are more models available today than ever before.

Options abound, as well. Once a rare commodity, touches such as dual power supply interfacing, onboard matrix mixing, LCR mix buses, direct outputs for recording feeds and the ability to interface with networked audio are becoming closer to standard equipment offerings.

The toughest decision today is probably whether to invest in analog or digital technologies. In terms of flexibility, digital control rules the roost, especially when used in situations requiring memory resets or intensive automation. Pages of handwritten notes and white-tape scribble strips listing the setups for each act, or multiple hands twirling knobs for a fast changeover during a festival, seem very last-century as compared to a single button reset on a digital board. And with a huge amount of available DSP in the forms of onboard effects—either supplied or via third-party plug-ins and/or cards—the need for outboard racks at front of house is either greatly diminished or eliminated.

The digital edge doesn't stop there. By now, most engineers have gotten used to the idea of doing room setup and system tweaks via laptops or tablet controllers, and adding wireless control into the equation makes the process even more precise. But using that same technology to make mix adjustments on your digital console from anywhere in the house during soundcheck or the performance opens up a world of possibilities. After years of concerns about working in the ideal position for house mixing, suddenly it's anywhere you want or need to be. A small-footprint surface controlling a large number of channels may mean more available seating for the promoter, as well. At $100 a ticket, for example, 20 more seats per show becomes staggeringly high over a long tour or extended theater run.

For all of digital's obvious advantages, however, the wise console shopper should also consider some of its drawbacks. In any live show, there are no second takes—reliability is *everything*. A 99-percent success rate is unacceptable, equating to two downtimes over a six-month run. Thankfully, today's digital consoles far surpass this figure, but failures can come from factors well beyond any sound system's control, and here, a power outage (or simple "trip over the cable") can happen in less than a second, wreaking havoc with digital gear. An analog console weathers such bumps with ease, but reset/reboot times are critical in digital boards. Another issue to consider is what happens to the audio during that period: Does it mute or continue to pass? In either scenario, planning for the inevitable is essential, so if true fail-safe operation is required, budgeting for uninterruptible power supply gear is a must.

A more basic analog/digital consideration is the console operator. This is less of a problem on tours, but if a console is installed in a venue where different people operate the system, then the system's learning curve comes front and center. I recently spec'd a system for a local performing arts center, where this issue was an important factor in selecting a board. We chose analog for that reason. It's not a question of professionalism, but if I were asked to engineer a one-off on an unfamiliar mixer, I'd go analog every time.

Features aside, it comes down to sound, and there are fans in both analog and digital camps. The decision is not easy. Two boards with identical specs can sound completely different, especially in terms of their preamps and equalization designs. The process is not made any easier by the fact that it's nearly impossible to make simple A/B comparisons or listening tests between models.

In many ways, selecting the right mixer for your needs is a balancing act that goes beyond simply selecting the number of inputs and buses you require. In some circumstances, the console's physical size or weight may be critical. Other situations may require complex automation for theater or storing multi-act setups, or digital interfacing with networked audio or control/distribution systems. The point on everyone's mind is always price, but it's wise to look beyond the sticker and consider all of the factors (such as the value of onboard effects on a digital board) to make sure you're comparing consoles to consoles, and not oranges to harpoons.

To make at least part of your console shopping easier, we've included detailed charts on the following two pages, listing the essential features and configurations for live sound mixers with 40 or more channels. Today, it's a buyer's market, with a banquet of available products—both analog and digital—to meet your needs at nearly any budget. Enjoy!

—CONTINUED ON PAGE 90

For more information about jump starting your career call 1-877-27 AUDIO or go to www.sae.edu

Professional Audio Education.
Industry Standard Equipment.
Individual Studio Time.
Global Recognition.

OPEN HOUSE

February 10th: Los Angeles, Miami, Nashville
February 11th: New York City

SAE INSTITUTE

NEW YORK 212-944-9121 LOS ANGELES 323-466-6323
NASHVILLE 615-244-5848 MIAMI 305-944-7494
Plus a further 40 locations around the world! Established for over 30 years.

Analog Live Consoles, 40-Plus Channels

Product / Website	Frame Sizes	Groups	Mute Groups	Auxes	Stereo Inputs	Matrix	EQ, Type	Weight (lbs) for 40 Frame	Dimensions for 40 Frame (in mm)	Price (USD) for 40 Frame	Notes
Allen & Heath GL2400 www.glseries.com	40/32/24/16	4	N/A	6	4	7x4	4-band fixed frequency	69.3	1,233x560	$3,999	FOH/monitor functionality
Allen & Heath GL2800	56/48/40/32/24	8	4	10	4	12x4	4-band sweep mids	90.2	1,398x650	$6,999	FOH/monitor functionality; dual PS opt.
Allen & Heath GL3800	48/40/32/24	8	4	10	4	12x4	4-band sweep mids	112	1,536x691	$9,399	Similar to GL2800 but has VU meter bridge and premium faders; 8 stereo inputs opt.
Allen & Heath GL4800	48/40/32/24	8	8	10	4	11x4	4-band/semi-parametric mids	147	1,676x748	$15,399	FOH/monitor functionality; 128-snapshot memory; dual PS opt; 8 stereo inputs opt.
Altair Audio Electra E3 www.altairaudio.com	48/40/32	8	8	16	4	16x8	4-band parametric mids	297	1,884x890	$35,000	99 scenes; onboard dynamics, motorized master faders, dual PS opt.
Alto Typhoon N4800 www.altoproaudio.com	48/32/24/16	8	4	8	4	N/A	4-band sweep mids	71	1,160x956	$4,299	Includes custom flight case; dual PS opt.
APB-Dynasonics Spectra-C www.apb-dynasonics.com	56/48/40/32/24	8	12	10	4	15x4	4-band sweep mids	165	1,679x790	$18,200	Includes two power supplies; optional 24-channel input expander; balanced send/returns version is $900 more
APB-Dynasonics Spectra-T	56/48/40/32/24	8	12	10	4	15x4	4-band sweepable	165	1,679x790	$21,300	With two power supplies; opt. 24-ch. input expander available
ATI Paragon II Production www.audiotoys.com	64/48	8	8	8	8	16x8	4-band parametric	390	1,727x990	$129,000	Dynamics on every channel; 256-scene recall; moving faders opt.
Audient Aztec www.audient.com	56/48/40/32	8	12	10	2	12x8	4-band parametric mids	202	1,831x1,068	N/A	Mute/VCA automation standard; external tubular frame simplifies transport; dual PS opt.
Cadac F-Type www.cadac-sound.com	Up to 56 mono/ stereo channels	12	8	16	opt.	24 outs	4-band parametric	N/A	2,330x820	N/A	Manual, VCA or moving-fader automation; opt. dual PS/dual PC redundancy
Cadac J-Type	40/32/24/16	16	8	12	opt.	32 outs	3-band parametric	N/A	2,330x935	N/A	Expandable with up to four frames for 112 inputs max; dual PS standard
Cadac R-Type	75/51/27	16	16	32	opt.	32 outs	4-band parametric	N/A	1,724x935	N/A	Expandable in 24-module sections that disconnect for ease in transport
Carvin SL Series www.carvin.com	56/40/24	8	N/A	8	4	N/A	4-band sweep mids	68	1,321x577	$3,299	Sold direct
Crest HP-Eight www.crestaudio.com	56/48/40/32/24	8	4	10	5	11x2	4-band sweep mids	110	1,677x712	$6,110	FOH/monitor functionality; dual PS opt.
Gamble DCX 40 www.gambleboards.com	40 dual mic/line	16	128	32	0	16x2	4-band parametric	650	modular	$180,000	Digital controlled analog mix system; dynamics on every channel
Gamble DCX Event 60	60 dual mic/line	16	128	32	0	16x2	4-band parametric	750	modular	$250,000	Digital controlled analog mix system; dynamics on every channel
Harrison LPC www.harrisonconsoles.com	40-120 dual	16	16	16	N/A	32 outs	4-band parametric	400	1,879x1,016	special order	Digitally controlled analog; four inputs/ channel; recall of all parameters; dynamics on every channel
Mackie Onyx 80 www.mackie.com	48/40/32/24	8	4	8	8	10x2	4-band sweep mids	131	1,788x751	$5,999	Optional redundant PS; Cal Perkins EQ design
Midas Heritage 4000 www.midasconsoles.com	64/56/48	24	10	8	4	27x8	4-band parametric	562	2,257x1,054	$155,000	Dimensions are for 48-frame version; 8 auxes are stereo; snapshot console automation
Midas Heritage 3000	64/56/48/40/32/24	24	10	8	4	27x8	4-band parametric	415	1,985x1,054	$122,000	Snapshot automation of VCA routing, mutes, channel and VCA levels; 8 auxes are stereo
Midas Heritage 2000	64/56/48/40/32/24	12	10	12	4	15x8	4-band parametric	381	1,985x1,054	$99,000	Snapshot automation of VCA routing, mutes, channel and VCA levels
Midas Heritage 1000	56/48/40/32/24	10	10	10	4	15x8	4-band semi-parametric	286	1,950x810	$71,000	Snapshot automation of VCA routing, mutes, channel and VCA levels
Midas Legend 3000	52/44/36/28	8	10	12	4	12x6	4-band semi-parametric	220	1,904x920	$48,000	Dimensions are for 44-frame version; EQ, automation same as XL3
Midas Siena	64/56/48/40/32/24	16	5	16	4	none	4-band	143	1,569x782	$28,000	Configurable mono/stereo auxes; FOH/ monitor functionality
Soundcraft Series Two www.soundcraft.com	40/32/24	8	8	4	2	11x2	4-band sweep mids	106	1,449x716	$8,695	4 stereo effects returns
Soundcraft GB4	40/32/24/16/12	4	4	8	2	7x4	4-band sweep mids	82	1,523x656	$6,699	Record output with stereo limiter
Soundcraft GB8	48/40/32/24/16	8	4	8	2	7x4	4-band sweep mids	88	1,666x656	$8,659	FOH/monitor functionality; dual PS opt.
Soundcraft Live 8	40/32/24/16	8	4	6	2	10x2	4-band sweep mids	118	1,581x658	$6,199	256 mute snapshots
Soundcraft MH2	48/40/32/24	8	6	10	4	11x4	4-band sweepable	183	1,732x753	$16,000	FOH/monitor functionality; dual PS opt.
Soundcraft MH3	56/48/40/32/24	8	8	12	4	12x4	4-band parametric mids	202	1,947x813	$24,000	Snapshot automation; integrated DriveRack and Varicurve integration; FOH/monitor functionality
Soundcraft MH4	56/48/40/32/24	8	8	12	4	20x8	4-band parametric mids	225	1,968x813	$35,000	Snapshot automation; integrated DriveRack and Varicurve integration; FOH/monitor functionality
Soundcraft Series 5	56/48/40/32/2	8	8	12	4	16x10	4-band parametric	344	2,007x914	$55,000	256 mute snapshots
Yamaha PM5000 www.yamahaca.com	52/36/28	8	990	12	4	16x12	4-band parametric	394	1,167x1,113	$93,000 (for 52-frame)	990 scene memory; motorized faders; 12 auxes are stereo; dual PS opt.
Yamaha M3000A	56x40x24	2-16	8	8	4	20x8	4-band sweepable	238	2,043x874	$13,995	Assignable aux system; 128-scene memory; dual PS opt.
Yamaha M2500	56/48/40/32/24	8	8	14	4	13x8	4-band sweep mids	185	1,899x875	$9,995	128-scene memory; dual PS opt.

Notes: Unless otherwise stated, all prices and dimensions refer to 40-input-channel versions.

AURORA INTERFACE OPTIONS

AES16

PCI card offers direct connectivity via PC or Mac to all 16 digital I/O channels with remote control. Includes Aurora software mixer for added routing and 64 channels of metering.

LT-ADAT

Expansion card provides up to 16 channels of ADAT Lightpipe I/O at 48 kHz. Higher sample rates supported using S/MUX. Permits format conversion between ADAT, AES/EBU and analog I/O.

LT-HD

Expansion card provides digital input and output in a format that is recognizable by Digidesign® ProTools | HD®. Operates with all HD-compatible ProTools systems. Supports up to 32 I/O channels at sample rates to 192kHz.

LT-FW

Expansion card available Fall 2006. LT-FW provides a 16 channel cross platform FireWire® interface.

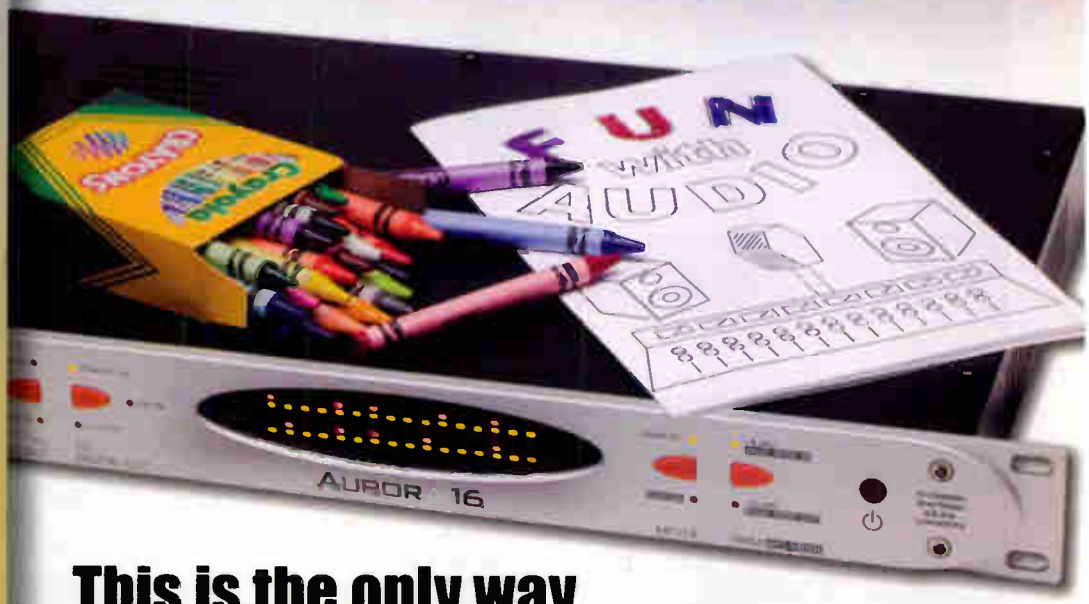
LYNXTWO-AURORA INTERFACE

Cabling kit gives LynxTWO and Lynx L22 owners direct connectivity for up to 16 channels of Aurora I/O.

1824 AURORA TRIM OPTION

Aurora 16/1824 and Aurora 8/1824 models feature +18 dBu and +24 dBu full scale trim settings, which replace the +6 dBV and +20 dBu full scale trim settings of standard models.

If you're looking for coloration from an Aurora Converter



This is the only way you're going to get it.

When we designed the Aurora 16 and Aurora 8 AD/DA converters, we had a simple goal. Converters with clear, pristine, open sound and no coloration or artifacts. We wanted you to be able to get the identical audio out of Aurora converters that you put into them. From what we have heard from you and the major magazines, that's what we have accomplished.

Aurora includes no compression, no limiting, no equalization. No coloration. Why?

First, if you want or need coloration, you already have that handled. You have carefully selected your signal processing, which you can add to the signal chain at any point you like, or leave it out altogether.

Second, how would we know what processing would fit your needs and your tastes? We could nail it for our tastes and for a few of our friends, and completely miss what you want.

Third, we wanted to build the best possible AD/DA converter – period, not a converter/signal processor/preamp/exciter. Adding these functions would add the price of Aurora, for features you may not want or need.

Instead we packed in features such as our exclusive SynchroLock™ word clock, LSlot expansion port for optional interfaces, and exclusive remote control options into a single rack space format. And, most importantly, world-class audio quality that rivals converters costing many times the price.

Aurora 8 and Aurora 16 from Lynx Studio Technology. We'll handle the conversion and leave the coloring up to you.

Want more information (like there's not already too much in this ad)? Go to: **www.lynxstudio.com/aurora 1**

Lynx STUDIO TECHNOLOGY

Digital Live Consoles, 40-Plus Channels

Product / Website	System Hardware Type	Channel Faders	Inputs	Output Buses	Max. Resolution	Notes
Allen & Heath iLive www.ilive-digital.com	Controller and DSP-I/O rack	28-44	64-128	32-64	24-bit/ 48kHz	Priced from $50,000. Typical iLive 144 system wth 36 faders, 48 stage mic inputs, 16 local inputs, 32 assignable buses (group/aux/main/matrix) and dual PS is $55,000. EtherSound connection to stage box.
Cadac S-Digital www.cadacsound.com	Controller and DSP-I/O rack	20-144	72-144	66	24-bit/ 48kHz	Control surface based on layout of Cadac's J-Type analog console. Configurable for single or multiple operators. SAM show control software with offline pre-show prep capability.
DiGiCo D5 Live www.digiconsoles.com	Controller and DSP-I/O rack	24	64-128	40	24-bit/ 48kHz	Priced from $70,000 to $243,000; Typical system is $144,000 with controller, DiGiRack stage box (56 mic/line ins, 8 line outs) and local DiGiRack (8 ins/8 outs, plus AES digital stereo). Dual PS. MADI or fiber interfacing to stage.
DiGiCo D1 Live	Controller and DSP-I/O rack	16	64-160	40	24-bit/ 48kHz	Priced from $55,000 to $120,000. Compact controller has 16 input faders and 8 output faders that can be defined as groups, matrixes or aux outs. MADI or fiber interfacing to stage.
Digidesign VENUE D-Show www.digidesign.com	Controller and DSP-I/O rack	8-56	48/96	48/96	24-bit/ 48kHz	Can connect directly to Pro Tools HD and LE systems for recording. Supports TDM plug-ins for a wide range of DSP options. Eight additional I/Os on FOH rack. Dual PS standard. Redundant system is $69,995.
Digidesign VENUE D-Show Profile	Controller and DSP-I/O rack	24	48/96	48/96	24-bit/ 48kHz	Designed for smaller installs, is compatible with all VENUE hardware/software and connects directly to Pro Tools HD and LE systems for recording. Supports TDM for DSP options. Dual PS standard. Redundant system is $54,995.
Harrison Trion Alive www.harrisonconsoles.com	Integrated console/ remote I/O	16-64	64-128	32-64	24-bit/ 96kHz	Priced from $155,000, Trion runs on Harrison's IKIS platform. Optional 8-fader panel/screen allows control of FOH or monitor mixes from anywhere in venue. PreView™ gives 20-second waveform view of any source.
InnovaSon Sy48 www.innovason.com	Controller and DSP-I/O rack	64	48-72	16-40	24-bit/ 48kHz	Fader-per-channel design; typical Sy48 "Evolution" package (48 mic ins/16 EtherSound outs) is $63,000.
InnovaSon Sy80	Controller and DSP-I/O rack	80	56-104	32-56	24-bit/ 48kHz	Fader-per-channel design; typical Sy80 "Evolution" package (64 mic inputs/32 outputs, plus 8 digital I/Os) and Muxipair bidirectional cabling to/from Stage/Mix box is $154,000.
Lawo mc²66 www.lawo.de	Controller and DSP-I/O rack	16-72	512	144	24-bit/ 96kHz	Up to 8,192-point crosspoint switching; 32 aux sends; retail is $120,000, depending on configuration.
Lawo mc²90	Controller and DSP-I/O rack	16-192	512	144	24-bit/ 96kHz	Up to 8,192-point crosspoint switching; Star2 topology for total redundancy.
Meyer LCS Matrix 3/CueMixer www.meyersound.com	Controller and DSP-I/O rack	8 and up	8-152	16-304	24-bit/ 48kHz	LCS/Level Control Systems now owned by Meyer Sound. Modular system combines multiple 8-channel Matrix 3 LX300 audio engines under CueStation software control.
Midas XL8 www.midasconsoles.com	Integrated console/ remote I/O	72	96 mic/ 16 line	51	24-bit/ 96kHz	Open architecture/cross-platform system; MidasNet protocol over Ethernet for sub-millisecond latency, redundant routers, distributed pathways, dual stage boxes for fail-safe operation.
Soundcraft Vi6 www.soundcraft.com	Controller and DSP-I/O rack	32	64	32	24-bit/ 48kHz	Vistonics II touchscreen TFT monitor interface with integral thru-screen rotary controls and FaderGlow illuminated fader markings. Vi6 system (controller, stagebox and DSP-I/O rack) approximately $90,000.
Stagetec Aurus www.stagetec.com	Controller and DSP-I/O rack	Up to 96	300	256	24-bit/ 96kHz	Uses Nexus Star digital audio routing/interconnect system found in Stagetec's Cantus console, with optical interconnect.
Studer Vista 8 www.studer.ch	Controller and DSP-I/O rack	22-72	48-128	48	24-bit/ 96kHz	Vistonics interface with TFT screens combined with thru-screen rotary controls. Custom-configurable I/O complement determined by DSP cards in the core unit. Typical FOH pricing $200,000 to $350,000.
Studer Vista 5	Controller and DSP-I/O rack	32	240 max	52	24-bit/ 96kHz	Compact worksurface and six-rackspace SCORE DSP engine. One-knob-per-function design and Vistonics interface offer fast operation. FOH pricing typically $125,000 to $175,000.
Yamaha M7CL-48 www.yamahaca.com	Integrated console	52	56	16	24-bit/ 96kHz	Has 48 mono mic inputs, 4 stereo inputs and 3 mini-YGDAI slots for a total of 56 mix channels. Four simultaneous onboard effects processors. Price is $24,999. Options include dual PS.
Yamaha M7CL-32	Integrated console	36	30	16	24-bit/ 96kHz	Has 32 mono mic inputs, 4 stereo inputs and 3 mini-YGDAI slots for a total of 40 mix channels. Four simultaneous onboard effects processors. Dual PS optional.
Yamaha PM5D	Integrated console	24	48	39	24-bit/ 96kHz	Has 64 total mix channels (48 mono, plus four stereo inputs and four stereo effects returns). Onboard effects include eight independent SPX-2000–class processors. Price is $49,800. Dual PS optional. New DSP5D expander doubles the console's I/O capability.
Yamaha PM5D-RH	Integrated console	24	48	39	24-bit/ 96kHz	Version of PM5D with recall of preamp gain settings and preamps based on PM5000 design. Has 48 mono mic inputs, plus 4 stereo inputs that accept mic-level signals. Onboard effects include 8 independent SPX-2000–class processors. Price is $67,000. Dual PS optional.
Yamaha PM1DV2/DSP1D	Controller and DSP-I/O rack	56	56/112	32	24-bit/ 96kHz	Second-generation PM1D features 48 motorized mono input faders (plus 4 stereo inputs). Base price for 48-input system is $86,000. Dual PS optional. Optional DSP1D-EX unit can expand system for full 96-input operation. System allows full dual-DSP mirroring for total redundancy.

The Revolution continues...

36 Channel, 24 Bit/192kHz Bus Powered FireWire Audio Interface

Fireface 400

RME
www.rme-audio.com

Another killer from RME: The Fireface 400 is the only device in its class with two digitally controlled Mic Preamps with rotary encoder and front panel display, active jitter suppression, stand-alone functionality, off-line MIDI remote controllability, 32 channels of MIDI, highly flexible I/Os in professional quality, and an unsurpassed 648-channel matrix router - at sample rates up to 192 kHz.

Furthermore, RME is the only manufacturer to create their own firewire chips which allows them to add amazing features not found in any other firewire products on the market. RME firewire interfaces are simply the Best in Class!

Fireface 800

Join the RME today!

Visit us at NAMM, Booth # 6915

synthax.com

Distributed by:
info@synthax.com
V: 330.259.0308

TEC 2005 NOMINEE
MIX CERTIFIED hit
Electronic Musician 2006 EDITORS CHOICE

including:
samplitude se
www.samplitude.com

New Sound Reinforcement Products

MACKIE QUAD SERIES PROCESSORS

Mackie's (www.mackie.com) Quad Series digital processors offer 24-bit signal purity with user interfaces designed for live sound. The Quad EQ ($1,199.99) is a 4-channel/30-band digital graphic equalizer that combines onboard SIA Smaart real-time analysis (RTA) and SPL metering. The front panel's 31 bi-color LED ladders let users view RTA and EQ settings simultaneously for visual reinforcement of EQ changes and their effect on the sound system. Quad EQ includes a reference mic for RTA and SPL monitoring, A/B/C-weighted SPL metering, built-in pink-noise generator, XLR and TRS analog I/Os and 99 user snapshots to store settings. The $999.99 Quad Comp/Gate has four channels of compression/limiting and expansion/gating with faster attack settings, 99 user presets, built-in key filters, a Key Listen feature and an Auto mode to eliminate pumping effects.

L-ACOUSTICS SB15P SUBWOOFER

A companion for L-Acoustics' (www.l-acoustics.com) new P Series self-powered coaxial loudspeakers, the SP15B subwoofer has a front-loaded, self-powered 15-inch woofer with the convenience of pushbutton-accessible, application-engineered DSP crossover filtering and system EQ presets. The 17.5x20.5x20.5-inch (HxWxD), 80-pound vented Baltic birch enclosure features 1,000 watts of internal Class-D amplification, a 45-100Hz (± 3dB) bandwidth, and pole-mount or U-bracket rigging.

SLS RLA/4 LINE ARRAY

SLS Loudspeakers (www.slsaudio.com) intros the RLA/4 a full-range, bi-amped true line source array module. The bi-amplification–ready RLA/4 has a PRD500 planar ribbon transducer handling highs; the low section has twin 6.5-inch die-cast woofers with a patented Intercooler system. Horizontal coverage is 90 degrees, and SLS' free LASS prediction software visually indicates ideal set-up locations for even, predictable coverage of any room. All array rigging is included on the cabinet that is made from sturdy ¾-inch, 13-ply Baltic Birch and includes splay options from 1 to 10 degrees between boxes.

WORXAUDIO V8-PMD1 LINE ARRAY

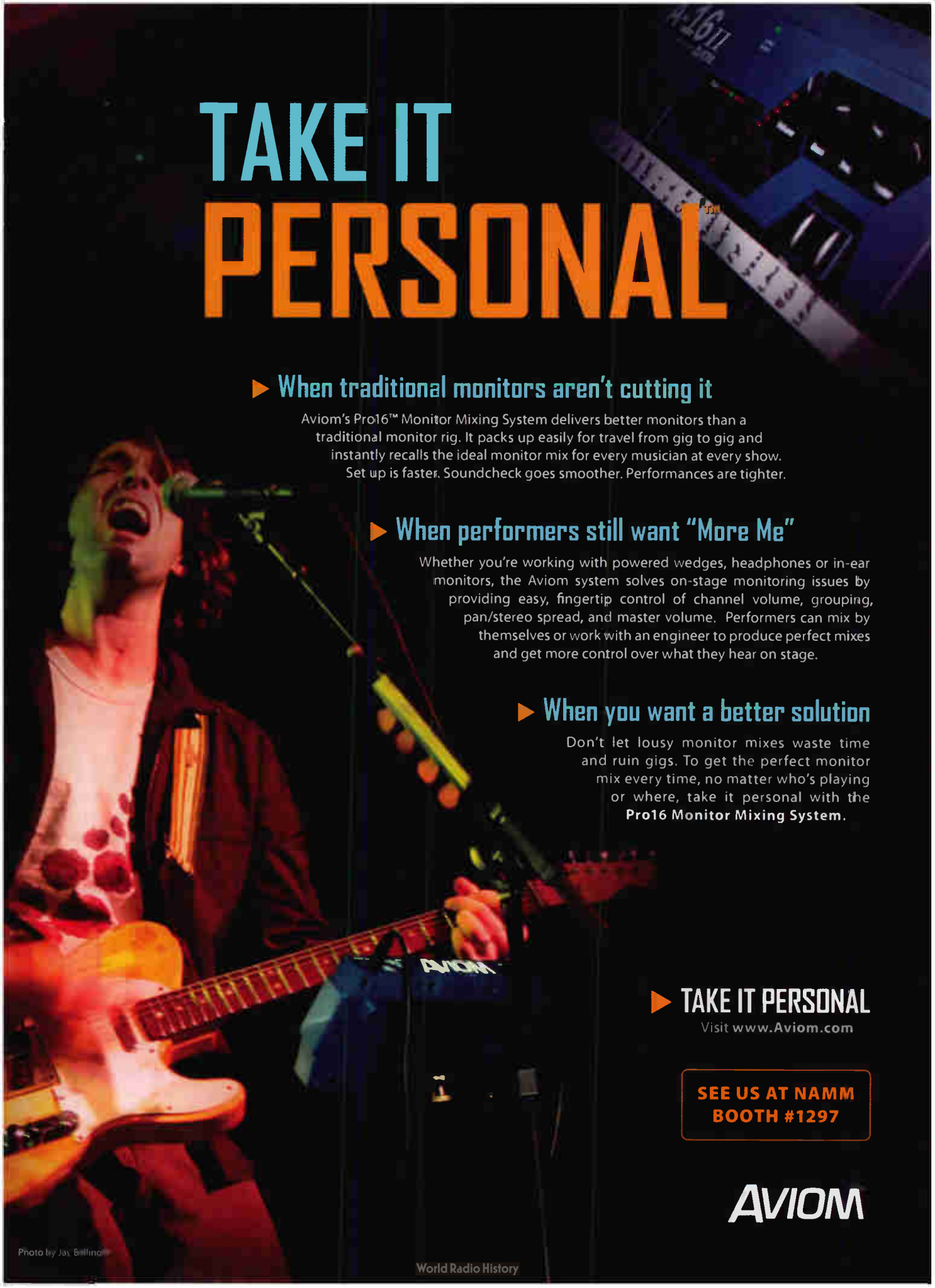
The V8-PMD1 ($6,822) powered touring line array from WorxAudio Technologies (www.worxaudio.com) is a compact, high-efficiency system with DSP and integrated bi-amping (500 and 250 watts). Dual 8-inch woofers on the A.I.M.™ (Acoustic Intergrading Module) combine with a large-format (3-inch voice coil) compression driver on a FlatWave™ Former wave-shaping device for clear highs over a controlled coverage area. The multi-ply Baltic birch cabinet is finished in dark gray or black-catalyzed polyurethane with a steel grille. The array includes TrueAim™ rigging hardware with 1-degree increments for flying or ground-stacking.

AVIOM AN-16SBR SYSTEM BRIDGE

Aviom's (www.aviom.com) AN-16SBR combines up to four Pro16 A-Net streams onto a single Cat-5e cable, supporting 64-channel systems in a variety of bidirectional configurations for use when digital snake and audio distribution systems larger than 32 channels are required. One AN-16SBR is used at each end of each 48- or 64-channel run. Configurations of 64x0, 48x16, 32x32 or smaller are supported. The System Bridge includes two identical rack modules, each with four Neutrik EtherCon connectors (16 channels each) and one Neutrik EtherCon connector for Bridge output (up to 64 channels). Multiple AN-16SBRs can create complex systems with one AN-16SBR at the end of each main run to combine or separate up to four 16-channel A-Net streams. The Aviom System Bridge does not require a power supply nor DC power.

PEAVEY PCX U1002 WIRELESS

Note: The following product was inadvertently omitted from the November 2006 feature on wireless systems. Here's what you missed: Offered in handheld, beltpack and guitar versions, the 100-channel, true-diversity Pro Comm PCX U1002 UHF wireless from Peavey (www.peavey.com) offers AutoScan technology that automatically searches for noninterfering channels. The compact, half-rack PCX U1002 receiver has XLR and ¼-inch outputs, and a color LCD panel showing operational status at a glance.


TAKE IT
PERSONAL
When traditional monitors aren't cutting it
Aviom's Pro16™ Monitor Mixing System delivers better monitors than a traditional monitor rig. It packs up easily for travel from gig to gig and instantly recalls the ideal monitor mix for every musician at every show. Set up is faster. Soundcheck goes smoother. Performances are tighter.
When performers still want "More Me"
Whether you're working with powered wedges, headphones or in-ear monitors, the Aviom system solves on-stage monitoring issues by providing easy, fingertip control of channel volume, grouping, pan/stereo spread, and master volume. Performers can mix by themselves or work with an engineer to produce perfect mixes and get more control over what they hear on stage.
When you want a better solution
Don't let lousy monitor mixes waste time and ruin gigs. To get the perfect monitor mix every time, no matter who's playing or where, take it personal with the Pro16 Monitor Mixing System.
TAKE IT PERSONAL
Visit www.Aviom.com
SEE US AT NAMM
BOOTH #1297
AVIOM
Photo by Jay Brillinger
World Radio History

—FROM PAGE 86, SYSTEM PROTOCOLS

the second 9088iis to a third, forming an audio ring in which eight audio channels travel from the first unit to the last and back. Along the way any device can either pass an audio channel from the previous unit or replace an audio channel with a new input. More complex systems may be created by adding a Soundweb 9000iis hub, which provides six network jacks, each of which can route eight bidirectional channels.

Developed by Cirrus Logic, CobraNet™ (www.cobranet.info) delivers digital audio in real time using standard 100Mbps Ethernet controllers, hubs and cabling. CobraNet has the ability to route 64 channels of bidirectional audio with 20-bit/48kHz resolution (128 channels) on a single Cat-5 cable. Gigabit Ethernet links provide an increased channel count. Audio may be sent distances of 100 meters via Cat-5 copper and as far as two kilometers using multimode fiber. CobraNet software can route any audio input to any audio output on the network.

CobraNet transmitters and receivers buffer audio data into Ethernet packets with a latency of approximately 5 ms, independent of A/D and D/A conversion. CobraNet software runs under Windows and includes CobraCAD™ system design software, Discovery monitoring and maintenance tools, and DSP Conductor™ for software developers.

The IQ Network from Crown (www.crownaudio.com) is an Ethernet-based communication protocol for remote control and monitoring of power amplifiers, digital signal processing, automated mixing and signal routing. Unlike most networks, IQ provides digital control over analog audio. Crown power amps accepting PIP (Plug-In Processing) modules facilitate connection to the IQ network. The PIP Lite card may be connected to the same network used to pass CobraNet audio. IQ for Windows running on a host PC enables control and monitoring of the system from a central location and is available as a free download.

Developed by Digigram, EtherSound (www.ethersound.com) uses standard Ethernet hardware to provide real-time transmission of digital audio and control data. EtherSound ES-100 audio transport employs a 100Mbps network to route up to 64 channels of uncompressed digital audio at 24-bit/48kHz resolution on a single Cat-5 cable. EtherSound ES-Giga System Transport uses a 1Gbps dedicated network to route as many as 512 channels of 24-bit/48kHz audio. Both systems route synchronous bidirectional audio, support a variety of sample rates and can employ existing infrastructure. Each EtherSound network channel is capable of transmitting one 24-bit/48kHz audio channel. Higher sample rates such as 96 or 192 kHz require use of two or four EtherSound channels, respectively, and sample rates may be mixed in any combination up to the number of maximum supported audio channels.

"Different networks are all great for what they were intended to do... but if you try to take them beyond their original intentions, they start to reveal limitations or problems."

—*Bob Moses*

Digigram claims a latency of 104 microseconds in an EtherSound network. A built-in clock-recovery system maintains extremely low jitter, preserving audio quality over distances as far as 100 meters (longer when using fiber optics). End-to-end transmission time for a signal over an EtherSound network is approximately six samples.

Developed with Cirrus Logic, Gibson's (www.gibson.com) MaGIC features up to 32 bidirectional channels of 32-bit/48kHz uncompressed audio with support of sample rates up to 192 kHz. MaGIC transmits MIDI, video, control information and home automation data. Using standard Cat-5 cable and RJ-45 connectors, MaGIC's latency is 250 µS end-to-end across a 100-meter network. The system may be used in freestanding or host-based modes, and is currently the only audio network capable of distributing DVD-A format data.

HiQnet™ from Harman (www.hiqnet.harmanpro.com) was developed to provide a common network protocol for products from the company's group. It supports 64 channels of streaming audio at sample rates up to 96 kHz, plus Ethernet, USB, serial control and CobraNet audio—all using standard Ethernet hardware. A HiQnet system is managed using Harman Pro's System Architect software, allowing a user to address all links in the chain from a single application running under Windows. System Architect enables configuration and control over products that include AKG WMS 4000 wireless mics; Crown CTs and Macro-Tech Series amps with PIP Lite, USP3 or USP3/CN cards installed; dbx DriveRack 4800 and 4820; JBL VerTec DP and VP Aeries loudspeakers; and Studer Vista 8 and Soundcraft Vi6 digital consoles.

Some of the capabilities of HiQnet include load monitoring and protection of Crown I-Tech and CTs Aeries amps, monitor and control over signal routing and processing using dbx DriveRack 4800, and creation of customized control panels for any attached device from the touch screen of the Studer Vista 8.

Peavey's MediaMatrix (http://mediamatrix.peavey.com/home.cfm) was introduced in 1993. Central to MediaMatrix is MWare and XWare software apps, which let an engineer design an audio system using simple block diagrams. Once the diagram is complete, MediaMatrix translates the diagram into digital processing information. This file may be saved as a Peavey Architectural View (.pav) file and uploaded to a MediaMatrix "frame" processor.

Analog sources are patched to an MM-8800™ Series digital interface or Break-out Box (BoB) for A/D conversion at 24-bit resolution and 32, 44.1 or 48kHz sample rates. Digital audio is then routed via 100Mbps Ethernet to a unit such as the Mainframe 760nt or Miniframe II, in which a DSP farm performs mixing, routing, EQ, compression and crossover. After processing, the signal may be sent back into the BoB for conversion and distribution. Peavey recently announced it had licensed EtherSound networking technology. MediaMatrix products such as the CAB™ 8 and CAB 16 Series employ CobraNet protocol and provide a means of interfacing MediaMatrix with CobraNet across a 100Mbps Ethernet network.

The RAVE—Routing Audio Via Ethernet—audio network from QSC (www.

PRODUCTION | **THE PROFESSIONAL'S SOURCE**

real world solutions from industry professionals!

www.bhproaudio.com

800-947-5508 | 420 Ninth Ave, New York 10001 | We Ship Worldwide

B&H PHOTO - VIDEO - PRO AUDIO

qscaudio.com) uses Ethernet hardware for transport of digital audio. A system can route 64 uncompressed audio channels at 48 kHz with 16/20/24-bit resolution on a 100Mbps network. RAVE employs CobraNet technology.

The network is built around QSC's RAVE devices, each capable of handling 16 channels; these may be configured at the front panel or via PC software. A variety of RAVE units are available, such as the RAVE 161s-24 (16 analog inputs) and RAVE 88s (eight AES/EBU digital I/Os), enabling analog and digital I/O to the network. System latency is stated as 5.33 ms. Rear panel BNC connections let RAVE devices sync to external clock, and it is possible to parallel two RAVE units.

REAC—Roland Ethernet Audio Communication (www.rssamerica.com) from Roland—was developed as a means of addressing the signal degradation inherent to analog multipair in live sound applications. Its advantages include plug-and-play operation (no configuration necessary) and, as the stage box contains the mic preamps, audio is amplified at the source and transported in a high-quality digital format, eliminating the audio signal losses inherent in analog snakes and providing immunity to induced hums and buzzes. The REAC S-4000S-3208 is a 40-channel (32x8) stage box I/O rack transmitting 24-bit/96kHz uncompressed digital audio with a latency of 0.375 ms. Information is carried along with remote control and MIDI data via Ethernet on a standard Cat-5 cable.

The S-4000H 32x8 FOH unit sits alongside the house mixing console, receiving REAC data and converting it to analog audio. A remote S-4000R controller gives the house engineer remote control of the stage gain, pad and phantom-power settings. Cable runs of 100 meters are possible directly between the stage box and FOH units; this distance may be extended another 100 meters by adding a standard switched hub or to several kilometers when converted to optical data using standard fiber-media converters. By using multiple S-4000H and S-4000S units, larger networks such as 64x16 or 96x24 may be created. Standard Ethernet hardware may be used to digitally split the stage audio source signals. The REAC audio can also directly interface with a computer using a standard Ethernet port.

Yamaha's (www.yamahaca.com) mLAN music Local Area Network was designed for MI and pro audio. mLAN is a high-speed transfer protocol based upon FireWire IEEE 1394 and supports simultaneous transmission of multichannel digital audio, MIDI and control data. Any computer with a FireWire port running Windows or Mac OS can access mLAN, routing up to 150 channels of 24-bit/48kHz digital audio on a FireWire 400 bus and approximately double that number using FW800. (Current mLAN transfer rate is 200 Mbps.) mLAN devices can be hot-plugged, with communication automatically re-established when a device is reconnected to the bus. Though a PC may be part of the network, it is not required to operate devices.

mLAN may be used with any sequencer or DAW supporting ASIO drivers, Apple Core Audio and Core MIDI, and any app that uses WDM stereo audio. MIDI and audio signal flow may be configured via software and configurations are stored for instant recall. ■

Steve La Cerra is Mix magazine's sound reinforcement editor.

SCHOOL OF: COMPUTER ANIMATION > DIGITAL ARTS & DESIGN > ENTERTAINMENT BUSINESS > FILM > GAME DEVELOPMENT > RECORDING ARTS > SHOW PRODUCTION & TOURING

ONE OF THE FIVE BEST MUSIC PROGRAMS IN THE COUNTRY

— *Rolling Stone Magazine*
August 11, 2005

FULL SAIL
Real World Education

800.226.7625
fullsail.com
GET STARTED

If you're serious about your dream, we'll take your dream seriously.

3300 University Boulevard • Winter Park, FL 32792
Financial aid available to those who qualify • Career development assistance • Accredited College, ACCSCT

Conflagrations and Claustrophobia

Sound for Clint Eastwood's Stirring Iwo Jima Diptych

By Blair Jackson

Now in his mid-70s, director Clint Eastwood continues to amaze and provoke. His latest artistic (and critical) triumph is a pair of films about the pivotal World War II battle of Iwo Jima. *Flags of Our Fathers*, released in October, was a deft look at both the intense battle and its aftermath for three of the "heroes" who were part of the world-famous Iwo Jima flag-raising photo and then pressed into service by the government to sell war bonds across the U.S. And the just-released *Letters From Iwo Jima* (which won the National Board of Review's honor for Best Picture of 2006) presents the brutal battle from the Japanese perspective: It follows soldiers and their commanders into the island's extensive network of caves and underground bunkers as they try to withstand an Allied assault that lasted more than a month; it's almost entirely in Japanese with subtitles. Together, the films offer a powerful glimpse into the psychology of war: the fear and anxiety, the pride, the brotherhood, the bravery and heroism, the guilt—the whole gamut.

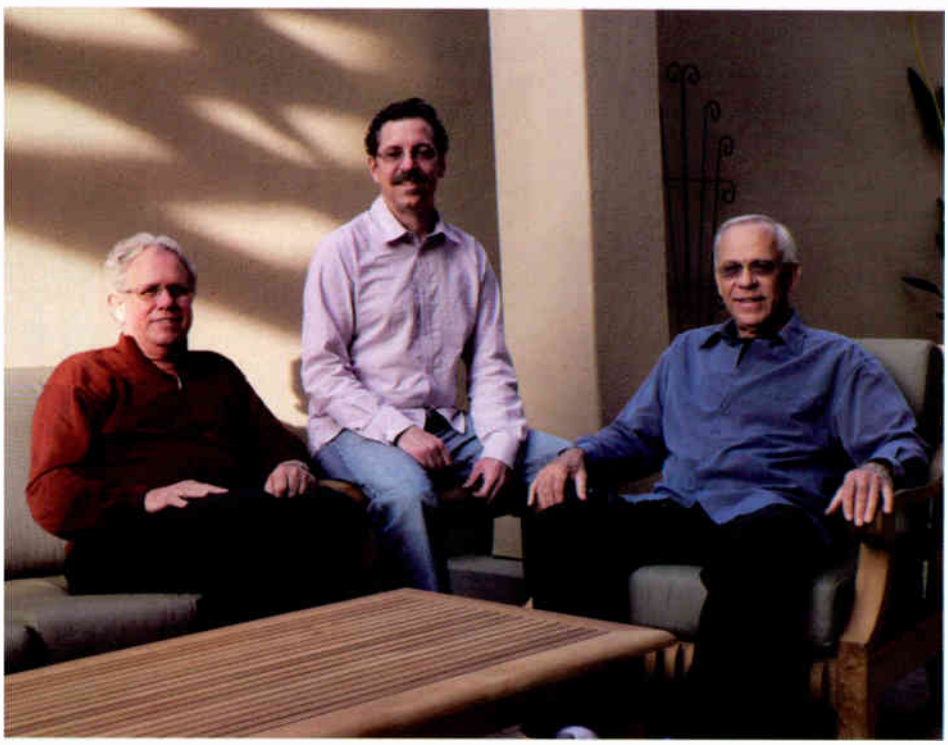
Eastwood is famous for fostering a creative and familial atmosphere on his film sets, and he inspires fierce loyalty from the craftspeople who toil away behind the scenes, including his top-notch sound crew, most of whom have worked with the director for many years. Chief among that group are co-supervising sound editors Alan Murray and Bub Asman, both of whom worked as sound editors on the Eastwood vehicle *Escape From Alcatraz* (directed by Don Siegel) in 1979, and on Eastwood-directed films since the 1980 *Bronco Billy*. The team that mixed the Iwo Jima films at Warner Bros.' Stage 10, on one of the new AMS/Neve DFC Gemini consoles, also has a long history with Eastwood: Gregg Rudloff (effects), John Reitz (dialog) and Dave Campbell (music) have all worked on many Eastwood films. (The mixing trio shared a Best Sound Oscar for *The Matrix* in 1999, and were nominated for *The Perfect Storm* in 2000. Rudloff also won for *Glory* in 1989.)

Though Eastwood is a director of great vision and is definitely not shy about sharing his opinions on matters large and small, Rudloff notes that when it comes to sound, "Clint gives you the blank canvas. He has a lot of faith in the people he uses, and with Alan [Murray's] history of having been with him for so many years, he knows the direction he likes and you learn what his tastes are, so you're working with that in mind from the start. It's not like working with a new director and you have to figure out, 'Does this guy like to hear birds? Does he like the music loud?'"

It would be inaccurate to call the sonic approach to *Flags* and *Letters* as "documentary," as there are numerous interesting and creative sound design moments. But certainly Eastwood was looking for a gritty realism in both films' copious battle scenes. The verisimilitude started with good effects recordings, which were helmed by Murray, sound designer Charles Maynes and noted effects recordist John Fasal.

For Maynes, whose resume includes such films as *U-571*, *Lara Croft: Tomb Raider* (both earned him Golden Reel nominations for sound editing), *Spider-Man* and *Fantastic Four*, *Flags of Our Fathers* was a film he felt he *had* to work on: "I had just done *The Alamo* and *The Great Raid*, which I had done the battle sequences for, and I was actually over at Fox working on *Fantastic Four* when I heard that Eastwood was going to be directing *Flags of Our Fathers*. I had never met Alan before, but I cold-called him when I heard he was doing *Flags*. I explained that my dad was a career Marine and grew up on or around bases. It's a real close subject to me. It turns out his father fought at Iwo Jima—he was a tank driver. At that point, we didn't know there was going to be the second film yet."

Indeed, *Letters From Iwo Jima* was shot well after *Flags* and with a much lower budget. Whereas the battle scenes in *Flags*



Flags of Our Fathers/Letters From Iwo Jima *mixers, from left: John Reitz (dialog), Gregg Rudloff (effects) and Dave Campbell (music); all have worked on numerous Clint Eastwood films.*

PHOTO: MERLE W. WALLACE, SMPSP

The sound crew captured a more "claustrophobic" music sense for Letters From Iwo Jima.

were mostly shot in Iceland—an appropriately desolate double for Iwo Jima—*Letters* was shot outside of Barstow in Southern California, where there were numerous caves and old mines, as well as dark, volcanic soil that matched the look of the real South Pacific island.

"ON LOCATION" WITH WAR MACHINES

Murray did extensive research into the weaponry, planes and vehicles that were involved in the battle, and then he, Maynes and Fasal set about recording them. "In L.A., the two dominant shops where you can find just about any kind of weapons are ISS—Independent Studio Services—and Gibbons Limited," Maynes says. "They have literally thousands of weapons, spanning from flintlocks all the way up to the most modern stuff." The Marine base at Twentynine Palms in the Mojave desert east of L.A. provided the setting for recording vehicles, heavy artillery and explosions. Locations in Paso Robles were employed for the World War II aircraft. Weapons fire was captured in a couple of sessions in Burro Canyon and other locales closer to L.A.

"John, Alan and I went out on all the weapons shoots," Maynes continues. "The machines we used were the 744 Sound Devices—the 4-channel [digital] recorder; John had two of those and I tend to take out two, as well. Then John, myself and Alan had four FR-2 Fostex machines, and John also brought his older Nagra, which he really likes. I've sort of lost my enthusiasm for that because of the noise floor. But I think the Sound Devices sounds really good. All the digital stuff was recorded at 96k. As for mics, well, we used everything you can imagine: Sennheiser 416 and 816 [shotguns]; I think we had an MKH-70 [Sennheiser long shotgun] out and I use a Sanken CSS-5 [stereo shotgun], too. Dynamics pretty much ran the gamut from SM57s out to the Shure B52s and the Sennheiser 441s. We were also using Crown SASS heads, which are really nice, and John had a wide array of mics, as well, including DPAs and some of the newer high-res Sennheisers."

As is typical of these sorts of sessions—which employed up to 20 channels—shots, whiz-bys and impacts were covered from multiple angles and distances. The effects were then moved over to a Mac and eventually delivered to the stage (Steve Pederson mixed some of the battle predubs) as Pro Tools files at 48 kHz, "which reduced the volume of space that was required," Maynes says. One of the bigger challenges was "this very, very large-caliber mortar the Japanese used, which projected a shell that was 250 pounds. They called it the 'flying dust bin' [garbage can]. There aren't any of them that are still working, so that became a design project. We had artillery elements for the shell traveling through space, and for the actual projection of it, we

PHOTO: © 2006 DREAMWORKS LLC AND WARNER BROS. ENTERTAINMENT INC.

Marines storm the beach in Flags of Our Fathers

PHOTO: © 2006 DREAMWORKS LLC AND WARNER BROS. ENTERTAINMENT INC.

Marines travel across the desert while large-caliber mortars pound the earth in Flags of Our Fathers

used a mix of some of the field artillery we had recorded, as well as some mortars I had recorded for [the videogame] *Call of Duty*, which were then digitally processed."

"In general, though," Murray says, "we wanted to remain truly authentic to the weapons and the battle." That sentiment also carried over to the ambiences that were developed for the scenes on the war bond tour. "It was important that the trains and traffic and all the details be authentic," he adds. "Fortunately, I've done a lot of period pictures, so I have a pretty big library to draw from for that. Also, [in *Flags*] there's a lot of sound design flashback material that we had to come up with, too. For that, we used a lot of low-end tonal things, making you feel the effect of going in and out of the war [as the scenes shift from battle flashbacks to the bond tour]. We have things like mortars coming out of thunder, and the sound of the waves washing out the [dead] Marines and then turning that into a sound to bring us *out* of the war."

DIFFERENT FILMS, DIFFERENT FEELING

Asked about differences in tone between the two films, Rudloff offers, "In *Flags of Our Fathers*, the battle scenes are much more open and large in scale. The action in *Letters* has some big moments, like when the Allied planes come in and attack their camp, but much of it is much more claustrophobic in nature, and we were trying to impart the terrific stress these [Japanese] soldiers were under because they had no relief from the bombing. One of the most challenging aspects for us in *Letters From Iwo Jima* is because the invasion takes place fairly early

PHOTO: CHARLES MAYNES

Japanese machine guns and other small arms were captured from multiple angles in a canyon east of Los Angeles by the recording team of Charles Maynes, John Fasal and Allan Murray.

Ready to Rock. Right Out of the Box.

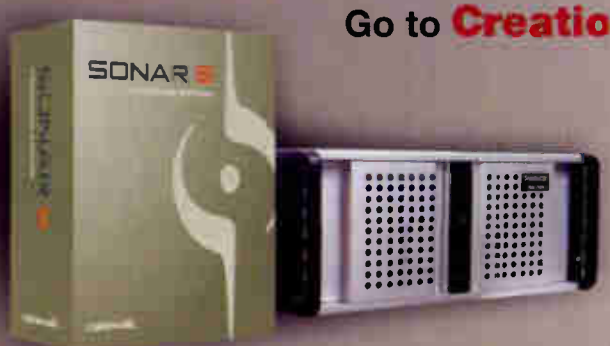
Sweet Music.

A powerful triple-threat: the custom-configured **Sweetwater**® Creation Station audio PC with **Intel**® dual-core technology and **Cakewalk**® SONAR 6 software, featuring a native 64-bit audio engine. Enjoy unmatched music creation tools and sonic clarity with the horsepower to flawlessly handle all your plug-ins, tracks and virtual instruments.

Sweet Deal.

- Exclusive package offer starts at $2,299 and includes the **FREE Musician's Toolbox IV** (a $199 value).
- Go online for more about the ultimate system for making music, and download our **FREE exclusive Sound Kit**.
- Plug in to the **Creation Station Idea Center** for great tips and techniques from the experts, artist interviews and industry buzz.

Go to CreationStationIdeaCenter.com/mix now!



Sweetwater music technology direct™ cakewalk intel Core Duo inside

PHOTO: MERLE W. WALLACE, SMPSP

Clint Eastwood (left) and Ken Watanabe on the Letters From Iwo Jima set

in the movie, you then have to continue this battle for the entire duration of the film. There are moments of utter chaos where the soldiers are enduring the bombardments in the caves and wondering if the caves are going to collapse around them, and other moments where we're trying to be more intimate with characters and you don't want an in-your-face battle going on. At the same token, you can't let the audience forget we are in a major battle. So a lot of care was taken with varying the sound of the battle depending on the setting and what was happening in the scene. The quality of the recordings Alan got for the distant battle [sounds], whether it was small-arms fire or the artillery, or what we refer to as 'crumps,' which are distant explosions, add incredible texture and emotional feel to the movie."

"We also had to feature different depths in the tunnels," Murray adds, "so when we were with the [Japanese] generals, we wanted the battle to be omnipresent, but not a threat really. So we had different levels of where the battles were."

Dialog mixer John Reitz had worked on foreign language prints of major Hollywood films before, but never on one that is mainly in Japanese to begin with. Did it change how he worked? "Yes, because there are certain things you do routinely in an English-language show that I couldn't do here. There are certain little 'esses' and things I would normally take out or work with, but you have to be really careful on the Japanese dialog because I couldn't understand it."

Rudloff adds, "The technical aspect of what John was doing with the dialog was the same, as far as cleaning up the noises that are inherent in making a movie—camera noise, generators, lights, things like that. But creatively that's where we had our greatest concern, because when you're dealing with English, you not only understand the words, you understand the meanings behind them. In *Flags*, when we're in the middle of a huge battle scene, to help convey the chaotic nature of battle, we were not allowing the audience to understand all the words. Even though a lot of people are yelling, you're only able to pick out a word here or there. But knowing the language, we knew which words were important to understand. In the like situation in *Letters*, we couldn't do that. What we did was we had Japanese interpreters there in the process of making the movie—both before it ever reached the mix stage, and then once we mixed the movie—we played it for a Japanese interpreter. And we also had a couple of gentlemen from Warner Bros. Japan here, and they watched the entire movie and

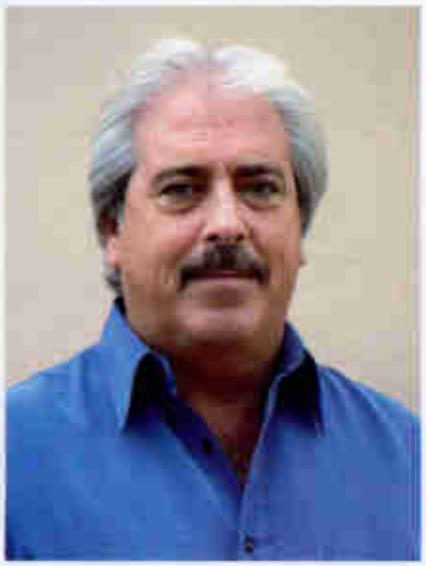
PHOTO: CHARLES MAYNES

A P-51 Mustang on the tarmac is about to surrender its engine noise for the sound team.

they were able to tell us if they had any issues with the language."

THE EASTWOOD INFLUENCE

Fitting in the music for the films was relatively straightforward for mixer Dave Campbell, made even easier by the fact that it was scored by Eastwood himself—the director is a well-known jazz aficionado and has frequently been involved with scoring his past films. "We played everything he wrote," Campbell says with a chuckle, "and then he had the choice of what to leave in and what to take out. But it was such a minimalist score; it was very simple for me. It was done by Clint and his son, and their friends, and developed at home. They had worked it out about 90 percent before it was given over to Lennie Niehaus [who has composed for



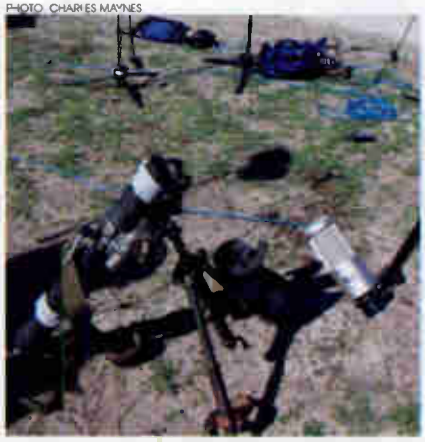
Supervising sound editor Alan Murray

a number of Eastwood's films, including *The Unforgiven* and *The Bridges of Madison County*] for any additional orchestration."

"Clint's not the kind of filmmaker who's going to make you play a piece of score just because he wrote it," Rudloff notes. "There were times in both movies where choices were made to take music *out* because he felt it wasn't adding anything to what he was trying to tell at that point. He's a very fair-handed director in that way. He's trying to tell his story in a certain way and whatever helps him is what he does, whether it's dialog or music or effects."

Unlike on most major films these days, "There are no temp dubs with Clint's pictures," Murray says. "When you show up, you're ready for battle. You don't have a lot of experimentation time. Generally, early on I'll have a run-thorough with Clint

PHOTO: CHARLES MAYNES



Hovering near a 60mm mortar is a Heil PR40 mic.

and then I express what I want to bring to the movie, and it's kind of like jazz—it's almost free-form until he gets on the stage, and then he doesn't want any particular influence dominating the sound job. So you have to be covered on all bases and have everything you might need."

"We try to keep great separation in all our material so we have the flexibility to go in various directions," Rudloff says. "That's something we do on every film, but it's more important in a situation like this where you haven't been through the traditional process of temping it several times and ironing out which sounds are appropriate or chosen by the filmmaker."

At this point, Murray, Asman and the mixers are so locked into Eastwood's tastes and methodology that they rarely experience any major snafus on the all-important final. "More than once," Reitz notes, "we've dubbed reels and Clint has come in, and said, 'Well, that's fine. Let's go on to the next reel.' Trust me, that does not happen very often anyplace else." ■

Blair Jackson is Mix's senior editor.

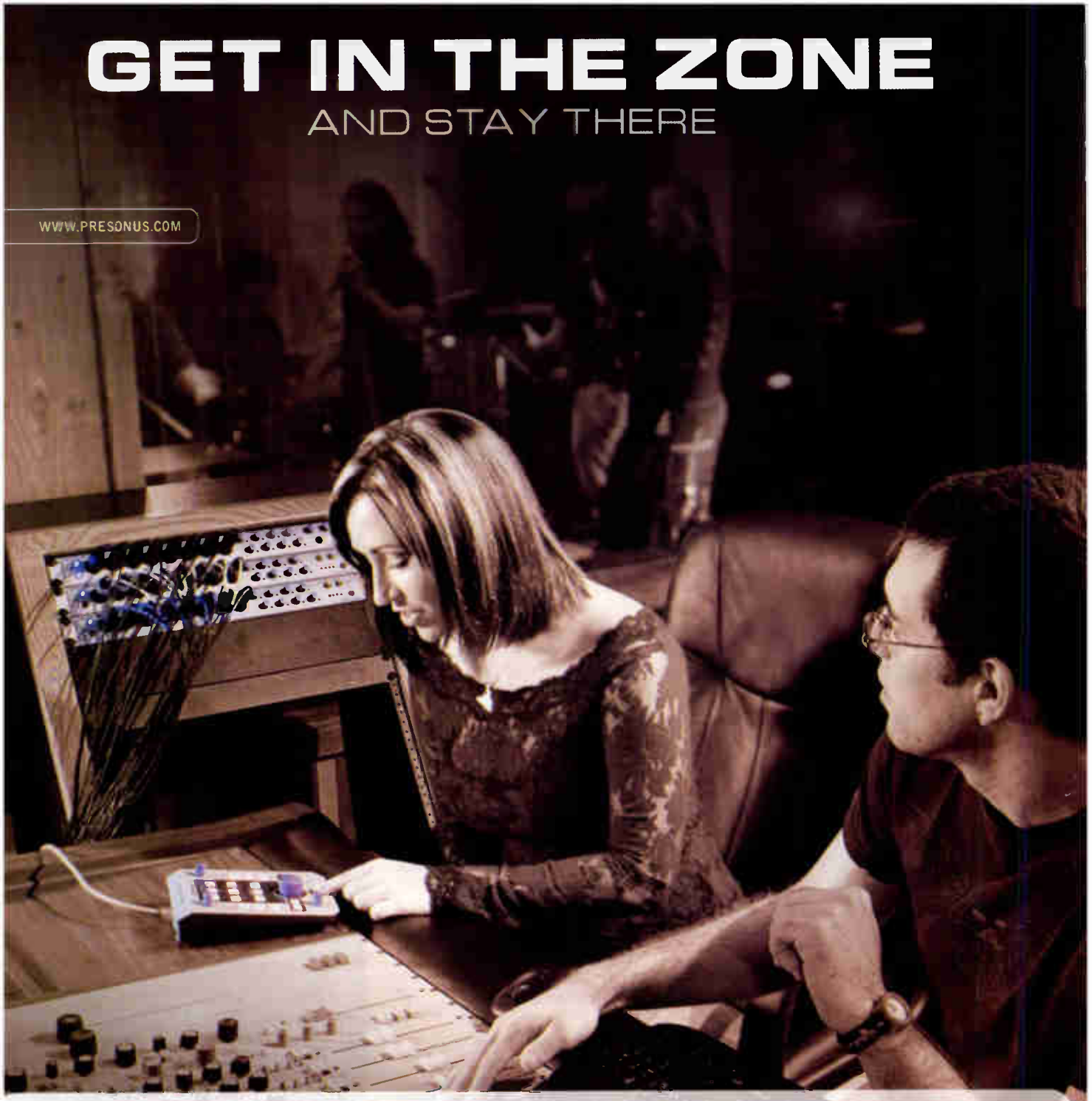
PHOTO: TERESA MAYNES

Charles Maynes collects sounds near Waco, Texas, with a Fostex FR-2 and Sanken shotgun mics.

GET IN THE ZONE

AND STAY THERE

WWW.PRESONUS.COM



FIRESTUDIO™ raises the power of computer recording to a whole new level. Starting with eight high-headroom Class A PreSonus microphone pre-amps, FireStudio™ effortlessly delivers emotion-filled performances with deep solid lows, smooth highs and balanced mids. FireStudio's™ new JetPLL™ jitter elimination technology vastly improves stereo imaging and provides clarity that's nothing short of amazing. With the included Control Console, ProPak Complete Software Suite, and the optional MSR, FireStudio delivers the complete recording solution that gets you, and keeps you in the zone of music creation.

Sweetwater configures, installs and supports more computer audio systems than any other retailer in the country. They recommend PreSonus recording systems day in and day out, because the combination of quality, reliability and affordability that PreSonus systems offer simply can't be beat.

FEATURES

- High-speed FireWire (IEEE 1394) audio interface
- 24-bit resolution, up to 96k sampling rate
- 26 simultaneous inputs and outputs
- 8 PreSonus Class A microphone preamps w/trim control
- 8 analog line Inputs, 2 Instrument Inputs
- 16 channels of optical ADAT I/O (8 ch. via 96k dual SMUX)
- S/PDIF I/O, MIDI I/O
- JetPLL™ – jitter elimination technology – improved clarity and imaging
- Zero latency DSP mixer/router

Sweetwater Sound Sales Engineers are experts in computer-based recording systems.

Call Sweetwater today to get your FireStudio racked and rockin' in YOUR studio!

FIRESTUDIO™

26x26 FireWire recording system with DSP mixer/router

Optional MSR
(Monitor Station Remote)

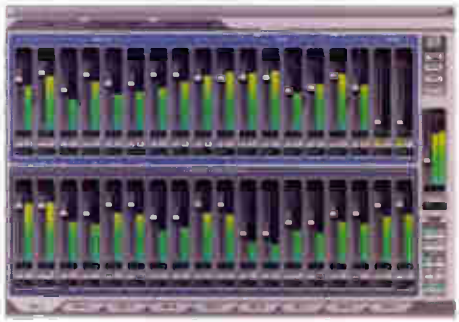
Talkback, dim, mute & mono

3 modes: track, surround, mix

Speaker/input source switching

Dual headphone amps

Control Console
DSP mixer/router
(Included)



PreSonus ProPak Complete Software Suite
(Included)

Cubase LE

Reason Adapted

Amplitube LE

BFD Lite

Drumagog LE

Plus over 2GB of plug-ins, virtual instruments, drum loops and samples!

BY EDDIE CILETTI

Guitar Distortion

The Good, the Bad and the Ugly

If you have ever felt that guitars are bullying the vocals and the drums, then it's time to take a closer look at those subtly subversive guitar multi-effects processors, now available in all forms—analog, digital and DSP/emulation, as well as hybrid variations.

Distortion is a regular guest here on the geek-ville road show, particularly the nonlinear transition from clean to hard clipping. When it comes to guitar sounds, this is where the action is. Sometimes the transition is a broad window; other times, it's very narrow. Let's call any circuit with a transition window a "soft stage" for simplicity. The goal is to optimize the gain structure to make the most of the window's sweet spot. That's not an easy task with the majority of MI gear on the market, where on a good day, "metering" is a single LED.

Here's where psychology comes in. We all rely on our ears, but we must also learn to differentiate loud from good. Plus, what seems "right" on its own may not "play well with others." Any type of processing that gets us in the ballpark is cool and powerful. For example, it's easy to create a perfectly smooth, instant solo guitar tone, but multiple layers of similarly processed guitars can quickly take up valuable real estate.

THE COOKBOOK

This month's column has a three-way focus: the order in which stomp boxes and signal processors are placed in the signal path; the art (and science) of choosing tubes; and the relationship between the power amp and the loudspeaker. Think of the source and destination as the bread, with the primary signal topology (preamp and amp) as the protein. In between, the stomp boxes, tubes, transistors, diodes and impedance relationships are the sonic condiments.

Let's work our way backward from the most-aggressive to least-aggressive types of distortion. Fuzz boxes typically use diodes to soft-clip the signal. To further increase aggression and sustain, the diode's drive amp gain is increased until it hard-clips. This is the narrowest window, where the dynamics have been completely flat-lined.

Aficionados of diodes are aware of the variations, such as germanium (Ge), silicon (Si) and gallium phosphide (GaP); aka LEDs. These produce a clipping range of 0.3, 0.6 or 1.2 volts, respectively—narrow windows to be sure—each with its own version of what "soft" is. EQ networks focus the distortion in a specific frequency range and attempt to recover lost warmth. Figure 1 shows three examples of diode clipping, as well as hard clipping.

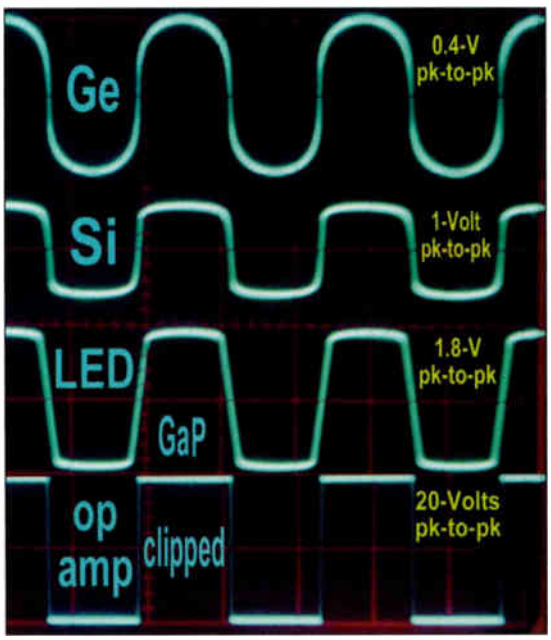


Figure 1: three examples of diode clipping, plus hard clipping

SPAGHETTI BENDERS

You have little choice but to put a fuzz box in between an instrument and an amp; doing so undermines any subtle contribution that the tubes downstream might make, which is fine unless you are looking for something less black and white. I find it interesting to see compression applied to an already smashed guitar track.

However, if a compressor is placed before any soft stage—from fuzz box to analog tape—the drive (output) level can then be optimized for the window's

sweet spot. Similar to fuzz boxes but in a more genteel way, Neve's 2254 and 33609 compressor/limiters use diodes as the gain-control device—hard to believe.

To take advantage of the diode's limited dynamic range, the signal must be considerably scaled down (attenuated), proof that the optimized window approach works. I'll take a closer look at these classic dynamics processors this year. (Dolby and dbx noise reduction took a similar approach to solving analog tape noise, using compression to optimize the signal level and then expansion to restore the dynamics.)

Figure 2: The green trace shows the effect of impedance under-loading; the violet trace shows overloading.

HOT STUFF

We associate tubes with musically harmonic overtones, but that idea is over-simplified on many levels. Distortion is a static measurement and an audio signal is anything but—dynamic distortion is harder to measure than a steady-state tone. Think of an amplifier as being similar to a racecar: How fast and effortlessly does it go from no signal to full signal? Some circuits are smooth, fast and agile; others are hesitant, sluggish and slow. A static test is like being on a straightaway; the real dynamic test is off-roading.

Overdriving a vacuum tube power amp is next in the aggressive line. Push-pull power amps—the type found in nearly every amp of 15 watts or more—yield a balanced mix of even- (octave) and odd-harmonic distortion. The single-ended, Class-A Fender Champ and similar single-power tube designs generate more even-order harmonics than that from odd.

Those who like power amp distortion should know that overdrive quality is dependent on the load—the loudspeaker impedance. Some vacuum tube power amps have an impedance switch, while others just specify the range. By comparison, solid-state amps don't really care about the load, so long as it's within the design range.

A four-speaker cabinet can be wired in several ways to achieve different impedances. Assuming four identical 16-ohm speakers, if all are wired in parallel, then the total impedance will now be 4 ohms. More typical would be to wire two pairs in series and then parallel the pairs. The resulting impedance then remains 16 ohms.

The formula for calculating parallel impedance is 1/Ztotal = 1/Za + 1/Zb + 1/Z etc., where "Z" is the speaker impedance. You can convert each fraction to its decimal equivalent, but keep in mind that after adding, the result is 1/Ztotal—not the answer, but requiring an additional step to be inverted.

In Fig. 2, the green trace represents a slightly overdriven Class-A guitar amp (a Groove Tubes Solo Single) with its output impedance set for 8 ohms but driving a 10-ohm load (under-loaded). When the impedance is set for 16 ohms and driving the same load, the violet trace shows how overloading the amp changes the distortion characteristic.

PRE FOR THEE

Similar to power amps, overdriving two daisy-chained preamp stages creates a more balanced mix of even and odd harmonics. Overdriving one stage at a time yields more even than odd harmonics. When not overdriven, the preamp stage's sound is largely dependent on the tube type and the EQ network, also known as the tone stack. For example, the JJ Tubes/Groove Tubes version of the ECC83 (euro 12AX7) deserves the "warm" moniker. Under "clean guitar circuit" operation, it has twice the distortion (2 percent) as compared to other versions of this tube.

If your amp's front end (preamp) is too aggressive, then try a tube with less gain. Tweed-era Gibson amps used the 12AY7/6072. These also tended to be less microphonic and less noisy. New old stock (NOS) versions of the 6072 have become rare and pricey because of their use in microphones. Both NOS 12AY7 and a new version of the 6072 by Electro-Harmonix are available for about $20.

TWEED AND TWEEN

Two tonal extremes are tweed-era guitar amps and that very '80s critter known as the Roland Jazz Chorus. (The JC-120 is still in production.) The fundamental difference is not just that one amp has tubes and the other is solid-state, but also what the designers chose to do with those topologies.

The JC-120 has an op amp front end and a discrete transistor power amplifier—both are ultra-linear and good if you want squeaky-clean. The built-in, but not particularly desirable, overdrive circuit is too drastic of a contrast and not soft enough for this application.

Contrast that with a tweed-era guitar amp, early versions of which had no negative feedback in the power amp. Without feedback, frequency response and headroom are not "flat" at the spectral extremes. This simpler, vintage-style approach is much less linear—softer on the top end and warmer (more colored) in the low-mids and bottom. The lack of feedback allows the speaker to resonate in a way that complements the instrument.

Linearity is not an exclusive characteristic of solid-state; it's a design approach that can also be applied to vacuum tubes. Design simplicity can soften any topology—tubes or transistors. The fewer the components, the better, and without feedback, that's the key to opening the soft-overload window. The Hamptone JFET mic preamp/DI by Scott Hampton represents a modern example of this. I think it comes closest to emulating a vacuum tube.

DESSERT

Guitar effects are typically not subtle, and distortion is often the key ingredient. But listen to Led Zeppelin or Black Sabbath, and you'll hear understated, under-distorted guitars and something else: *space*, that final frontier. But let's not forget that creativity and technique transcend gear. ■

Eddie has been testing, grading and "fret-ting" over FETs for mics, preamps and instrument applications. Visit him at www.tangible-technology.com.

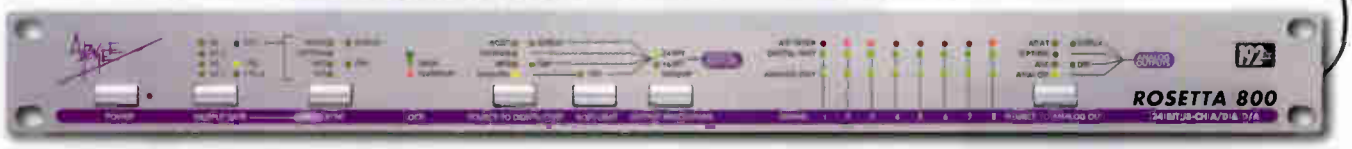
Instant Pro Studio

Just add creativity.

LOGIC PRO® — THE PROFESSIONAL'S CHOICE FOR CREATIVE AUDIO PRODUCTION

Logic Pro has long been the professional's choice for creative audio production. Pair it with a **dual processor Power Mac® G5**, and you've got an unbeatable combination of power, flexibility and expandability. With 34 software instruments, 70 effects and distributed audio processing, all that's missing is a way to get high-quality audio into and out of the Mac...

ROSETTA 800 — THE PROFESSIONAL'S CHOICE FOR AUDIO I/O.



...which is where the **Apogee Rosetta800** comes in. A name synonymous with top-notch digital I/O for two decades, more professionals get audio in and out of their DAWs through Apogee converters than any other standalone pro A/D/A converter.

- 8 channels of balanced analog I/O
- 8-channel digital I/O via AES/EBU & ADAT/SMUX
- Up to 24-bit/192kHz resolution
- Ultralow-jitter Intelliclock
- SoftLimit clip protection
- Plug-in play FireWire connectivity*

APOGEE SOUND AMAZING

Sweetwater puts it all together for you. Our Apple® Certified sales engineers can answer any and all questions you may have about building the perfect Apple audio system, and our computer audio install techs have built more systems than any other retailer on the planet. Let us help you design the perfect system for the way you like to work. We'll build it, configure it, test it, and ship it straight to you. All you've got to do is unpack it, plug it in, and start making music.

*Optional XFireWire card required.

CALL SWEETWATER TODAY!

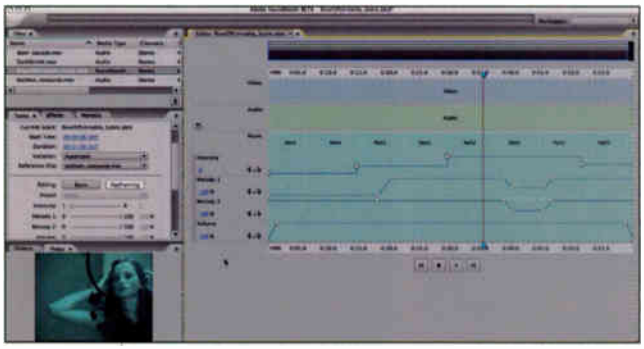
(800) 222-4700

www.sweetwater.com

Sweetwater®

music technology direct™

Tools of the Trade



ADOBE SOUNDBOOTH

Adobe's (www.adobe.com) Soundbooth removes noise from existing recordings and lets users record dialog tracks, sound effects or other audio assets. Available for Windows and Intel-based Macs, the app can alter existing audio files with sample-accurate tools that cut, copy, paste, fade, stretch and add effects. Integration with Macromedia Flash and Adobe's Premiere Pro facilitates creation and tweaking audio for the Web and other applications. As a bonus, its AutoComposer feature offers fast creation of custom music to fit a video or audio project. The public beta of Soundbooth is available as a free download at http://labs.adobe.com/technologies/soundbooth.

PRIMERA ADL-MAX

Meant to increase productivity of any Bravo II or BravoPro Disc Publisher, the ADL-MAX (www.primera.com, $1,995) auto-loader can burn, print and transport up to 350 discs automatically and hands-free. Advanced robotics move discs from the four integrated input bins into and out of Bravo II and BravoPro's burning and printing mechanisms. With ADL-MAX, Bravo II's capacity increases from 50 discs to 325 discs, while BravoPro's capacity increases from 100 discs to 350 discs.

BOSS MICRO BR DIGITAL RECORDER

BOSS (www.bossus.com) has released a slick palmtop recording studio and guitar companion that's only slightly larger than an iPod. In addition to four recording tracks, the Micro BR Digital Recorder ($319.50) offers eight additional Virtual Tracks (32 total) for comping, loads and plays back MP3s to an SD card, and can time-stretch in real time without affecting pitch. The BR also features internal guitar effects, more than 250 drum patterns, USB connectivity, a ¼-inch stereo line input and headphone output with separate volume control.

STUDER SCORE LIVE

Studer (www.studer.ch) brings new capability to its entire Vista console range with SCore Live DSP platform. This six-space center of serious processing power houses up to 10 DSP cards and 12 I/O cards of various formats. The DSP can be user-configured, offering cost-savings over fixed-configuration platforms. New options include System Configuration Editor software that lets users adjust factory-defined settings on a job-by-job basis and the ability to add 10 seconds of delay to signals to compensate for delays introduced through off-site production elements. The system maintains full redundancy in power supplies and DSP, along with a redundant link between the desk and core.

DIGIDESIGN MBOX 2 MINI

Taking a page from the M-Audio playbook, Digidesign (www.digidesign.com) releases the extremely portable, USB-powered Mbox 2 Mini ($329). The compact unit allows recording at up to 24-bit/48kHz, and features two analog I/Os (two ¼-inch, one XLR), front panel volume control, zero-latency monitoring, monitor mute switch, stereo headphone out, phantom power and a Kensington Security lock to prevent the user's Mini from disappearing. The unit ships with Pro Tools LE and comes packed with DigiRack and Bomb Factory plug-ins, and the Xpand! sample playback/synthesis workstation software.

RME MICSTASY

The RME Micstasy (dist. by Synthax, www.synthax.com; $4,199) offers eight mic preamps and eight channels of digital conversion (up to 24-bit/192kHz) that can run together or separately. Micstasy offers 85 dB of gain, digitally controlled in 0.5dB steps. There are also eight line inputs. A slick Auto-Set function automatically sets levels within a user-defined headroom range of -1, -3, -6 or -12 dB. An I64 slot accepts an optional I64 MADI card ($748), allowing users to transfer up to 64 channels of AES/EBU audio and gang up to eight Micstasy units for a total of 64 channels. Micstasy is completely remote-controllable via MIDI or MADI and can act as a front end for Pro Tools directly from the session's Mix window. Channels can be grouped from stereo up to surround setups, and then stored as user presets.

capsule; eight other available capsules are priced from $249 to $849. Capsule personalities range from cardioid, figure-8 and omni patterns to "bright" and smaller-diaphragm capsules. The "Robbie-reminiscent" power supply has an ECC88 vacuum tube and a soft-start feature to maximize tube life and minimize startup time. The mic ships in a foam-lined flight case that holds the cable, shock-mount and power supply.

SONY MZ-M200 HI-MD

This linear handheld recorder from Sony (www.sony.com/professional, $439.95), the MZ-M200 Hi-MD uses Hi-MD media (up to 1 GB) and can record 94 minutes uncompressed and up to 34 hours in ATRAC4 Plus format. Features include a USB 2 port, Mac/PC software, ECMI-DS70P stereo mic, MDR-EO931 ear buds, AC adapter and a lithium-ion rechargeable battery. The svelte unit's front panel display features an illuminated stereo meter with battery life indicator, track name/number and elapsed recording time. The Record button is recessed for confident operation; other controls include display select, volume, track marking, cancel, play, pause, fast-forward and fast-reverse.

SM PRO AUDIO ADDA 192-S

This 2-channel mic preamp/converter from SM Pro Audio (www.smproaudio.com, $499) not only offers two front panel mic/line inputs, switchable phantom power and -20dB pad, but also a built-in headphone amp and analog/digital rotary mix control for low-latency monitoring. The ADDA 192-S features up to 24-bit/192kHz operation and can operate via internal or external sync.

RED TYPE A

If versatility is in your studio game plan, you may want to check out the Type A tube mic from Red Microphones (www.redmic.com, $1,345). Type A comes with a single, hot-swappable, lollipop-style

NATIVE INSTRUMENTS AUDIO KONTROL 1

Not what you would expect from a virtual instrument company, Native Instruments' Audio Kontrol 1 (www.native-instruments.com, $299), is an affordable, compact USB 2 audio interface with 24-bit/192kHz Cirrus Logic converters. Additional features include USB 2 connectivity, two inputs (line and mic) and hardware control of instrument parameters. The handsome desktop unit comes bundled with Xpress Keyboards—three software instruments based on Native Instruments' Pro-53, B4 and FM7—and Guitar Combos, with three amp emulations from the company's Guitar Rig.

E-MU PLATINUM 88

E-mu's grand piano sound library, the Platinum 88 (www.emu.com, $149) offers Emulator X and Proteus X users more than 7 GB of 24-bit grand piano samples. The set is based on samples from a Steinway Model L concert grand piano, featuring 12

layers of samples for each of the piano's 88 notes: five layers with the sustain pedal up, six with the sustain pedal down and a layer dedicated entirely to note-off sounds. If hard drive space is an issue, the set also includes 1GB and 200MB, 16-bit versions of the piano.

SSL XLOGIC DELTA-LINK MADI HD

SSL's Delta-Link converter box (www.solid-state-logic.com, $4,995) provides MADI connectivity between Pro Tools HD systems and enabled gear, offering 256 channels of digital audio interconnection from a single source. This unit can also serve as a long-distance problem-solver because fiber-optic MADI transports audio up to 3,000 feet between the Pro Tools system and other MADI equipment, allowing the user to control I/O remotely over the same distances. Other features include two optical MADI ports, word/super clock input, low-latency I/O (one sample in and one to two samples out) and a USB interface for user control and future firmware updates.

LAWO MC²90

Lawo's (www.lawo.de) MC²90 digital console features a user-definable center section that lets users hot-swap the control modules to fit their needs, along with the ability to accommodate up to five rackspaces of outboard gear into the meter bridge or the control surface. Central control functions can be transferred to anywhere on the desk. And if you've got the jitters about down time, Lawo's Double Star Technology makes redundancy ubiquitous for live and broadcast operation.

MERCURY CORRECTION

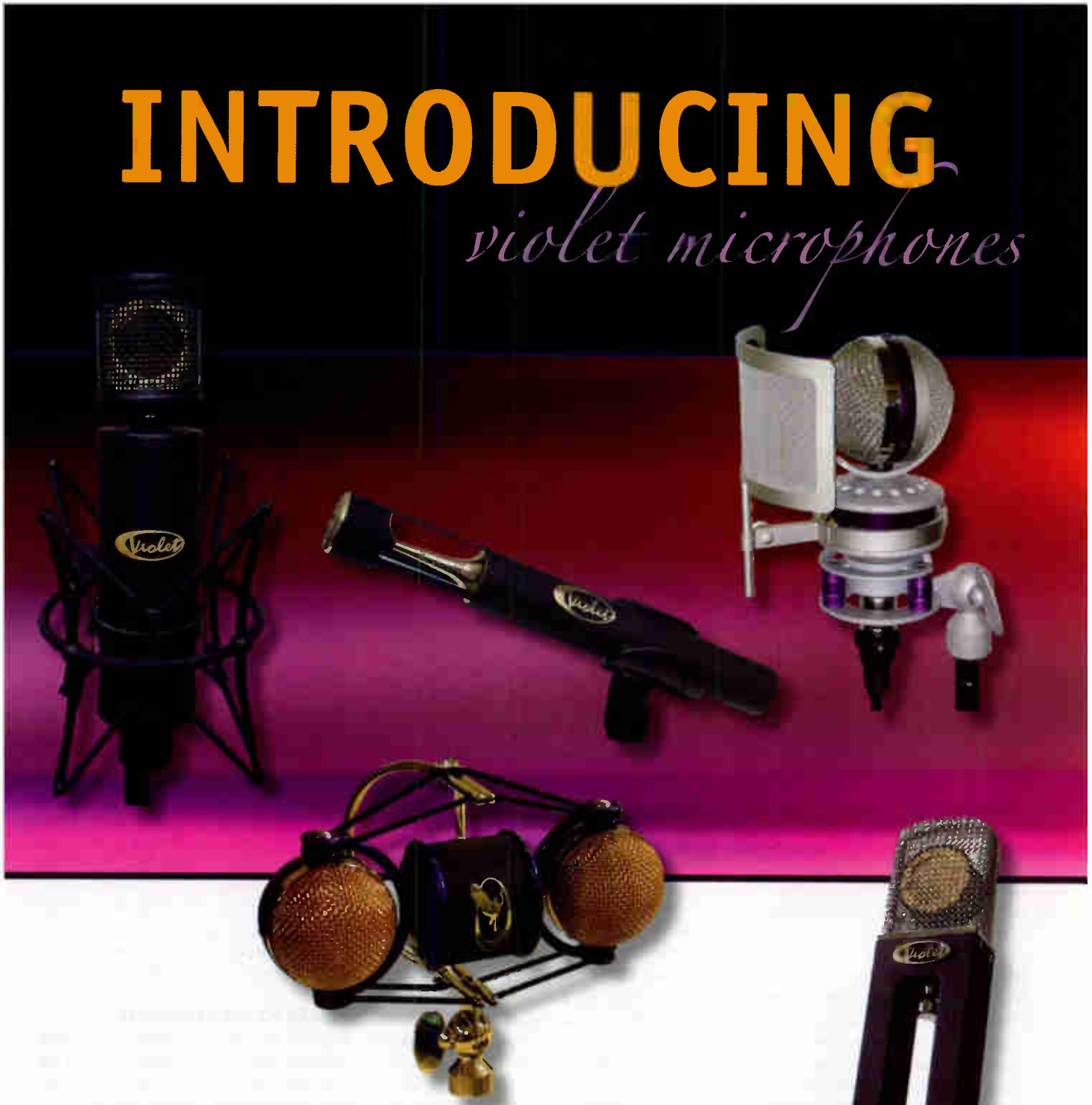
In the article "Microphone Preamplifier Technology" in *Mix*'s November 2006 issue, the chart titled "New Mic Preamps, at a Glance" listed some erroneous information about the Mercury M72/1 preamp. This mono preamp retails at $1,900 ($1,595 street) and is based on the Telefunken classic tube V72 circuit. For more information, visit www.mercuryrecordingequipment.com.

Upgrades and Updates

Antares Audio Technologies (www.antarestech.com) **releases Universal Binary versions of AVOX**—the Antares vocal toolkit. Current AVOX suite or individual plug-in owners can download the upgrades free from Antares' Website. The upgrades are available in Mac RTAS, VST and Audio Units formats. The Toolkit includes the THROAT physical modeler/designer, DUO auto-doubler, CHOIR multiplier, PUNCH impact enhancer and SYBIL de-esser...**Cakewalk** (www.cakewalk.com) **releases two more Expansion Packs for its Rapture and Dimension Pro synths.** The inaugural Series 1 and 2 packs are available as free downloads to registered Rapture and Dimension Pro owners. The new packs include 350 new pro sound programs and more than 100 MB of new wavetables and multisamples, including basses, drums, SFX, pads and more...**Solid State Logic** (www.solid-state-logic.com) **announces PC and new Mac-Intel processor support for its Duende processor.** The DSP platform box offers SSL processing in a DAW environment...Good advice is hard to come by, but **CharterOak's** (www.charteroakacoustics.com) **Website** provides plenty of it with a **mic tips and tricks section from founder Michael Deming.** The educational endeavor seeks to open the lines between manufacturer and user and will be upgraded monthly...**Digital Performer Version 5.1 from MOTU** (www.motu.com) **boasts seamless operation across both Power PC and Intel-based Macs.** Digital Performer 5.1 is available as a free download, supports Tiger OS 10.4 operation on the blazing new Macs and offers numerous code enhancements and optimizations...From the "if I had a nickel for every time I've written this" department: **SampleTank 2.2 from IK Multimedia** (www.ikmultimedia.com) **is now compatible with Mac Intel Core Duo Systems.** The free upgrade also includes improved MIDI operation, faster instrument load times, improved search function reliability, Pro Tools 7 Native support and better Audio Units multichannel support...**Focusrite Liquid Mix is now available for PC.** Version 1.5 also works for PowerPC and Intel Macs. Liquid Mix works with Pro Tools HD, LE and M-Powered systems through IK's VST wrapper. Get the upgrade at www.focusrite.com...**Millennia-Media** (www.mil-media.com) **releases HDOE and HROE output expansion options for the HV-3D and HV-3R** 8-channel mic preamps. Both provide two buffered outputs per mic channel for a total of three from each mic. Each of the eight outs are provided on DB-25 connectors in Tascam format. The splits can be used for live, broadcast or recording feeds, or as confidence duplicates at a lower level to prevent digital overs. The HV-3R option is field-installable, while the HV-3D can be returned to Millennia for an upgrade or ordered with a new unit. ■

INTRODUCING

violet microphones



Professional Electrostatic Microphones are handbuilt with extreme precision in Latvia. Violet Design achieves the fastest transient response without the sacrifice of low-end frequencies. This manufacturing process is crucial to achieving the unique sound quality that is the trademark of a Violet Design microphone.

Violet DESIGN

Violet Design: The care and eye to detail of a master craftsman.

www.violetdesignusa.com

BY ROBERT BROCK

Muse Research Receptor VST Plug-In Player

External Software Processing Via UniWire

In the genus of digital audio effects and instruments, there are two species: dedicated hardware devices and computer-based software tools. It's hard to place the Muse Research Receptor hardware audio effect/instrument plug-in player into just one of these categories—in fact, this product could very well be considered the platypus of digital Darwinism.

Receptor is a VST plug-in player running on a highly optimized hardware and software system. Although it's based on a Linux/AMD architecture, it's nothing like a conventional computer. You can play your guitar through its instrument-level input, riff out on a MIDI keyboard via its MIDI jacks, and run analog and digital audio signals through its ¼-inch stereo analog and S/PDIF I/O. It's also equipped with an 8-channel ADAT Lightpipe output. On the back, in addition to the I/O, there are four more USB jacks, PS2 keyboard and mouse ports, an Ethernet jack and VGA video output.

The base system comes with 256 MB of RAM and a 160GB hard drive, and includes many freeware plug-ins and some commercial demos. It's upgradable to a maximum 2 GB of RAM and a 750GB hard drive, and can be custom-ordered preloaded with plug-ins.

TURN ME ON

Receptor only runs UniWire-compatible plug-ins; UniWire is available as a VST plug-in and will soon be available in Audio Units and VST formats. Check www.plugorama.com for information about specific plug-in compatibility and a UniWire overview.

The easiest way to think of Receptor is as a 16-part multitimbral sound module, although it can be used for other purposes. Each part can have its own MIDI-addressable instrument and three insert effect plug-ins. A master effects plug-in section can be accessed via aux sends. The interface for splitting and layering sounds across a MIDI keyboard, as well as adding effects, is conceptually identical to those found on Roland, Korg and Yamaha synths that have been out for nearly 20 years. Receptor's immense advantage is its ability to apply this concept to third-party plug-ins. Each of these 16 parts can be assigned as individual sounds to various outputs or mixed together to create monster combinations.

Connecting a Cat-5 Ethernet cable between a computer and Receptor serves several purposes. The included Receptor remote-control software will run on most Mac or Windows computers. This allowed me to remotely access the same visual interface, but as a window on my laptop screen. Receptor also uses standard network file-sharing protocols so I could easily view the contents of its hard drive from my Mac. Because the Receptor unit doesn't have a CD drive, using a networked computer is the only way to install plug-ins and add content.

Receptor's Mix window showing the plug-ins used for channel 1

INTERFACING VIA UNIWIRE

The most compelling use of the Ethernet cable is an upgraded feature called UniWire, which allows Receptor to easily interface with most DAWs. UniWire turns the Ethernet cable into the equivalent of a 32-channel audio snake that also carries MIDI information. To allow a DAW to talk to Receptor, simply insert the UniWire VST plug-in into a channel in the host software. The plug-in's interface allows for intuitive routing to and from the various channels in Receptor. To test this, I used a pre-released Audio Units version of the UniWire plug-in in Logic Pro 7. I was impressed with how responsive UniWire felt when I played complex, layered virtual instruments with effects. While playing, Logic's CPU monitor was completely dormant; in this application, Receptor can be thought of as an external DSP box.

I used an acoustic piano composition with orchestral accompaniment, which was produced in Logic Pro 7 on a Mac G5 with Vienna Symphonic Library's Vienna Instruments. Using VSL is a DSP-intensive proposition, so when I tried to add any of the better-sounding acoustic piano plug-ins at the same time, it brought my computer to its knees. I employed Receptor by loading a demo version of EastWest's PMI Bösendorfer 290 grand piano. By instantiating UniWire's instrument plug-in on the MIDI-sequenced piano track, I quickly linked my G5 to Receptor and played everything in real time through Logic's master output. Most surprising and impressive to me, the network connection was fast enough to keep up in live performance applications. Using an 88-note keyboard controller, I played the piano part through a MIDI interface into Logic over UniWire with no notable latency. Unfortunately, doing any offline bouncing or track-freezing within Logic was not possible, but real-time bouncing worked as expected.

POWER TO THE PRODUCERS

Receptor has enjoyed success with touring musicians who want to take plug-ins on the road and DAW users who want to beef up their native systems. Adding UniWire to the mix means that this new box better integrates closer with a DAW. Communication via Ethernet is instantaneous with Receptor acting like a locally hosted plug-in rather than an external box. The playing experience is quick and responsive, making Receptor blend invisibly into the production environment. It works so well, you may find yourself filling up those racks you cleared out just a few years ago.

Muse Research, 650/326-5400, www.museresearch.com. ■

Robert Brock is an engineer, educator, composer and pianist in the Phoenix area.

DESKTOP AUDIO | **THE PROFESSIONAL'S SOURCE**

real world solutions from industry professionals!

www.bhproaudio.com

800-947-5508 | 420 Ninth Ave, New York 10001 | We Ship Worldwide

B&H PHOTO - VIDEO - PRO AUDIO

BY JIM AIKIN

Steinberg Cubase 4 DAW

Virtual Control Room With New Synths and Effects

Cubase has been a studio mainstay for close to 20 years now. Although it may not be the front-running application on either the Mac or the PC, Steinberg's pioneering work in developing VST and ASIO has ensured that its technology will be taken seriously. Meanwhile, Yamaha's purchase of Steinberg has added weight to the question of how Cubase will keep its edge.

Cubase 4 is a significant upgrade—not just a cosmetic makeover. The biggest news for owners of large studios may be its Control Room implementation, which allows you to switch monitors, set up cue mixes and so on from the computer. The new version also includes four new synthesizers, new plug-in effects, a new browser/database implementation, enhancements in notation and scoring, Track Presets for recalling complex signal chains and Instrument Tracks for easier editing of synth performance data.

New features in Steinberg Cubase 4 include MediaBay (center left), the Control Room mixer (lower-right), and the Amp Simulator and ModMachine effects.

OUT OF THE BOX

The user interface's new graphics seem rather dark and gloomy to me. However, in a dimly lit control room, you may find the colors soothing, and they can be brightened a bit in the Preferences box. The functionality of the interface has not been reorganized, which is good news for longtime Cubase users; they'll know just where to find their favorite tools. Users of more modern DAWs may feel, as I do, that Cubase suffers from multiwindow clutter. (Maybe I just need a dual-monitor setup.)

Installation on my two-year-old, custom-built Pentium 4 3GHz machine was quick and painless. Steinberg uses a USB dongle from Syncrosoft for copy protection. I already had an older dongle of the same type, so I inserted the new one briefly and used the Syncrosoft applet to transfer the Cubase 4 license to the older one. I like having a hardware dongle, as it lets me run Cubase on my HP laptop if I need to without having to worry about an extra authorization.

Some of the features discussed in this review, such as the Control Room, the new EQs and the soft synths, are found only in Cubase 4 and not in the lower-priced Cubase 4 Studio.

INSTRUMENT TRACKS

In earlier Cubase versions, editing tracks that contained automation data for VST synths and effects could be a chore because the MIDI data was stored on one track and the VST data on a different track. When you moved or copied a MIDI clip, you had to handle the VST data separately. The Instrument Track implementation in Cubase 4 streamlines this process. All automation is recorded to the instrument track, and when you drag or copy a MIDI clip, the automation comes along with it. Deleting a clip doesn't delete its associated automation, however. This could be either a welcome feature or an annoyance, depending on how you like to work.

Instrument Track presets can be stored and recalled. These contain both the synth settings and the choice and settings of effects, but no MIDI data. Track presets can also be saved for audio tracks, making it easy to save, for example, your favorite vocal processing chain.

Instrument Tracks can only handle one stereo audio signal path. When using multiple outputs on multitimbral soft synths, you'll need to drop back to the older methodology. I put Cubase 4 to work on some synth layers and temp tracks for one of my band's songs, and found the process smooth and trouble-free.

BROWSING AROUND

Cubase 4's new MediaBay is powerful indeed. It has a Browser pane that can store favorite locations, a category/sub-category search utility, and a Tag Editor pane in which you can manage the tags that are attached to each file. Files can be auditioned in the MediaBay and dragged and dropped into the Project window.

You can create your own tags and attach them to files—for instance, giving each loop in a folder a numerical value for "sizzle" or "crispiness." There's no way to create your own categories or sub-categories for a hierarchical category search, which is unfortunate. In theory, you can sort the files in the displayed list by numerical tags you've created, but I couldn't make this work. The "sizzle" values that I gave to files kept disappearing.

When I first opened MediaBay, Cubase automatically started cataloging the audio files on my hard drives. Because I've

PROFESSIONAL AUDIO PLUG-INS

Introducing the New Emerald Pack

With the new ML4000 Mastering Limiter

HD and Native versions

The ML4000 is a high-resolution limiter and multi-band dynamics processor designed for music, mastering, post, and live sound.

Features:

- Brick wall look-ahead limiter
- Multi-stage peak detection and limiting
- Ultra low latency
- Multi-band control linking

ML1 Mastering Limiter — ML4 Limiter with Gate, Expander & Compressor

ML4000

The Essential Mastering Solution

Channel G
The Ultimate Console

Analog Channel
The Analog Experience

CompressorBank
The Complete Compressor

Revolver
Flexible Convolution Reverb

FilterBank
Every EQ Ever Made

MC2000
The Complete Multi-Band Compressor

Chrome Tone
Guitar Amp Modeling and Effects

Synthesizer One
Total Sound Synthesis

DYNAMICS • EQUALIZATION • CONVOLUTION REVERB • MASTERING
ANALOG SATURATION MODELING • VIRTUAL AMPLIFICATION
MULTI-BAND DYNAMICS • PERFORMANCE EFFECTS • VIRTUAL SYNTHESIS

WWW.MCDSP.COM

FOR USE WITH PRO TOOLS 7 SOFTWARE
FOR USE WITH PRO TOOLS LE 7 SOFTWARE
FOR USE WITH PRO TOOLS HD NATIVE 7 SOFTWARE

copied several DVDs of loops to one of my external drives, this process took a couple of hours, during which my computer became quite sluggish.

NEW "OLD" SYNTHS

The "new" synthesizers in Cubase 4 aren't actually new. HALionOne is a playback engine for presets created in Steinberg's HALion sampler. The other three additions are spinoffs of VirSyn Tera. Steinberg licensed the Tera technology a couple of years ago for a plug-in called D'Cota, which many (including myself) felt was overpriced as compared to Tera itself and is no longer being sold, though it is still available.

Mystic uses comb filters and feedback for synthesis, and its tones tend to have a brushed-metallic quality. Prologue is a three-oscillator modeled analog synth with a multimode resonant filter. Spector is based on an additive synthesis engine and does terrific swirling pads. All three use the same setup: four ADSR envelopes, two LFOs and basic effects.

I like Tera a lot, but what I like best about it is that it's patchable. Having subsets of the Tera architecture available in preset panel layouts is less exciting. The factory patches are attractive, but not as aggressively dance-oriented as the sound design in some other DAW synths. Prologue has a good set of analog basses among its presets, but I found myself strapping an amp-simulator effect onto the output to punch up the track.

HALionOne ships with a healthy selection of sounds in the usual workstation categories. (A few of the drum kits fail to produce sound, however.) I especially liked the electric pianos. Each HALionOne preset has eight control knobs, and the functions of the knobs change depending on the preset. Many of the sounds have filter cutoff and resonance, and envelope attack and release controls, for instance.

Embracer and Monologue have been retained from Cubase 3, but the a1 and vb-1 synths are no longer part of the install. If you're using them in any existing projects, make sure that the Plug-In Information window has a path to your Cubase 3 VST directory and you're good to go.

NEW EFFECTS

The effects in Cubase 3 were by no means shabby, but Steinberg has beefed up this area with a new graphic EQ, a modulatable delay line, an amp simulator, a rotary speaker simulator and other goodies. There's no new reverb, but most of the older plug-ins, including the sweet-sounding and versatile RoomWorks reverb, are still included.

The new 10-band and 30-band graphic EQs offer several modes with different types of resonance within the bands. The band boost/cut range is ±12 dB, and a handy Range knob lets you cut back the amount of EQ while retaining the graphic contour. The panel design of the parametric channel EQ has been updated and some new types of filters have been added, but the functionality is much the same as in Cubase 3. A new 4-band parametric is available as an insert. Although it lacks the new filter modes, it can be positioned anywhere in the insert chain, which can be quite useful—EQ post-distortion but pre-reverb, for example.

The multiband compressor has been cut back to four bands rather than five, and it's no longer possible to define compression curves with multiple breakpoints. The new implementation is sure to be fine for most purposes, but it appears this change may have been motivated by graphics considerations in the user interface, not by musical functionality, which has to be a mistake.

The ModMachine delay incorporates three LFOs for separate control of delay time and filter cut-off and resonance. The filter can be placed either within the feedback loop or on the output. ModMachine is lots of fun, though not something I'd use every day. The Amp Simulator has 14 amp models and 10 speaker cabinet models, plus presence, drive and EQ knobs. Also on tap is a new arpeggiator, Arpache SX, which can load MIDI patterns and interact with them in various ways on playback.

TOURING THE CONTROL ROOM

Cubase 4's Control Room is a brilliant innovation, and is sure to be appreciated by anyone who has a multichannel audio interface and records clients in a traditional studio. Using this system, you can set up different cue mixes for up to four individual musicians, control the level in your own headphones, monitor external devices such as tape decks, switch the talkback channel on and off, and route the metronome click. The levels being sent to various monitoring systems, including surround, can be separately controlled. Most of the functions that have always been handled by hardware consoles are brought onto the desktop.

You can switch from one set of monitors to another—for instance, from surround to stereo to mono—and the levels being sent to various monitoring systems can be separately controlled. Monitor levels can also be calibrated for a post-production environment. Input and output buses can have their own inserts. Being able to save and recall Control Room setups might be a nice addition, but because your monitor setup likely won't change when you load a new project, such a feature might be irrelevant.

NEW VST3 PROTOCOL

Along with the release of Cubase 4 comes a new version of the VST plug-in protocol. VST3 offers significant enhancements in several areas. Plug-in outputs can be handled dynamically, thus saving space in the mixer. An event input bus is now defined for plug-in effects, allowing them to be controlled in real time. Category-based searches for presets make it faster to find sounds. Resizeable windows and audio inputs for synths are also supported.

Time will tell how fully other manufacturers add these features, but Steinberg clearly understands musicians' needs and has put the right stuff on the table.

TO THE 4TH POWER

As a longtime Cubase user, I'm excited by Cubase 4's new features. I'll give Instrument Tracks and MediaBay a good workout on upcoming projects. Depending on your needs, you may find the Control Room or the new scoring tools more compelling. There hasn't been space in this review to discuss the dozens of high-end features that haven't been updated, from REX file import and numerous editing options to the ability to rearrange the structure of a song using Play Order tracks. Cubase has always been a powerhouse, and it just keeps getting better.

Prices: Cubase 4, $999.99 ($199.99 upgrade from Cubase SX 3); Cubase 4 Studio, $499.99 ($99.99 upgrade from Cubase SL 3).

Steinberg, 877/253-3900, www.steinberg.net. ■

Jim Aikin writes about music software for Mix, Electronic Musician, Remix *and other magazines.*

BY JIM AIKIN

Ableton Live 6 Performance-Oriented DAW

New Sampler, More Processing Power and Production Tools

It's not boring, but it's become quite predictable: Every new version of Ableton Live boosts the feature list to a new level. That was true when I reviewed Live 5 in the October 2005 issue of *Mix*, and it's even more true of Live 6 ($599). The enhancements—visit the Ableton Website for details—include multicore and multiprocessor support, QuickTime movie import, project-management tools, a new sound library and a few new plug-ins, including an 8-band parametric EQ. You may have other faves, but to me, the biggest improvements are the revolutionary Racks features, the Sampler plug-in and a more flexible MIDI modulation setup.

Live 6's new Sampler instrument, showing key zone, graphically editable EQ and plug-ins

BIG RACK ATTACK

In most DAWs, the inserts in each track are chained end-to-end in a single line. You can use sends for parallel processing, but the total number of sends may be limited, and it can be a hassle to have the channel in one part of the screen and its plug-in effects in another part. The Racks concept breaks the send/insert paradigm wide open.

Even in Live 6, sends aren't a perfect way to handle complex processing tasks because clip envelopes can't be applied to the parameters on aux bus effects. Last year I discovered a sneaky workaround, which is to use a system-level MIDI pipeline to route Live's output back into its own input for automation purposes. This technique has other applications, such as triggering a series of commands that are spread over a number of measures.

In an effects rack, an arbitrary number of parallel plug-in chains can be set up within a single track/channel in the mixer. And your favorite setups can be saved as Rack presets, which would be impossible if you used sends.

Parallel effect chains would rapidly create a muddy mess, except that Live lets you smoothly crossfade among them, automate the wet/dry mixes and so on. Real-time crossfades from a MIDI slider are very cool in a live performance; in the studio, you can automate the crossfades using Live's clip envelopes.

Racks come in three flavors—MIDI, audio effect and instrument—and share many common features. Basically, an instrument rack combines a MIDI rack and an effects rack in one unit, while also letting you run plug-in instruments in parallel.

A MIDI rack is positioned before a plug-in instrument. Each parallel chain in the rack can contain a transposer, a velocity shifter, an arpeggiator and/or a chord splitter. Live's new Note Length plug-in can send a note-on in response to a received note-off, which lets you play double-stroke snare rolls, among other tricks.

I've used instrument racks for various things: making stacked synth layers with interlocking arpeggios, creating an analog-style drum kit out of a bunch of Live's add-on Operator FM synths, etc. Velocity cross-switching and crossfading can be set up within a rack using a convenient graphic display.

Each rack has eight macro knobs. A single knob can be assigned to an arbitrary number of parameters among the devices in the rack, and each routing can have its own maximum and minimum values. For instance, I like to lower the volume of a synth just a taste when opening the filter. This is easy to set up using a single macro knob. The macro can then be assigned to an external MIDI controller for onstage use or recording of automation.

ALL ABOUT CONTROL

In earlier versions of Live, one MIDI or QWERTY input could be assigned to only one destination, but Live 6 opens this up. A single QWERTY key can now press as many buttons as you'd like, and a single MIDI Control Change message can move many knobs or sliders within Live's mixer or built-in devices. This is a huge improvement. For example, with Control Change data, as with the rack knobs, you can give each destination its own minimum and maximum settings.

Once you've assigned a MIDI Control Change type to a Live knob or fader, you can no longer record that data type into a Session View clip in real time because Live insists that the automation routing "owns" the data type. MIDI data can still be added to a clip envelope manually with the mouse, but to add MIDI controllers to a clip (a mod wheel move, for instance) during real-time recording, you'll have to

Come Together.

For over four decades Neve has designed, developed and built the world's best sounding music consoles.

Now you can build your own classic Neve console.

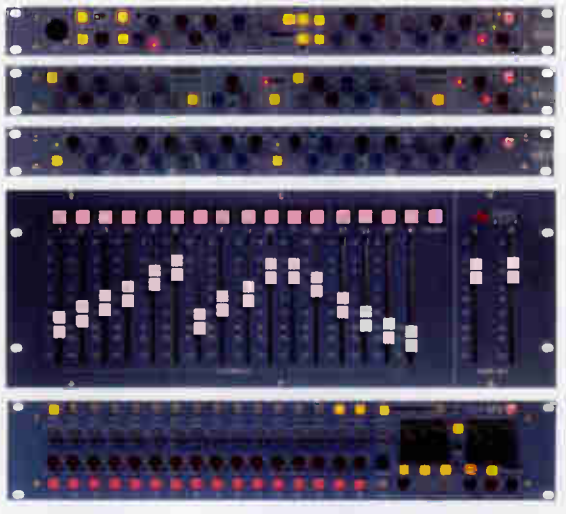
8801: Channel Strip

8802: Dual Compressor

8803: Dual EQ

8804: Fader Pack

8816: Summing Mixer



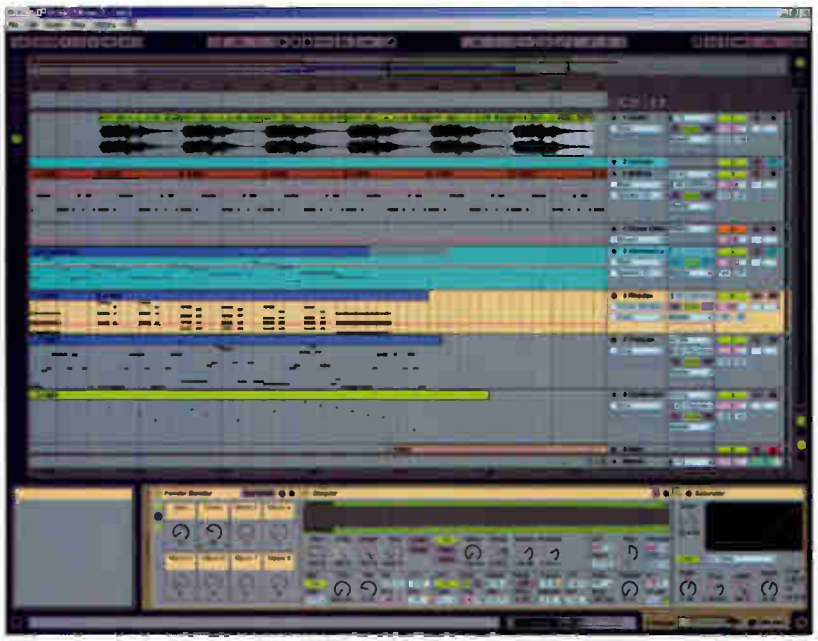
The New, Modular, 88 Series Outboard Collection

Now available to buy from your local authorized Neve dealer.

Neve

Neve. Part of the AMS Neve family

AMS Neve Ltd Billington Rd. Burnley, Lancs BB11 5UB, UK
Tel: +44 (0)1282 457 011 www.ams-neve.com



Track window shows overview strip (top), frozen tracks and macro knobs in an instrument rack.

turn off any conflicting MIDI-to-Live control routings manually and then turn them on again afterward. This is inconvenient and should not be considered a bug—it's just the way Live works.

If you've assigned the mod wheel to a macro knob in two different racks on different tracks, then *both* racks will respond whenever you move the wheel, even if one of the track's MIDI inputs is supposedly switched off. If you're planning to use Live for onstage keyboard work, then be very careful because this design can trip you up. One workaround is to use a separate MIDI controller for automation inputs or a keyboard with a bank of MIDI faders so that each fader can be assigned to a unique Control Change message.

After I assigned my MIDI mod wheel to control vibrato depth in a couple of Operator tracks, the mod wheel's output was no longer received by a third-party synth on a different track, yet when I put the third-party synth's track into record to test this, my new mod wheel moves were recorded into the Operator tracks even though those tracks weren't record-enabled. You read that right—Live 6 will record MIDI data into the wrong track if you've assigned that data type as an automation input.

SAMPLER, NOT SIMPLER

For a couple of years, Live has shipped with a sample playback instrument called Simpler. While very good at basic tasks, Simpler lacks multisample playback capability—at least at the user level. The new Essential Instrument Collection sound bank, which ships with Live 6, uses multisamples and

plays them back through Simpler, although the ability to edit sample zones and such is not implemented.

The solution is Sampler ($199), Ableton's new, optional add-on instrument. In addition to a standard multisample key/velocity zone implementation with crossfading, Sampler has an auxiliary envelope generator, three LFOs, morphing filters and an oscillator that allows you to add FM to samples.

If you're strapped for cash, then you could use Simpler and an instrument rack to create a multisample layout, but you'll miss out on Sampler's other features, such as the ability to load Akai S1000/3000, Giga, EXS, SoundFont and non-encrypted Kontakt presets. With Sampler, Operator and a few good loop libraries, Live users have everything they need to make professional-sounding tracks.

Operator ($149) has been slightly enhanced in Live 6 with the addition of two new FM algorithms and more filter modes. What it still doesn't have, and desperately needs, is a page of MIDI modulation inputs. (Sampler does have such a page, fortunately.) In the absence of such inputs, Live's MIDI-to-automation inputs have to be used with Operator for tasks as simple as mod wheel vibrato. These inputs are global to Live, which leads to the problems discussed elsewhere in this review.

BEYOND THE ENHANCEMENTS

Now that QuickTime movies can be loaded into Live, it's natural to think about using the program for film scoring work. Live can do automated tempo changes, and markers in the movie file can be lined up with Live's bar lines. But curiously, Live 6 still can't change time signatures during a piece of music. Because I often feel the urge to throw in a few bars of 3/8 or 5/4, this issue will force me to use a different DAW.

Live's handling of MIDI overdubs in Arrangement view is not ideal: If the track doesn't have a gap where you can punch in on the fly, then currently sounding notes will be cut off at the start and end of the punch, and hand-editing will be required to get them back. I'm told this is a bug in 6.0.1 and will soon be fixed. Editing of MIDI clips in Arrangement view is hampered by the fact that the ruler in the Edit window displays the bar/beat time since the start of the clip. It should show the song's bar and beat.

Live's system requirements are fairly typical. Mac users will need a G3 or faster (G5 or Intel-based Mac recommended) and OS 10.2.8 or later (10.4 recommended). Windows users will need a 1.5GHz CPU, Windows 2000/XP and a Windows-compatible soundcard (ASIO preferred). Both systems require 512 MB of RAM (1 GB recommended).

LIVE IS NO JIVE

There's a lot to like in Live 6, especially the Racks and the enhanced modulation routings. But despite the addition of QuickTime support, film composers may find the lack of support for time-signature changes to be a stumbling block. Ableton also needs to do some conceptual work to allow MIDI Control Change data to be recorded and played back in a more natural way, but if you avoid the Operator synth (which in other respects is great) and opt instead for third-party synth plug-ins, the MIDI issues will recede into the background.

Live remains the ultimate platform for almost any type of computer-based performance, and it's also a serious contender in the studio. If you're wondering what the buzz is about, download the free Live 6 demo and find out.

Ableton, dist. by M-Audio, 866/657-6434, www.m-audio.com. ■

Jim Aikin writes, plays music and teaches in Northern California.

BY BARRY RUDOLPH

Waves Tune Pitch-Correction Plug-In

Smooth Operator for PC or Mac

One of five plug-in processors in the new Waves Vocal Bundle (which also includes DeBreath, Renaissance DeEsser, Renaissance Channel Strip and Waves Doubler), Waves Tune corrects the pitch of monophonic sources, smooths note transitions, and allows for detecting and editing natural vibratos. It does all this while preserving formants, the groups of frequencies that characterize vowel sounds. Formants are extremely important for keeping pitch-shifted vocals sounding natural.

GETTING READY TO START

Waves Tune runs as a ReWire client on PCs under Windows XP and Macs running OS 10.3 and above. Hosts that support Waves Tune include Pro Tools TDM or LE (Versions 6.9 and 7), Cubase SX 3.1, Nuendo 3.1, Digital Performer 4.6 and Logic 7.1. Waves Tune's large interface (via ReWire) lets you operate the host's transport controls and set loop start/stop points any place from within the plug-in; there is no need to refer to another program or screen. I installed the Vocal Bundle into a Mac G5 Quad Core with 4.5 GB of RAM running Pro Tools 7.1cs4 on an HD3 PCIe system.

Before any correction can occur, Waves Tune must scan the audio file. Its memory is capable of holding up to 10 minutes of audio. The software has a latency of 3,072 samples at 44.1- and 48kHz, and 6,144 samples at 88.2- or 96kHz sample rates. As a workaround, I found it good practice to copy the track to be tuned, scan it and then offset to match the original. You could also rely on Waves Tune to report its latency to automatic delay compensation in the host program.

LOADED AND READY TO GO

In my first test, I put Waves Tune to work on a female singer who has extraordinary pitch control to see if I could improve her ability. Before I scanned, I set the four setup sections for optimal performance by choosing my reference pitch, formant correction on/off, frequency range and global pitch shift. Next, I used the Segmentation and Scale Selection to designate the song's key and note scale. Then, I set the Note Tolerance. I found Waves Tune's note pitch-change sensitivity control useful when tuning vocal melismas and portamento, where many separate note segment blocks are required to accurately track an elaborate vocal run or ad lib.

Lastly, if desired, the Vibrato button let me set the target note as the average pitch of the detected vibrato. This defaults to off, but—as with all of the previously mentioned parameters—you can make changes and apply them to any section(s) later after your initial scan. You can undo/redo any step in your pitch-correction session within a maximum of 32 steps.

Waves Tune's Edit window shows pitch blocks, and original and corrected pitch.

WHAT YOU SEE

Waves Tune's Edit window includes a scanned track overview waveform, a sharp/flat tuning gauge, plug-in automation, load/save settings and MIDI export. The Pitch Editor section shows a piano keyboard positioned vertically on the left side of the window to serve as a reference and to indicate the sung note and/or input received from a MIDI keyboard. The audio's original pitch is shown as an orange waveform superimposed by the corrected pitch in green. While in play, these waveforms parade across the window with the currently sung vocal notes always in view.

Each note resides within a white note-segment block that aligns in a grid to the keys of the piano's keyboard. Within these blocks, you can see just how sharp or flat each note is in relation to exact, perfect pitch. Vibrato is clearly visible. Waves Tune also tracks and corrects the pitch center of notes with heavy vibrato, while maintaining sound quality and the vibrato's intensity and shape.

The Correction Parameters section has three controls: Speed, which determines how fast Waves Tune corrects pitch; Note Transition to adjust the correction speed from note block to note block; and Ratio, an overall correction-intensity control. I found that the default settings worked best when tuning my female singer.

For microscopic changes, there are eight graphical tools, including Note to drag single or multiple note blocks to different pitches; Trim for lengthening/shortening notes by grabbing and dragging a corner of any block; Zoom; and Slice, which splits up single notes into additional notes.

TUNING, 1-2-3

I found that certain notes sounded better when not strictly tuned, particularly in blues/rock music. Fine-tuning the Correction controls provided me with everything from smooth, natural transitions to jagged and quantized robotic moves.

With my female singer, I restructured the chorus melody by simply dragging a note block to the desired pitch. Lengthening notes works great for small increases, and I added vibrato to a note or two. I also tried removing vibrato for an interesting effect that leaves only the amplitude component of natural vibrato.

Tuning vocals can be time-intensive, meticulous work, but I found that Waves Tune elevates the entire process with its elegant operation and superior sound quality. Price: $600, stand-alone; $1,000, part of Vocal Bundle.

Waves, 865/909-9200, www.waves.com. ■

Barry Rudolph is an L.A.-based recording engineer. Contact him via his Website: www.barryrudolph.com.

pre | eminence

- 8 Focusrite Mic-Pre's •
- 16 Channels of ADAT In & Out •
- Stereo 192kHz SPDIF •
- 2 Dedicated Headphone Busses •
- Software I/O Mix Control •
- Link Up To 3 Units Via Firewire •

Mac XP

Eight professional microphone pre-amplifiers form the foundation of Focusrite's new 52 channel Firewire interface.

For 20 years Focusrite has enjoyed a pre-eminent reputation for microphone pre-amplifiers. Today the focus is on Firewire interfaces for digital audio workstations. Whatever your choice of DAW software, you want the best mic-pre's for your projects to capture every subtle nuance from your music. Voices and acoustic instruments equally benefit from the excellent fidelity.

The Focusrite Saffire family of Firewire Audio Interfaces marries legendary mic-pre technology with pristine AD/DA conversion and Firewire interface engineering, optimised for the ultimate quality recording experience. For more than 25 years, Sweetwater has been known for outstanding computer audio expertise, service and support. Their Sales Engineers can help configure the perfect Saffire system for you, so call them now for more information.

Trust Focusrite with your talent to guarantee a pre-eminent performance.

audio heritage | sonic integrity | professional solutions

Sweetwater
music technology direct

800-222-4700 or www.sweetwater.com

Focusrite
www.focusrite.com

BY STEVE LA CERRA

Hear Technologies Mix Back System

Monitor Mix Control in the Engineer and Musician's Hands

Having trickled down from the rich and famous to the working musician, the continued popularity of in-ear monitors has created a need for high-quality, small-format monitor mixers with multiple output buses. Designed to fill this need, the Hear Technologies Mix Back provides 16 inputs, with 12 mono and two stereo output buses (16x12x2x2) in an 11-rackspace package. This versatile system also can be used for wedge and studio headphone cue applications or even zoned P.A.s.

But this is not just your average mixer. By adding the company's hub, personal mixers and remote, you can put monitor mix control directly into the hands of the musician and freely communicate to any or all of them from the mixing position.

LET'S HEAR ALL ABOUT IT

Each of the Mix Back's 16 channels includes rear panel jacks for balanced XLR mic, TRS line in and TRS insert jacks (tip = send, ring = return). A passive split enables each input to be routed through to another console, while ground lift switches on each channel disconnect XLR pin 1 on the output, eliminating ground loops. The split will pass either a line or mic signal, and because it is pre-everything (EQ, gain, insert and faders), the tap is appropriate for sending to a front-of-house console. Phantom power (+18 volts DC) can be applied on a per-channel basis. All outputs are duplicated on ADAT optical and HearBus connectors, either of which can be used to link the Mix Back with the Hear Back hub. (The ADAT optical outs can also be used for recording.)

TRS jacks are provided for the 12 mono and two stereo bus I/Os, as well as for two stereo effect returns, two mono effect sends and a stereo aux input designed to accept what Hear refers to in the Mix Back manual as a "perfect" mix (more on that later). The bus inputs enable you to link multiple units for systems that require more than 16 channels.

On the front are 16 channel strips, each featuring a highpass filter; rotary gain pot (with bi-color LED meter); 4-band EQ with fixed low- and high-shelf, and sweepable mid-bands; pan and level to each of two stereo buses; effects send level with a select switch for send 1 or 2; and level controls for each of 12 mono buses. Effects sends are fixed pre-fader. Given the general static nature of cue mixing, this is probably not an issue, but for applications in which the monitor engineer is constantly tweaking vocal levels or where the Mix Back is used to create an FOH mix, the need to tweak send levels every time a corresponding fader is moved could be annoying. A master section features output masters for each bus, stereo aux-in level, two stereo effect returns, a headphone monitor jack with volume control and input select switches, and a talkback level control.

MAKING IT PERSONAL

Clearly, the Mix Back's strength comes when used with the HearBus and Hear Back personal mixers. The idea is you create a killer stereo mix of the instruments (whether in a studio control room or from stage inputs). That mix is patched to the Mix Back's stereo aux in, which merges with the console's stereo outs (but not its bus outs). The HearBus Ethernet or ADAT optical connection carries the stereo mix and a series of individual signals to the Hear Back hub and out to Hear Back personal mixers (up to eight total), which are under the control of the musicians. The Mix Back remote allows the engineer to pick any or all of the output buses for talkback, enabling communication with any combination of performers without the need to scream over wedge mixes or "sealed" ears—very cool. When the Mix Back is used for zoned P.A., the talkback remote allows public address to be directed only to the required zones.

SOME CAVEATS

If you don't use the HearBus and Hear Back mixers, then certain limitations apply. The stereo aux-in feeds only the two stereo buses, so you'll have to patch your "perfect mix" into a pair of channels

A VIEW FROM THE INSIDE

"I recently used the ADL 600 on some of the vocals on Justin Timberlake's new album, *FutureSex/LoveSounds* with Timbaland. It has a really cool 'now sound' to it. I have one at my studio & one at Timbaland's."

Jimmy Douglass - Mixer/Producer
Timbaland, Justin Timberlake, Linkin Park, Jay Z

"To me, the ADL 600 mic preamp is impeccably clear & musical. This is the third record I've done with Gwen Stefani & the vocal sounds we've achieved with this unit are hands-down the best yet."

Greg Collins - Producer/Engineer
(pictured to the right of Anthony DeMaria)
U2, No Doubt, Jewel, Matchbox Twenty

"We use the ADL 600 on every episode of *Criminal Minds* as well as on all the feature films we score. It gives a great big super-sized sound with the ultimate in sonic detail. We call it our secret weapon!"

CBS *Criminal Minds* Composers:
Steffan Fantini, Mark Mancina, Scott Gordon & Marc Fantini

"The ADL 600 is stellar in uses as varied as concert pianos, vocals, drum room & acoustic string instructments. The ADL 600 finds that great balance of being forward & clear while not being overly bright, yielding a high resolution, articulated image."

Steve Kempster - Producer/Engineer/Score Mixer
The Bourne Supremacy, Training Day, Armageddon

ADL 600

{2-channel high voltage vacuum tube preamplifier}
Designed by PreSonus and Anthony DeMaria Labs

For more details on how these top producers are using the ADL 600 visit www.presonus.com/adl600.html

A view of inside of the ADL 600 shows why it has a sound like no other: high-voltage design, six military-grade vacuum tubes, dual custom-wound input and output transformers, oversized toroidal power transformer, sealed relays, polypropylene capacitors, switch attenuators, conductive plastic potentiometers and the list goes on.

Designed by PreSonus in conjunction with Anthony DeMaria to deliver the highest possible sonic performance and built by hand at the PreSonus factory in Baton Rouge, Louisiana, the ADL 600 is the new high-end preamplifier delivering big, clear, smooth and balanced tonality with a character and sound that keeps producers and engineers reaching for it over and over.

FEATURES

- High-Voltage Class A Dual Transformer Design
- +73dB Gain
- Selectable Microphone Input Impedance
- Switched Gain and Variable Fine Trim Controls
- Microphone, Instrument and Line Inputs
- Ultra Low Noise (-125dBu EIN)
- Variable High Pass Filter, 48V, -20dB Pad, Polarity Invert
- Analog VU and Fast-Acting LED Metering

Sweetwater
music technology direct

Call Sweetwater today at
800-222-4700 for a risk free demo
of the ADL 600 in your studio.

PreSonus
www.presonus.com

to send it to all 12 mix buses. Effect returns feed only the stereo buses, so you can't route effects directly to buses 1 through 12. Although the manual suggests that the Mix Back can be used for conventional wedge mixing, there are a few things to mention: There is no rear panel output for a monitor engineer's cue wedge, so you'll have to use the 'phones output as a feed to a power amp for the cue wedge. Also, the mixes can be cued only in pairs. For example, there's no way of listening only to mix 3 because it's paired with mix 4 in the monitor-select switch. Lastly, there is no PFL or solo for the channels, making the process of isolating a single channel a major production. You'll have to use one of the mix buses as an engineer's cue and then turn off all the other channels in that mix.

A CLEAN MACHINE

The Mix Back's signal path is very clean, with tons of headroom in the mic pre. The highpass filter (100 Hz) is especially useful on vocal mics, where it removed just about any sort of low-frequency crud you could imagine while somehow managing not to alter the sound of a male vocal. Although the high- and low-EQ bands are fixed (shelf), the mid-bands overlap by about 2.5 octaves, so the EQ can do anything you'll need. I especially liked what the low-shelf boost did for kick drum, and the way the high shelf brightened up acoustic guitar.

EQ is applied pre-fader, so any changes in channel EQ will be heard on all output buses. The Mix Back provides +18V DC for the phantom supply, so some condenser mics will not operate properly. Shure SM98, Sony C535 and C48, Neumann KM84 and DPA 4015 worked fine; Neumann U87, Earthworks TC25, Audio-Technica AT4050 and Audix SCX25 did not.

THE SCORE

Even though the Mix Back packs a ton of control into a relatively small space, all of its functions are clearly labeled, easy to access and logically organized. Buses 1 through 12 are laid out in pairs for easy stereo mixing to ear monitors, and the remote talkback is a home run—especially in applications involving zoned P.A.s where local paging is required or in situations where a monitor engineer may need to "target" private communcation with certain members of a band throughout the course of a performance. Metering is sparse but functional, and Hear Technologies includes a UV gooseneck lamp that cleverly illuminates the knob pointers so that once the lights go down, all mixes are clearly visible.

On the downside, the fixed pre-fader effects sends and phantom power might be an issue, and some creative signal routing may be required to get the stereo effects returns into the outputs of buses 1 through 12. The Mix Back's quick-start guide implies that the unit is a solution to every P.A. requirement when it is not. However, it *is* the nucleus for an incredibly flexible, high-quality monitoring system and can be used for a house mix in a pinch. To take full advantage of Mix Back's abilities, you'll need to add the Hear Back personal mixers, which turns the system into a powerhouse for in-ear monitoring or studio cue mixing.

Prices: Mix Back Mixer, $2,495; personal mixer, $229.95; hub, $579; and remote, $139.95.

Hear Technologies, 256/922-1200. www.heartechnologies.com. ■

BY BOBBY G. FRASIER

API A²D Dual Microphone Preamp

Vintage-Inspired Design With Conversion

The A²D dual mic preamp from API is the company's first foray into the digital realm, melding tried-and-true analog technology with two channels of A/D conversion in a 1U package. The A²D offers a discrete, Class-A design and has identical circuitry found in API's current 3124+ 4-channel mic/line preamp, including the 2520 op amp, RE-115 K mic input transformer and 2503 output transformer.

Each channel has an XLR input with a 1,500-ohm input impedance and a ¼-inch 470k-ohm jack for DI use. Gain starts at +34 dB and tops out at +65 dB. A 20-segment LED meter shows precise level control from -30 dB to +27 dB for each channel. Calibration is set at standard reference level: 0 VU = +4 dBu. Polarity reverse is provided (on the mic input only), and 48-volt phantom power is switchable individually for both pre's. A -20dB input pad is also built in. The 2:1 transformer tap gives an additional 10 dB of attenuation at the back end, letting me drive the front end harder. It offers user-selectable rates of 44.1, 48, 88.2, 96, 176.4 and 192 kHz.

Digital output is simultaneously fed to a standard single-wire AES/EBU XLR and an S/PDIF RCA connector. A 9-pin D-sub master output will slave multiple A²D units; all units will then clock to the first master. Converter timing is provided by an internal super clock generator. A sync-in BNC connector allows external clocking via super clock.

To access converters separately, a ¼-inch line input connector offers a direct insert into the digital section. This input is normaled to the mic pre's output. However, by taking the XLR output of the mic pre and sending that signal to additional processors, you can then return the signal back to the A/D converters at this jack, making this an insert send and return.

MAKING THE STUDIO ROUNDS

In use, the A²D is quiet (EIN is -129; at +4 it's 91 dBm) and flexible. You can get several sounds out of one mic position simply by using the gain, pad and 2:1 transformer tap. With two Audio-Technica AT4051 cardioid condenser mics in an ORTF configuration on a Fender Deluxe amp, a rhythm guitar sounded natural and punchy, as if the listener was standing next to the amplifier. Very little was needed to get the track to cut through in the mix.

Next up was a pair of BLUE Bottles above a drum kit. Again, the sound was natural; the cymbal tone was clear and forward. The room sound around the kit was great, adding in the space that I couldn't get from close-miking. The transient response will take you by surprise if you haven't worked with a preamp of this caliber.

On kick drum, using a Beta 52, the percussive click on top really gave some nice snap to the already well-defined fundamental. This is where the 2:1 transformer tap worked well. This track responded well to additional EQ, blending perfectly with an additional kick track recorded using Yamaha's Subkick. On snare, using a Sennheiser MD504, both the pad and the 2:1 tap had to be used as it was just too hot. All the superlatives apply: punchy, natural, a faithfully reproduced tone and that stellar transient response.

Recording cajon with an AT4051 was a piece of cake. For this track, I placed the mic 18 inches out and 45 degrees from the drum's leading edge to roll off some of the low end so that it wouldn't muddy the track. The preamp's midrange and transient response did the job. When miking a piano using two Neumann U87s, the midrange was too pronounced, making it come forward in the mix. The upper "interactive" harmonics were reproduced almost too faithfully, but the pad seemed to attenuate those harmonics and the 2:1 transformer tap in this situation. The particular "character" of the A²D coupled with the U87s would not have been my first choice on this particular cut.

I'M BEING CONVERTED

To test the A²D's digital capabilities, I fed the analog outputs directly to a Digidesign 192 I/O line input and the digital outputs into the 192 I/O AES/EBU input, going to two separate tracks. In comparing the tracks, I found that the 192 produced more information in the high bass and low-midrange regions, although it was slight, while the A²D reproduced the upper-harmonics with a bit more clarity.

The A²D converters also handled a guitar's dynamic range quite well, from heavy-handed rhythm to delicate finger-style, and the results were quite accurate. Approaching 0 dBFS, these converters (by comparison) gave me the sense of standing next to the instrument. The guitar sounded clean and accurate, with no "splatter" coming from the 5- and 8kHz region as I've experienced with other converters. The bass was solid and defined, and was in no way boomy or muddy; I simply heard what was there in the first place.

NEW SENSATION

API has taken its time jumping into the already-crowded converter market; the company has done its homework and produced pristine digital components that stand alongside some of the best stand-alone units currently available. This is a highly recommended addition to any engineer's collection and a definite upgrade for every project studio. Price: $1,995.

API, 301/776-7879, www.apiaudio.com. ■

Bobby Frasier is a digital audio product specialist, consultant and educator.

"Although South by Southwest has evolved over the years to include podcasts, video broadcasts and even text-message updates, the event is built on the idea that the best way to discover new music is face to face."
– The New York Times

music

THE SXSW MUSIC AND MEDIA CONFERENCE showcases hundreds of musical acts from around the globe on fifty stages in downtown Austin. By day, conference registrants do business in the SXSW Trade Show in the Austin Convention Center and partake of a full agenda of informative, provocative panel discussions featuring hundreds of speakers of international stature.

REGISTRATION DISCOUNTS AVAILABLE FOR SXSW 2007!

Visit **SXSW.com** to register to attend and get information on the conference, including up-to-date lists of speakers, panelists and showcasing artists.

SXSW

MUSIC MARCH 14-18 2007 AUSTIN TX

THE AUSTIN CHRONICLE

BLENDER MAGAZINE

Miller Lite

verizon wireless

Snapshot Product Reviews

AVANT ELECTRONICS MIXCUBES
Mini Reference Monitors

During the '70s, '80s and into the 1990s, Auratone 5C Sound Cubes were pretty much required in every studio. These little 5-inch monitors were just the thing for checking your mixes on AM car radios or mono TV speakers. But as TVs and car stereos improved, the need for Auratones (sometimes called "horrortones" by users) diminished. Today, Auratones are long gone, yet the need for a low-fi reference has returned in the form of computer speakers, boom boxes and other limited-bandwidth consumer systems.

Sensing the need to provide "real-world, bass-challenged" monitors, Avant Electronics offers MixCubes, which put a single 5.25-inch speaker in 6.5-inch square cabinet. But unlike their Auratone cousins, the MixCubes use a high-quality, cast-aluminum frame, full-range driver with 43-ounce motor structure in a solid, non-resonant MDF enclosure with a glossy, butter-cream lacquer finish.

Small details are not overlooked: Connections are via metal binding posts that accept spade lugs, banana plugs or up to 12-gauge wire, and the cabinet has a recessed mount with 27 standard 5/8-inch threads, allowing the option of mic stand placement. Also on the underside is a 7mm-thick neoprene pad offering acoustic isolation/skid resistance. The latter provides some isolation characteristics, but these are hardly the sort of speakers that would acoustically couple with studio structures and shake the place apart. Most users will appreciate the neoprene's anti-slide properties, which keep the monitors in place on an angled shelf or meter bridge.

The important thing about MixCubes is understanding that they are *not* meant as primary monitors, but as an adjunct to your present studio speakers. I listened to the speakers with a variety of power amps. With their high-SPL handling, these are like hearing a set of computer or boom box speakers, but without exhibiting breakup at high-playback levels. The MixCubes' working frequency response (-3dB down-point) is about 150 to 12k Hz, although the bandwidth extends much further than that. But in the mid-band (250 to 8k Hz) range where they're intended, the MixCubes are remarkably flat. And besides checking mixes for mono compatibility or translatability to lo-fi systems, the MixCubes yield a microscopic-style view of critical midrange tracks—such as guitar, keys or vocals—that would fall somewhere along a crossover point on most other monitors.

The Avant MixCubes are serious audio tools that fulfill a necessary role in any pro studio setup, and at a most reasonable street price of $199/pair, there should be some square, buttercream speakers gracing your meter bridge in the future.

Avant Electronics, 909/931-9061, www.avantelectronics.com.

—*George Petersen*

TASCAM CD-01U, CD-01U PRO
Studio CD Players

Tascam's CD-01U and CD-01U Pro are single-rackspace, slot-loading CD players designed for broadcast or recording studio use. They will play commercial CDs, CD-R/RW (12cm and 8cm sizes) and MP3 discs. The two machines differ only in terms of I/O and control ports: The Pro model has XLR balanced outs, while the CD-01U has unbalanced RCA jacks. Both have S/PDIF optical outputs and serial RS-232 control for AMX and Crestron system programming. The Pro adds an AES/EBU digital output and a parallel control port. An included infrared wireless remote duplicates all front panel controls.

Both machines include 20 seconds of RAM buffering for shock protection and relay I/O jacks for chaining multiple units together. In chained or relay playback mode, the second machine will start playing its disc as soon as the disc on the first deck ends. The relay-in jack can also trigger "fader start" used in radio broadcast. Other broadcast-related features include up to 10 seconds of programmable fade-in/out in 0.5-second increments; switchable mono output from the analog and digital outputs; auto-cue (where the machine pauses at the first sound and not the actual beginning of the recording); and auto-ready, which puts the unit into standby mode after playing a track.

For the studio, the CD-01U and CD-01U Pro offer A-to-B repeat playback or looping between two designated points in the program, a ±12.5-percent pitch control, a Key Original mode for changing the speed without changing the pitch, and programmed playback for programming up to 100 tracks in any order.

The large LCD is visible at a distance and

displays running or elapsed times, pitch and time settings, play modes and whether you're playing an MP3 disc. The headphone jack provided plenty of level for cueing selections while my studio monitors were playing. I found the programmed playback to be a great tool in auditioning different album sequences painlessly. Producers and songwriters love changing playback speed without altering pitch when working on new song ideas.

In these Internet days, the MP3 play function is a useful bonus. MP3 files must be recorded in ISO 9660 format (most newer burners and software already do this automatically) and play from the top-level directories downward as long as all files are in the first session—if you burn multi-session discs.

The rugged construction and advanced features of the Tascam CD-01U and CD-01U Pro are far superior to light-duty consumer decks. At $599 and $699, respectively, these are great additions to any pro studio.

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

—Barry Rudolph

OLD SCHOOL AUDIO VISTAPHONE
Studio Microphone

Okay, it's ugly and sounds bad, but that's exactly what makes the Old School Audio (OSA) Vistaphone (marketed by Atlas Pro Audio, $149) a fun and inexpensive way to add new color to your tracks. It is exactly what it looks like: a bullhorn repurposed as a microphone. Using an output transducer as a microphone is nothing new. Engineers have been using speakers as kick drum mics for years, and Yamaha even went so far as to market that idea in its Subkick mic. OSA takes a page out of Yamaha's playbook, but at the other end of the audio spectrum.

The Vistaphone has an XLR at the back and a stand mount at the bottom; the rest is up to you and your imagination. I first heard the Vistaphone used with a Shure SM57 recording a screaming guitar cabinet. The 57 sounded as you would expect in this situation, as did the Vistaphone—thin and narrow in scope. But when the Vistaphone's fader was slowly added to the 57's feed in the mix, it had the effect of bringing out the edge of the guitar, changing the blend and placing it squarely in your face.

Next, I used it to add some male vocal ad-libs to a cover of Marvin Gaye's "What's Going On." In the section where the song transitions into the sax solo, the singer rapped freely into the Vistaphone on two tracks that I compressed to death and panned away from center. Tucked way back into the mix, I had an instant vibe without ever having to touch an EQ, processor or plug-in. Lastly, I recorded an entire drum kit with the Vistaphone placed three feet in front of the kit, about chest high. I used that single mono track as an opener for the song, and then slowly faded that track out while I faded in the entire mix of the drums from the same take recorded traditionally.

Yes, the Vistaphone is a one-trick pony, but think of it as pepper: too much and you hate it, but just enough—used wisely—brings some spice to your world.

OSA, 866/235-0953, www.oldschoolaudio.com.

—Kevin Becka

LATCH LAKE MUSIC MICKING
Boom Mic Stand

You may not think a mic stand is stylish or critically important—that is, until you dump one of your favorite mics while tracking or can't place it *just right* in a typical (or not-so-typical) recording situation. Latch Lake's micKing boom stand and accessories make the task pleasant and do it in a completely innovative way. While the micKing doesn't have the rock-solid feel of a Starbird, at $750 it doesn't have the hefty price tag, either.

For starters, the clutches are the best I've seen. All are completely adjustable in fine increments, and the hardware is sturdy and easy to use. The back of the boom carries a heavy counterweight that lets you confidently balance even the heaviest mic arrays. The base is also innovative, with the bulk of the weight on the outer ring, providing far more stability than the stand appears to offer. The base interlocks with other micKing bases, turning storage into a neat proposition.

I've seen the micKing operate in a number of situations—some easy, some not—and it was a stalwart in every way. It held a Decca Tree with three BLUE OmniMouse mics without a whimper. Granted, in this situation the base had to be bagged as a confidence-builder, but when properly balanced, the micKing did a "stand-up" job. Next, I had it well extended holding the 8-mic Trinnov SRP surround array very close to the ground, and even then, could easily fine-tune placement. In this situation, having the stand's upright portion out of the way so that the player could get to the back of the rig was critical. The long boom extension and swivel head were especially helpful in this regard. They adjust easily without tools, and keep things solid.

In addition to the swivels, counterweight hardware and clutches for vertical adjustment, the stand comes with one of the coolest—and largest—Jam Nuts in the business. What is a Jam Nut? It's the flat, round nut that you tighten against the mic to make it stay in place. Rather than the measly ones you're used to, the micKing's are thick and large, allowing you to easily tighten the mic just right.

You can also add mics to your rig with the Xtra Boom accessories, which is especially helpful when miking a drum set. I had two micKings on either side of a kit performing overhead duties while several Xtra Booms were attached to each stand for miking the hi-hat, snare and toms. You can't fully appreciate this rig until you see how much neater and more efficient it is than a typical one-mic-per-stand setup. The Xtra Booms can also be attached to cymbal stands or any other upright mic stand.

After using this stand and its accessories in a number of situations, the conclusion is inescapable: In its price class, the micKing is the king of stands.

Latch Lake Music, 651/688-7502, www.latchlakemusic.com.

—Kevin Becka ■

JOAN OSBORNE EXPLORES HER COUNTRY ROOTS

By Elianne Halbersberg

It should come as no surprise that Joan Osborne wanted to make a country album. Born and raised in Kentucky, Osborne is a longtime, die-hard fan of the genre and can apply her vocal talent to literally any style, from rock to soul to blues to country and even the musical melting pot of The Dead.

Pretty Little Stranger, Osborne's first project for Vanguard Records, comprises 12 tracks: six originals and the rest written by such artists as Patty Griffin, Rodney Crowell, Jerry Garcia and Robert Hunter, and Kris Kristofferson. It was recorded in Nashville with producer Steve Buckingham and engineer Neal Cappellino. Buckingham is a four-time Grammy winner with 27 Number One singles and at least 150 albums to his credit. He was VP of A&R for Columbia Records for 10 years and is now senior VP of Vanguard and Sugar Hill Records. Cappellino, who this year won a Grammy for his work with Del McCoury (Best Bluegrass Album, *The Company We Keep*), has recorded for years with Buckingham and producer Gary Paczosa as their assistant engineer and Pro Tools expert. He engineered *Pretty Little Stranger* while Paczosa and Alison Krauss were working on Alan Jackson's latest release, *Like Red on a Rose*. (See "Recording Notes: Country Royalty" in the November 2006 issue.)

Buckingham's introduction to Osborne was her appearance in the documentary *Standing in the Shadows of Motown* (2002). Watching it in a Nashville movie theater with friends, he recalls, "Joan came on and sang the old Jimmy Ruffin tune 'What Becomes of the Brokenhearted,'" Buckingham remembers. "We'd all heard of her, but we had no idea she had those pipes. She was the highlight of the movie.

"I was putting together a Dolly Parton tribute album. I wanted to get Joan on it and she agreed. John Leventhal did her track 'Do I Ever Cross Your Mind,' and it put Dolly and me on the floor; we loved it. So I started e-mailing Joan about doing a roots-type album, and it took two years to get around to doing this."

Buckingham's key players on the album were drummer Eddie Bayers, bassist Michael Rhodes, and guitarists Steve Gibson (electric) and Bryan Sutton (acoustic). Recording with Osborne, he says, "was magic. There were tears in the studio. It was emotional for everyone. Of all the artists I've worked with, Joan is in the top five. Her live vocals were astonishing, yet she kind of shrugs it off, like Dolly does."

Pretty Little Stranger was Cappellino's first time working with the vocalist and, he says, "It was definitely a 'pinch me' experience since I've been wearing out her records from *Relish* to *Righteous Love* to *How Sweet It Is* for years, and always thought of her as a pinnacle artist. When Steve told me he had been talking to her about doing a record, I just about busted. I remember thinking, 'I've got to work on this project.' I was absolutely emphatic about it when I talked to him."

Pretty Little Stranger was cut at Omni Studios (Nashville). "I went in with the assistant, Bob Ingison, the day before the session to load in gear and get set up, work out bugs," says Cappellino. "We just got it ready to roll as much as possible so we could hit the ground running when everyone came in. One thing I did that I haven't done before is check the phase of the cue system to make sure it corresponded to what was happening acoustically in the room. This may seem mundane, but what is right in the control room may not be in phase with the headphone mix everyone's getting. I wanted to make sure the headphones sounded great, and I'm especially keen on making drummers happy. Everything at Omni was rock-solid, not a single glitch, and you couldn't ask for a more competent assistant than master Bob."

—CONTINUED ON PAGE 141

BRIAN SETZER'S LUCKY "13"

MORE ROCK, LESS BILLY

By Barbara Schultz

Brian Setzer makes a lot of great albums, but he doesn't spend a lot of time in studios. His MO is to begin a new project well-prepared, whether that means writing charts for his 18-piece big band—the Brian Setzer Orchestra—or just bringing in the right rock 'n' roll crew that can speak his musical language and nail a song on the first take. He doesn't like to labor over sounds, and he doesn't want to give music lessons. So he's been happy to work with the same producer/engineer team—Dave Darling and Jeff Peters, respectively—on his past six-plus albums.

"Dave is a producer, but he's also a musician," Setzer says. "I need someone who reads and writes music like I do. I can't say to most producers, 'That minor-seven-flat-five, there's something wrong with that chord.' Most producers don't know what you're talking about, but we speak the same language and we get the job done twice as quick. We'll look at each other when a wrong note goes by, or we'll be in a mix and I'll start to say, 'The guitar is…' and he'll say, 'The second verse could be louder.' We finish each other's sentences."

Darling and Peters started working with Setzer in 2000 when the producer and engineer were brought in to remix a couple of songs on the Brian Setzer Orchestra album *Vavoom!*, including the single "Pennsylvania 6-5000." "I did a remix version of that tune with a lot of added material—strange-sounding stuff—and Brian's manager and the guys from Interscope loved it, but they thought Brian would hate it because they think of him as a purist," Darling says. "He's not just a purist; he just has an enormous amount of respect for the type of music he's doing."

Working with Darling, Setzer has been

—CONTINUED ON PAGE 142

GLADYS KNIGHT SALUTES GREAT JAZZ WOMEN

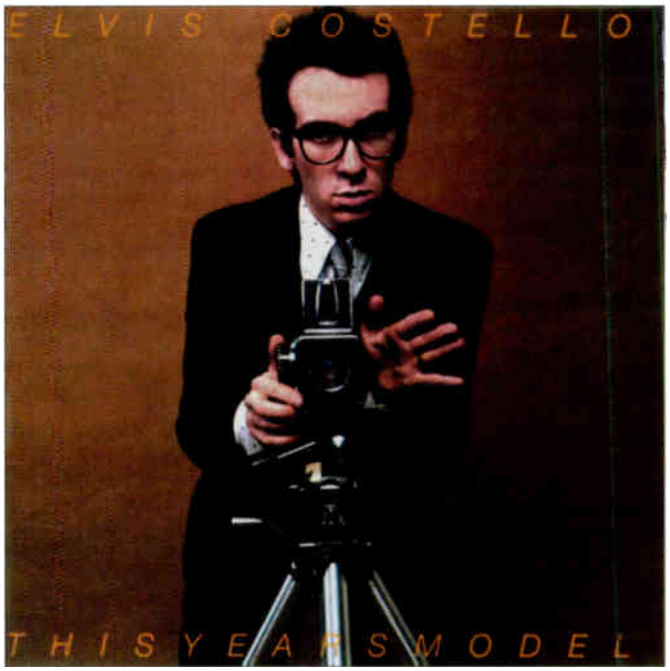
By Chris Walker

Before Gladys Knight became one of the most successful soul singers in America—fronting The Pips for a string of immortal classics, and then venturing out as a solo act—she was a jazz singer in her high school big band in her native Atlanta, learning at the knee of a man named Lloyd Terry, who in addition to being an educator, also led the top jazz group in the city. Terry's and Knight's career paths diverged early on, but the singer never forgot her first mentor, and three years ago, they got together to begin work on a dream project for Knight: an album of her singing songs popularized by some of the great women singers who had inspired her. Unfortunately, Terry died before the album could be made. But now we have Knight's *Before Me*, which undoubtedly has Terry smiling in the Great Beyond. Produced by Grammy-winners Tommy LiPuma and Phil Ramone, it features Knight at her very best, singing songs by the likes of Ella Fitzgerald, Billie Holiday, Sarah Vaughan, Dinah Washington, Nina Simone, Lena Horne and Mahalia Jackson.

Knight stresses that the project was not an attempt to get on what she calls "the standards bandwagon" nor is it just some jazz experiment. "I wanted something from all the ladies, but more personal," she says. "Such as, 'Listen to these women, listen to their music, look where they've been and look how they're music has survived.' I wanted all that to come out through this music. I got a chance

—CONTINUED ON PAGE 143

ELVIS COSTELLO & THE ATTRACTIONS' "PUMP IT UP"



By Barbara Schultz

Elvis Costello began his music career with the purist intentions: "My ultimate vocation in life is to be an irritant," he told the *New Music Express*' Nick Kent in 1978, "someone who disrupts the daily drag of life just enough to leave the victim thinking there's maybe more to it all than the mere hum-drum quality of existence."

This was during the heady days of English punk, when Costello was performing for journalists nearly as much as for fans and cultivating the image of a tortured, angry young genius. He wasn't really punk; he was too literate for that. He was a young singer/songwriter/bandleader whose varied influences included big band jazz (including his own trumpet-playing dad), The Beatles, Motown, Burt Bacharach, George Jones and The Clash. But anger was the mood of the day.

Costello's first record deal came by way of his friendship with Nick Lowe, who was enjoying success in London's pub-rock scene. Through Lowe, he met manager Jake Riviera and was signed to Dave Robinson's Stiff Records label. Riviera and Lowe helped put together a band to accompany Costello on his debut album, *My Aim Is True*, which was recorded in London's small Pathway Studios with various musicians from the San Francisco Bay Area band Clover (whose frontman had been Huey Lewis) and from The Rumour (who also played with the wonderful singer/songwriter Graham Parker) and Lowe producing.

That first album got a lot of attention, and some of the singles—"Watching the Detectives," "(The Angels Wanna Wear My) Red Shoes," "Alison"—remain staples in Costello's concert set lists. But the signature sound fans would come to identify with Costello wasn't fully realized until the Costello camp assembled The Attractions. Drummer Pete Thomas, bassist Bruce Thomas and keyboard prodigy Steve Naive first appeared on the artist's sophomore effort, *This Year's Model*, which includes this month's "Classic Track," "Pump It Up."

In the liner notes to Rhino Records' deluxe edition of *Model*, Costello acknowledges the band's effect on the album as a whole: "The Attractions made a huge difference to these songs. '(I Don't Want to Go to) Chelsea' had originally used the same stop-start guitar figure as The Who's 'I Can't Explain' (or for that matter, The Clash's 'Clash City Rockers'). Now Bruce and Pete came up with a more syncopated rhythm pattern and Steve found a part that sounded like sirens—although he rarely played the same thing twice, so you had to pay attention."

The newly formed group had time for some rehearsals and live dates in support of *My Aim Is True* before they went into London's Eden Studios to record. Lowe was again the producer, and the engineer was Roger Bechirian, who had been on the technical staff at Eden for several years at that point and had already done a good deal of remix work for Stiff Records.

"Dave Robinson was never happy with the first mix or the second mix or the third," Bechirian recalls. "He would always end up with the tenth or the twelfth mix before he was vaguely happy. So a taxi would turn up with a whole lot of 2-inch tapes in the trunk, and I would just remix all kinds of things."

Among those remixes had been the U.S. single versions of Costello's "Red Shoes" and "Alison." "I think that was kind of a test, more or less, with Nick, Elvis and Jake to see how we fit together," Bechirian says. "We got on very well. I think Jake was looking for someone to partner with Nick in the studio because Nick was completely hopeless technically. Nick's thing was more about the vibe; it was all about getting the really great, exciting take. He might coach the way they were thinking about stuff: 'Think about doing it this way, be more aggressive at these points,' but it was all about getting that excitement from the band."

In his album notes, Costello writes, "Roger was a calm and practical foil to Nick's instinctive and emotional approach to recording. It was Roger who had the task of making a sonic reality out of Nick's directions, such as, 'Turn the drums into one big maraca' or, 'Make it sound like a dinosaur eating cars.'"

"Pump It Up" could very well be the song in the "dinosaur eating cars" reference. Written by Costello during the touring that preceded the *Model* sessions (and during, he says, a night of "what might be politely called, 'assisted insomnia'"), it's intensely rhythm-driven, to the point where rhythm and melody are almost one. Naive's Farfisa organ part uncharacteristically models the driving drum and bass lines, and Costello's vocal is raw power on this rhyme-bending indictment of excess: "She's been a bad girl/She's like a chemical/Though you try to stop it/She's like a narcotic/You wanna torture her/You wanna talk to her/All the things you bought for her/Putting

up your temperature/Pump it up..."

The basic tracks for "Pump It Up" were recorded midway through the album sessions. Bechirian says he would typically set the band up in a semicircle, facing Pete Thomas' kit, which was set up in a corner of the rectangular studio. They captured those band tracks live to an Ampex 16-track at 15 ips. Bechirian says he used a reliable mic setup for the band: Neumann U87s on toms, AKG 451s overhead, an old Beyer 201 on kick and another 451 on snare. Bass and keyboards were taken direct, and Costello's guitar amp was miked with a Neumann U47 and a Shure 57. His vocal mic, however, was a little more unusual. "That was a mic that I'd actually found at Beyer's offices in South England, near Brighton, called the Soundstar," Bechirian recalls. "It was a dynamic mic, a wonderful thing with a shiny chrome front and gray plastic, and I used that exclusively on Elvis because he had a very powerful voice and also an enormous amount of water vapor and spittle, so condenser mics would cancel out halfway through a take. So I ditched all of those and went for a dynamic mic. It pulled out the midrange just the way you wanted and created that really intense vocal sound he had.

"Most of the tracks on *This Year's Model*, including 'Pump It Up,' were the live basic tracks," Bechirian continues. "There may have been a word here, a line there that was redubbed because it was slightly out of tune or [Costello] wanted to change a phrase, but it was almost entirely intact from basic tracks. All the energy was really captured at that moment."

And according to Bechirian, the energy was considerable. "Everybody was very focused," the engineer says. "The whole place was charged with electricity during those sessions. They knew they were about to break big."

The entire album was mixed at Eden by Bechirian, with Lowe and Costello in attendance. They worked on Eden's custom console, which Bechirian helped build in the early '70s when the studio moved from its previous location to its current one in Chiswick, West London. "It was based on Neve circuitry, and designed by Chris Glass, who was an absolute electronic genius, and Mike Gardner, who is still one of the studio owners and who's still keeping the place going meticulously well. The amplifiers have the most incredible headroom. You could throw anything at them, and like Neve, they just would not break up. It had a really clean signal path. We even built our own compressor and limiters, which were based on Audio Design circuitry—there were six of them built in.

"[During the mix,] Nick wanted to make sure the bass sat in well with the kick," Bechirian recalls, "so we worked on that quite a bit. The only other thing really was to make sure Elvis' voice was always up front. I think Elvis thought his voice was harsh. I remember quite a few times when he'd wince when it was a harsh sound, but it did work."

This Year's Model was released in spring of 1978 to rave reviews. The album peaked at Number 30 on the U.S. charts, and was followed by Elvis Costello & The Attractions' first full-blown U.S. tour. They made three more wonderful albums with the Lowe/Bechirian production team before Costello began to spread his artistic wings in all manner of directions and genres. Eventually, The Attractions disbanded, but almost all of Costello's subsequent projects have featured Pete Thomas and/or the ultra-talented Naive. "Pump It Up" remains a perennial encore at almost all Costello concerts that don't include a symphony orchestra.

Bechirian became an independent engineer/producer after *This Year's Model* was released. He continued engineering and producing bands post-Costello and with Costello. Subsequent clients included Squeeze, Dave Edmunds, Lowe, Carlene Carter, The Undertones and more. He was also called in to remaster Costello's early albums for reissue. But several years ago, he switched gears and now operates his own artist-management firm, Trick Management. He says he sometimes misses studio work, but a return to that would require the right time and the right artist. "So," he says with a laugh, "Bruce Springsteen, if you're listening..." ■

JOAN OSBORNE

FROM PAGE 138

Equally impressive is the clarity of Osborne's vocals, with every nuance out front. "It's worth noticing that this record is different from her other records that are more rock/R&B-infused," says Cappellino. "I knew that the tracks would be more sparse and minimal, and that would require or accommodate a different vocal approach. So first and foremost, I think the arrangements allow the vocal to be what it is. We used quite a bit of her tracking vocals on many songs, and on at least one song she nailed it with the band. It was an impressive example of what a great vocalist can do to inspire a performance from a band in the studio. She was always on; there's no other position for the switch. Anytime she's singing, it's for real.

"We did a mic shoot-out with five or six different mics, and I had prepared some tracks off of Joan's previous albums for her to sing to," Cappellino continues. "We all agreed on the mic selection, and during tracking I auditioned a couple of preamps and settled on the Mastering Lab. In the mix stage, instead of heavy compression to control levels, I did loads of rides in Pro Tools and a fair amount on the console, too. The volume automation on the screen starts looking like a lie-detector graph, but adjusting in Pro Tools allows me to really dig in for things. It also affects how the signal hits the outboard processing, and if I feel like it's in the sweet spot there, I can grab a fader on the console. More often than not, I'll be doing manual de-essing, too."

Buckingham's production style is directorial in its approach. "I have studied how old [film] directors put together an atmosphere where people are free to create," he says. "That's what I try to do. There's no set way I do it for each artist, but that's the overall way I look at it. I have arrangements together by the time we go in, the number charts are sketched out. It's not left up to chance. With Joan, we worked very fast. Nothing needed more than three takes."

"One of Steve's strong points as a producer is the way he casts characters for a project," adds Cappellino. "There's a specific reason for every one of us being there, and that results in a lot of unspoken common ground. We're all on the same page walking in the door, and you're there to do exactly what it is you love to do. As an engineer—and I imagine for the musicians especially—that breeds confidence and cohesion.

"I think a good producer/engineer combination also includes some degree of overlap between the two roles—an engineer who can comprehend music and a producer who understands the technical process," he continues. "Although this is the first album I've been in a mixing role with Steve, we've worked together on a number of projects over the last six years, so there's a trust and mutual respect for each other's talents. In addition to the engineering responsibilities, I see myself in a support role to the producer and that means striking a good balance of when to speak up unsolicited and when to keep my mouth shut. But if Steve asks for my input, I want to make sure I have something to offer. On Joan's project, whether it was me asking for input on a mix or Steve asking for an opinion on a take, we seemed to confirm each other's suspicion more often than not. Most importantly, there are no egos

and it's understood that everyone is trying to serve the music."

Osborne's vocals were tracked on a Neumann M49, which Cappellino says is probably a 1950s vintage and came from Blackbird Rentals (Nashville). As for the rest of his arsenal, "The list is growing," he says, "but I'm always checking out different pieces and seeing just what I end up reaching for most often. More recently, this has included ribbon mics. I've probably been slow to the table with ribbons for whatever reason, but a lot of times, they're the sound I'm looking for. Daking and API preamps are pieces I'll almost always use. In the digital domain, if we're in that world, I like using [Audio Ease] Altiverb, [Digidesign] ReVibe and the new TC Electronic 6000 plug-ins for effects. They sound great, [are] easy to recall and I can bus to them internally from the console or both."

During the past few years, Osborne has become more relaxed as a singer and a performer. "I tended to overpower the material because I have such a strong voice," she says. "As a performer, I have a lot of passion that I bring to what I do, and maybe it was overdone. As a songwriter, I'm always exploring and challenging myself to express things more simply. I find satisfaction in that.

"Classic country songs use very simple, direct language to describe universal experiences so that anyone can understand," she continues. "My writing in the past was abstract, and it was a challenge to say what I meant and to be poetic in a simple way. I haven't mastered it yet; I'm still trying. Now that I've managed to write in a simpler style, it will be interesting to try to keep one foot in each area and see if it ends up in the middle or some of both. I feel that both are effective and can be very beautiful, and now that I've discovered a new way of working, I don't want to abandon it." ■

BRIAN SETZER

FROM PAGE 139

able to push the envelope in all of his musical incarnations. He may still make 1950s-style rockabilly records occasionally, but he also feels free to experiment, and his latest album, *13*, takes him way outside that box. *13* is punk, it's rockabilly, it's rock, surf, sci-fi—it's all original Setzer, and it's probably the album that best displays his guitar virtuosity.

"Brian continues to amaze me as a guitar player," Peters says. "I think he's one of the most underrated guitar players there is. The rock riffs he came up with on this record are fantastic."

Setzer began making *13* by recording some simple demos and sending them to the core bandmembers—drummer Bernie Dresel and stand-up bassist Ronnie Crutcher—so they could begin thinking about their parts. Then he went into Pachyderm Studio, a professional facility that's set in an arts-and-crafts house about half-an-hour from Minneapolis (Setzer's newish hometown) to track Setzer's guitars and electric bass, and Dresel's drums to Pro Tools with the help of operator/staff engineer Brent Sigmeth.

"To get a good rhythm track, you've got to have that big gymnasium room," Setzer says. "A lot of people think they can make records in their closet, but I need that big open room and a wood floor."

> I didn't use any old guitars. First time I've ever done that. I plugged them in and they just sounded so good. This is more a 'rock' than a 'billy' record. They just cranked a little better.
>
> —*Brian Setzer*

The high-end Pachyderm Studio has that great big tracking room, as well as a large Neve 8068–centered control room with Genelec, Tannoy and Westlake monitors. Peters used some of the modules in the Neve, but he also brought along his own arsenal of rack gear, plug-ins and mics. "I'm a fan of the Great River products," he says, "so I used a lot of those preamps for guitars and vocals."

Setzer sang into a Neumann M49 microphone. "For the big band projects, we use the RCA 77DX," Peters explains, "but on *13*, we wanted more of a classic rock sound and the M49 sounded fantastic on his voice. Same thing with guitars. This time we did close-miking with an SM57 and a Sennheiser 409. I've traditionally been using an RCA 44 or the AEA 44 for Brian, but we wanted a different sound."

Different guitar sounds were also realized with different guitars. Setzer's gear on this album included a new Gretsch SSLVO and another hot-rod Gretsch. "I didn't use any old guitars," Setzer says. "First time I've ever done that. I plugged them in and they just sounded so good. This is more a 'rock' than a 'billy' record. They just cranked a little better."

Darling also got Setzer unwittingly to experiment with different amps. "Brian generally uses Gretsch guitars and Bassman amps," he says, "and he gets all the tone out of his fingers. But a few records back, he started using some smaller amps—Supro and some vintage amps that were crunchier. This record, since we knew going in we were going to experiment a little bit, I put a secret amp in the hallway, another amp in a different room and a bank of pedals on it, and I'd go out there and stomp and hope Brian wouldn't figure out what I was doing and fire me."

After the basic tracking in Pachyderm, the project moved to Flowers Studio in the Uptown neighborhood of Minneapolis. Flowers—which offers a vintage Trident 80 Series board, a wide array of mics and outboard and UREI 813B mains—is a smaller, artist-oriented facility owned by producer/engineer Ed Ackerson. There, they recorded more instruments, overdubs and more guitars.

"It's actually an old flower shop," Setzer says. "It's a cool room. The guy [Ackerson] has a million guitars and a million amps, and it's fun to fool around with all that stuff: 'Get that old Vox amp. Let me plug the Rickenbacker into that thing.' That's what happened there. Incendiary things like having a whole slew of guitars laying out sometimes makes a big difference."

One of the songs that blended guitar tracks from both studios was "Bad Bad Girl," which Darling describes as "Japanese sci-fi surf." "In Pachyderm, we did the basic track," he explains. "We did that several times, actually, because we kept speeding it up until it was pretty frenetic. By the time we got to the overdubs, we decided to do a double drum set on it. I think it started out as a ride overdub, but Bernie Dresel started playing the kick and it had this off-kilter '70s vibe to it, so we kept it. And then every overdub we made, we just made sure if fit the criteria of Japanese sci-fi surf. If it wasn't Japanese, sci-fi or surf, it didn't live!"

"That's a really kooky track," Setzer says. "I play a crazy augmented scale, and then I played the whole-tone scale down. And I wanted it to sound like a Shamisen, the Japanese string instrument. So I just tuned up a tenor banjo, and we did a lot of other weird tricks on that. It almost sounds like there's something going backward or overdriven. The song became more surreal as we worked on it. I love songs like that because it's a rockabilly song, but it's got all this weird, crazy stuff most guys wouldn't have thought about doing back then."

"Guitarists, or just about anyone, are go-

ing to like that he stepped out of the traditional thing, and it shows that he's capable of just about anything," Peters observes.

Darling mixed *13* on his own in Pro Tools at a friend Rodger Carter's L.A. studio called The Doghouse. "Brian's comfortable knowing he can leave and I'll get it done," Darling says. "We discussed things before I went in to mix, and we wanted to put an aggressive, modern-sounding mix on an otherwise almost retro record. Some of the things that can take a lot of time on other records don't take a lot of time with his. Every time he plays a solo, it's a keeper. It's more about deciding what we want, not if it's good enough. And we talked about the fact that what we wanted was extremes. If it's a loud song, let's make it really loud. If it's an odd song, let's make it really odd. If it's a fast song, let's make it really fast! He probably could have called the record '*Really*.'" ■

GLADYS KNIGHT

FROM PAGE 139

to meet and work with every single one of them, except Billie Holiday [who died in 1959]. They were all very encouraging and told me how proud they were of me." (The album features standards by Duke Ellington, Count Basie, Billie Holiday and more.)

In choosing to work with LiPuma and Ramone, Knight enlisted two craftsmen with deep experience in sophisticated arrangement and recording. Then, on the musical side, she got to front an incredible band of younger and older players, including trumpeters Chris Botti and Roy Hargrove Jr., saxophonist David "Fathead" Newman, keyboardist Joe Sample, guitarists Russell Malone and Anthony Wilson, bassist/bandleader John Clayton, pianist/arranger Billy Childs and the Clayton-Hamilton Orchestra. "I walked into the studio and there they were!" exclaims Knight. "I said, 'Oh my goodness. Is that David "Fathead" Newman, Roy Hargrove Jr.? And they're getting ready to play on *my* album?' Then I had John and Billy as the arrangers—they gave me the best of the best. I've never had so much love, care, attention and—*royalty* around me like that." [Laughs]

Vocally, the project was a nice change of pace for Knight, who, of course, has always been known as a powerhouse—after all, she was originally recruited by Motown to be the label's answer to Atlantic's Aretha Franklin. "Jazz has been long associated with being cool and not over the top," she notes. "It soothes the soul and is easy to listen to. So the performance that you do is different and I enjoyed it for that reason. I just wanted to tell the story and sing those great melodies and lyrics created by great writers." She collaborated with LiPuma and Ramone to determine the best keys and tempos for each song.

Although LiPuma and Ramone are based in the same city (New York City) and are good friends, they worked independently with different engineers at separate studios

Phil Ramone and Gladys Knight

from October to December 2005. LiPuma, with Al Schmitt engineering, chose his favorite, Capitol Records Studio A in Hollywood, renowned for being a great room for large ensemble performances. Ramone actually was slated to also work at Capitol, but Knight was touring through the East Coast at the time, so he opted to do sessions at Right Track in New York City instead, with Frank Filipetti as his recording engineer.

LiPuma notes that working on an album such as this, with timeless material and a singer who usually sings in other styles, "You really have to keep the artist in mind and the parameters you know they're capable of doing. The most important thing is that you cast the songs correctly so they feel comfortable singing. If the artist can't get a relationship with the song, it doesn't matter how good it is. [For Gladys,] I think this was music that very close to her heart and songs she's wanted to do for years."

Ramone adds, "Her ability and sensibility of music just made it so much easier than trying to fight uphill or do something that's not quite natural. Tommy LiPuma and I hit a path of great musicality together, even though we recorded separately. But we did listen to each other, so we didn't suddenly have an opposite-end album. The drive of the album is Gladys; [LiPuma] took more of the big band kind of groove, while Billy Childs and I took kind of the Dinah Washington period. I like the small horn approach with nice strings added, and think more about how the rhythm worked as a group more than just a great rhythm section in the room."

According to Schmitt, who has worked regularly with LiPuma for some 35 years and has also recorded a lot with Ramone, the setup for the sessions was very straightforward, much like a vintage recording. "She sings so well and did most of the material live, with some overdubbing, usually about two sessions a day," he relates. "I set up the same way I used to with Rosemary Clooney [and others like her]. We try to capture that and make everyone comfortable, almost like they're doing a live performance.

"It was recorded a little differently, however, because of the Clayton-Hamilton Big Band, who play together all the time," Schmitt continues. "They have a lot of power, but she did, too, and kicked everyone's butt—she can sing. It's not a pop record or band; it's a big swinging one and more toward jazz. On this one, we had five trumpets, four trombones, five saxophones, four in the rhythm section, and at some point there were 12 violins, six violas and four cellos. We used a lot of the vintage microphones—Telefunkens, Neumanns and on Gladys a Neumann 67. Also, I have a bunch of special preamps such as these prototypes from Upstate Audio, as well as Neve, Mastering Lab, Martech and Studer. Basically, I try to match up certain preamps with certain instruments. On the brass/trumpets, Mastering Lab; bass and piano, Studer Valve; on drums, the Neve 1073, for example." The project was tracked to Pro Tools HD at 96 kHz, and then mixed at Capitol Studio C in January 2006 with Schmitt working on a Neve V Series desk. Everything was recorded so well that he had little problem matching the sonics of the different sessions.

Schmitt, too, was very enthusiastic about the project: "I've been doing this a long time and worked with probably every great singer in the world, from Barbra Streisand to Rosemary Clooney to Diana Krall. Gladys is good as they come. On top of that, she comes prepared, knows what she's doing and is the sweetest person to work with."

"It was glove-in-hand all the way," Ramone remarks. "I remember one of the dates when the musicians started tapping their music stands. Billy [Childs] asked, 'What's that?' 'It's applause man, they love what you're doing!' And she was the same way—it was a joyful experience."

LiPuma adds, "It's a pretty organic record without too many tricks. When you get down to it, there are no secrets here. You got great material, a great artist and great musicians—just get out of the way." ■

L.A. GRAPEVINE

by Bud Scoppa

For Adam Beilenson and Mike Kerns, it turns out that more is more. The longtime partners own and oversee the biggest music-dedicated studio operation in L.A.—and quite possibly the largest in all of North America. Their empire now encompasses Paramount Recording in Hollywood, Ameraycan in North Hollywood and Encore in Burbank, as well as NoHo's Third Stone, which they lease out. They began their expansion in 2001, a full 14 years after moving into the four-room Paramount facility on Vine Street just east of Santa Monica Boulevard—right across the street from the mini-mall that sits on the former site of Gold Star (of Phil Spector and Brian Wilson fame). But I digress.

From left: Paramount co-owner Mike Kerns, producer Butch Vig and Paramount co-owner Adam Beilenson

By 2001, Paramount had been doing so well for so long as a result of its pro quality and moderate pricing that when Ray Parker Jr. put Ameraycan on the block, Beilenson and Kerns jumped at the opportunity to open a facility in the Valley. One of the keys of today's studio business, according to Beilenson, is location, location, location.

"From being in Hollywood every day, Mike and I realized that there were a lot of clients and potential clients who were working in studios in the Valley, and *preferring* to work in the Valley, and therefore, we really wanted a presence there," he explains.

These guys have a knack for making the right move at the right time—like their most recent move in 2004, when they snapped up Encore, formerly part of the storied Kendun complex on Glenwood Place in Burbank (as was the rival high-end studio now bearing the name Glenwood Place) just as prices were bottoming out post-downturn. "That was an opportunity we felt we could not pass up because the price was very depressed as a result of what was going on in the business," Beilenson recalls. "And when it got to the point where the real estate, the equipment and the value of the business were really, in our minds, far higher than the asking price, that's when we made the move. And keep in mind that we were aware that Enterprise and O'Henry had closed, Royaltone had been sold, and with a number of Valley studios in that area no longer in operation, it seemed a logical move, and it turned out to be a pretty safe one."

The Encore acquisition brings Beilenson and Kerns' total to seven tracking rooms, with an SSL console in every one of them, starting with a pair of 9000Js, one in Paramount Studio C and the other—a 104-input Rolls Royce (picked up from Enterprise)—in Encore Studio A. Encore Studio B sports an 80-input 4000 G+, one of three G+ boards in the arsenal. (Additionally, Paramount Studio E houses a busy mastering room that is now the home of Mike Lazer, who mastered Gnarls Barkley's smash album there, as well as incumbent A-lister Bill Dooley. The room is outfitted with a Pyramix workstation and ADAM Audio S4-A monitors.)

Beilenson and Kerns consider Encore their showplace, and for good reason: The facility was designed by legendary acoustician/studio designer Tom Hidley. The new owners have been careful to preserve the details of Hidley's classic innovations while upgrading the gear to state-of-the-art levels, starting with the SSLs, each of

—*CONTINUED ON PAGE 148*

NASHVILLE SKYLINE

by Rick Clark

When one thinks of Nashville music, world beat, fusion and new age don't readily come to mind. But as the city's artistic and recording communities have expanded during the years, it's become home for a wildly diverse blend of players. Over time, the ones who stay realize there is plenty of life outside of Music Row's mainstream country scene.

Producer/engineer/musician/composer Kirby Shelstad (www.kirbyshelstad.com) has made a name for himself as one of the area's finest drummers, percussionists and synthesizer talents in the areas of world music, new age, fusion, rock, jazz, blues, classical, feature-film composing and pretty much anything musically exotic. In 1979, Shelstad came to Nashville from Minnesota, where he had left college to take a gig on the road, only to get fired somewhere in Kentucky after three months. Instead of going back home to finish school, he checked out Nashville and has been here ever since.

"I never thought I'd end up in Nashville, actually," says Shelstad. "When I got here, it was like a cultural wasteland compared to Minneapolis, but at the same time, it was comfortable here and the cost of living was so low that it didn't take long to get by totally being a musician."

In 1997, Shelstad was nominated "Percussionist of the Year" by the Nashville Music Awards and has performed and recorded with such notables as Leon Russell, Mark O'Connor, Béla Fleck, Clarence "Gatemouth" Brown, Charlie Rich, Dobie Gray, New Grass Revival, Kathy Mattea, the Nashville Symphony and many more. Shelstad also has considerable experience in feature-film scoring, including the bizarre independent art film *Existo*, four Ernes' features for Touchstone Pictures films and the award-winning children's series on CBS, *Hey, Vern, It's Ernest!*, which he scored with best friend and former Minnesotan Bruce Arntson. Shelstad has also composed numerous soundtracks for educational films, documentaries, television commercials and CD-ROMs for clients

NEW YORK METRO

by David Weiss

including National Geographic, Warner New Media, Jeep, Toyota, Bridgestone, TNN and others.

"Film work is great but is also complex and tedious. You start out working 12-hour days and eventually work your way up to 20 hours!" says Shelstad. "The deadlines can be intense, but I'm glad I've been able to learn these skills."

Shelstad gives credit for the development of his engineering chops to Rich Schirmer, who engineered the movies he scored, as well as Gene Eichelberger, Lynn Peterzell, Willie Pevier and Giles Reaves. "Giles is a great player, engineer and close friend, and he has taught me a great deal in Pro Tools and other soft and hard synths," he says.

Beginning in 1990, Shelstad began studying tabla drumming and Indian classical music with the tabla masters Pandit Swapan Chaudhuri and Ustad Azkir Hussain at the Northern California music school run by sarod legend Ustad Ali Akbar Khan, one of India's most respected musicians. He also learned about South Indian classical singing from Dr. Sankaren Mahadevan and Western singing techniques with Kathy Chiavola.

Over the years, Shelstad has released seven fine CDs on his own label, Love Circle Music, that reflect his life's spiritual and reflective sides—the most recent being

—CONTINUED ON PAGE 148

PHOTO: RICK CLARK

Percussionist/engineer Kirby Shelstad at home with his drums

PHOTO: DAVD WEISS

The Orchard's chief engineer Jeff Hoffman

Virtually all music that's made with an intent to distribute gets to the Internet today, but an arguably much smaller percentage is produced with cyberspace as the main stage.

The Orchard (www.theorchard.com) is a name already well-known to many in the music community. A leading digital distributor, The Orchard represents thousands of artists and music labels, globally supplying songs and albums to iTunes, eMusic, MSN, Rhapsody and a host of other download marketplaces. While the company sees itself mainly as a marketing service and global developer, its mission is also to build up value-added services for labels and artists—such as go-anywhere recording with its new "small but mighty" mobile production studio.

The singularly focused Real Magic TV (www.realmagictv.com) is a Web video site that presents interviews between recording artists and a top magician, RMTV executive producer Jonathan Krackehl. Founded in 2001 to support the Twin Towers Fund, RMTV evolved from documenting Krackehl's travels across New York for a show—first on college television, and then on the Web—that offered viewers a combination of magic, backstage interviews and musical performances. After dozens of shows featuring the likes of Black Eyed Peas, Maroon 5 and Queens of the Stone Age, and an accompanying for-hire video production company, RMTV has gone from a college side-project to a full-time media venture.

According to chief engineer Jeff Hoffman, The Orchard's philosophy is reflected in its mobile rig, which is centered around a 24-channel Tonelux console, RADAR 24-track recorder with high-quality Nyquist converters and an array of distinguished microphones highlighted by the Korby Audio Technologies Convertible with four different interchangeable capsules.

"In part because everything we're doing here is ending up in the digital domain, and in part because [Orchard president/CEO] Greg Scholl and myself are kind of analog guys, we wanted to have that flavor to it," Hoffman says. "The Tonelux console is emblematic of a lot of new manufacturing that's designed for people that don't have room for a big console but want that classic sound. It's comparable to an API—the EQs sound really great, the racks are 16 modules per rack and you can outfit it however you want.

"The RADAR is a great machine that we selected for its quality and reliability," he continues. "Soundwise, it's as good as you can get for a digital machine, and in terms of a hard disk recorder, there's nothing out there that's better. The Korby mics are very versatile and give the flavor of vintage tube mics without their issues. The whole thinking behind the equipment is to be as analog as you can get without being analog."

—CONTINUED ON PAGE 148

REMOTE RECORDING CAPTURES STONES

CLEARMOUNTAIN AT THE BOARD FOR BEACON SHOWS

The key word is "legend": Veteran recording/mixing engineer Bob Clearmountain was at the controls when Remote Recording Services' Silver Truck recorded the Rolling Stones at the 2,800-seat Beacon Theater (New York City) in late October. Clearmountain has recorded and mixed more than 30 Stones shows during the years, including the ones that appear in the Hal Ashby–directed documentary *Let's Spend the Night Together*—also recorded by a Remote Recording studio.

The Beacon performances and all of the pre-production/rehearsals leading up to the shows were also captured on film for a documentary that Martin Scorsese is making about the group. "We basically hit the Record button whenever anyone onstage started playing during the entire week," says Clearmountain, who recorded the performances to Remote Recording's Digidesign Pro Tools HD rig. On hand were the modules in the truck's much-loved Neve VR console and a variety of outboard gear, such as the Apogee Electronics Mini-MP mic pre that Clearmountain used on Mick Jagger's vocal and on Charlie Watts' snare and bass drum.

A Stones show at the Beacon can't help but attract some high-profile fans, as well. Occupying more than a few of the prized seats were Bill Clinton and a large contingent of his guests, who were gathered to celebrate the former president's 60th birthday.

Count also among the fans in attendance Karen Brinton, owner/manager of Remote Recording. "Working with the Rolling Stones is always exciting, but having the opportunity to work with them in such an intimate environment at the Beacon made it even more amazing," she says.

"Because the Beacon is so small, it was a much more intimate performance, which is quite apparent in the sound of the recordings," Clearmountain says. "I love hearing them that way. The big highlight for me was the version of 'You've Got the Silver,' sung by Keith Richards with Ronnie Wood on slide acoustic guitar. It's always one of my favorite Stones songs and they totally nailed it—nearly a religious experience for me!"

In Remote Recording's Silver Studio (L-R): owner/manager Karen Brinton, engineer/producer Bob Clearmountain and Remote Recording's Phil Gitomer

Comparisons between the Stones film and Scorsese's magnificent documentary about The Band, *The Last Waltz*, will have to wait until this latest rock 'n' roll epic is released. But the popularity of the Stones movie seems almost guaranteed. Who wouldn't want to see the Rolling Stones at the Beacon Theater?

—Barbara Schultz

BEHIND THE GLASS

METAL IN VEGAS

TORTURE UNIT AT ODDS ON

L-R: Odds on Recording president Tom Parham, Torture Unit guitarist and back-up vocalist Tim Dever, recording/mix engineer Bob Ferrari and Torture Unit vocalist Mike Hussey

Odds on Recording, a massive high-end recording facility and CD replication house in Las Vegas, hosts sessions with nationally known acts and local bands, such as Torture Unit, who cut a three-song demo at the studio in November. The tracks were recorded and mixed by Bob Ferrari. Studio veteran/owner Tom Parham takes pride in the facility's ability to take a project from recording (with the studio's SSL XL 9000K console) through design and production of the final product.

WORKING IN A SALTMINE

A MONTH WITH MINISTRY

Standing, L-R: engineer Justin Leeah, Saltmine owner Don Salter, engineer John Gray. Seated: engineer John Bilberry, producer Al Jourgensen.

John Gray, chief engineer at The Saltmine Studios (Mesa, Ariz.) reports that '06 was the facility's busiest year yet. Ministry spent a month mixing their *Rio Grande Blood* album on the SSL 6064 in Studio B.

FRESH TRACKS

BREAKING HEADS
JOHNNNY RIVERS IN DUGOUT

Jim Keltner (in shades) with Johnny Rivers

At Doug Hamblin's Dugout Studio (Studio City, Calif.), the great Johnny Rivers (of "Secret Agent Man" fame) cut tracks for his upcoming roots album. Jim Keltner played so hard that he broke a snare head, which now sports Rivers' autograph. Hamblin engineered and produced.

FORMAL SESSIONS
NASHVILLE'S INDEPENDENTS

Engineer Don Cobb (left), singer/songwriter Richard Leigh (in formal attire) and engineer Eric Conn

Independent Mastering (Nashville) engineer Eric Conn quips, "We are only accepting clients with coat and tie now." He and Don Cobb worked on *The King of Cry*, a new album by singer/songwriter Richard Leigh, whose songs have also been recorded by the Dixie Chicks, Kathy Mattea, Crystal Gayle and more.

TRACK SHEET

The Decemberists were at Sony Studios (Santa Monica, Calif.) to record four acoustic bonus tracks to be made available at www.connect.com. Release of the downloads will coincide with that of the band's new album, The Crane Wife, *on Capitol. The sessions were engineered by Robert Shahnazarian Jr., pictured at far-right with the band.*

SOUTHEAST

The Record Plant Remote (Ringwood, NJ), manned by engineer **Kooster McAllister**, is gearing up to record the fifth season of *Nashville Star* (covered in "Nashville Skyline," July '06 issue). The mobile studio has also been at work on MTV Networks' *Decades* series for VH1 Classic...*American Idol* winner **Fantasia Barrino** visited **Reflection Sound Studios** (Charlotte, NC) to write and record for her second album; **Bruce Irvine** engineered. Producer **Don Dixon** worked with **Dip Ferrell** and **The TrueTones** in Studio A. Local band **S.O. Stereo** locked out Studio C for a week to track with engineer **Bob Engel** and assistant **Mike Pepe**. Engel and Pepe then mixed the CD, *Gray*, in Studio A...At **ZAC Studios** (Atlanta), producer **Polow Da Don** was in to track new songs with J Records acts **J. Valentine**, **Mario** and **Fantasia**; Universal's **Mya** and **Suai**; and Island Def Jam artist **Jay-Z**. **Tony "TBone" Terrebonne** engineered and **JJ Penders** assisted...Artist **David Childers** tracked with producer/engineer **Matt Ranck** at **The BackShop** (Spartanburg, SC) for a solo release.

NORTHEAST

In **Avatar's** (NYC) Studio A, the **Michel Camilo Trio** recorded with engineer **Robert Friedrich** and assistant **Justin Gerrish**; Camilo produced the sessions. In Studio B, **Chris Shaw** self-produced his own recordings; **Willy Mason** engineered and **Chad Lupo** assisted. Warner Bros. artist **Bloodsimple** was tracking with producer **Machine** and engineer **Josh Wilbur** in Studio C; Gerrish assisted. **Fred Kevorkian** mastered a double-CD, 37-song tribute to **The Clash's** epic *Sandinista* album...**StarCity Recording** (Bethlehem, PA) hosted the **Sarah Ayers Band**. The band is self-producing the recordings, working with engineer/producer **Zak Rizvi** and StarCity executive VP **Jeff Glixman**...**Ken-Del Studios** (Wilmington, DE) hosted sessions for the annual Toys for Tots benefit CD, *Have Yourself a Merry Little Christmas*. A version of John Lennon's "Happy Xmas (War Is Over)" was produced and engineered by Ken-Del's **Paul Janocha**. Performers included singer/songwriter Paul Lewis and members of Philadelphia-area bands Ike, Otipsunk, Stygian Veil and more...Hip hop artist **Maimon** is tracking his debut album with producer/engineer **Chris Russomanno** at Rooftop Edit (NYC)...**Collective Soul** has been in **Anthony Resta's Bopnique Studios** (Boston) doing pre-production for a new release. Resta is producing the new recordings.

MIDWEST

Multi-Platinum rockers **L.A. Guns** were in **ImagiVision** Media (formerly Flyte Tyme, Minneapolis), recording a new track with SLR Records artist J from The J Project. L.A. Guns' new album, produced by guitarist **LaSalle Gabriel**, will be released this spring... At **Ambient Digital** (Houston), Canadian rockers **Our Lady Peace** remastered 18 of their hits for a 20th-anniversary retrospective collection called *A Decade* with mastering engineer **Bob Byrd**...The band **Murder in a Tuxedo** is working with engineer/producer **Brad McGrath** on an upcoming album in **Brick City Sound** (Highland Park, IL)...Houston producer **Eric Jarvis** collaborated with drummer **Matt Johnson** at **SugarHill Recording Studios** (Houston)...Epic/Sony rock band **Quietdrive** stopped by **The Terrarium Studios** (Minneapolis) with producer **Matt Kirkwold** and engineer **James Harley** to track drums for a song to be included on their debut album. Overdubs and mixing took place at studios **The Boiler Room** and **A440**, both also located in Minneapolis.

NORTHWEST

At **Nettleingham Audio** (Vancouver, WA), **Kevin Nettleingham** mastered Polyvinyl Records artists **31 Knots'** new release, as well as tracks for Michigan-based artist **Cathy Bolton** and Tennessee rappers **Havoc**.

SOUTHERN CALIFORNIA

Mateo Luka & The Sound, a Rhode Island–based adult contemporary band, were in **Su-zzz Playroom Studios** (Malibu) to mix their latest single, "Smiling Eyes," and record material for their second album. **Jaeson Jarrett** produced, and **Maxx Diamond** and **Jake Nevada** engineered. Also in, **Lejenz** put the finishing touches on their album *Last in Time: Chapter VII*. Jarrett produced; assistant producers were **MoBeatz**, **Stevie Y**, **Clemente** and **Marvin Valentine**. Diamond and Nevada engineered. ■

Please send "Track Sheet" news to bschultz@mixonline.com.

L.A. GRAPEVINE FROM PAGE 144

which is paired with Pro Tools HD3 Accel. "We also hired Brad Keeler from Progressive Design, who acoustically tightened up each of the rooms to get them in line with the 21st century—the sound, the look, everything," says Kerns. "So we've resurrected these great old rooms to a point where they were 30 years ago, when Tom first designed them, with some of the more modern aspects like the new J, Pro Tools and a lot of new outboard gear, as well as the vibrant colors and acoustic treatments that Brad did."

Between them, Encore's two posh rooms have drawn deep-pocketed clients like The Game for his latest project, Matt Serletic and David Thoener for Taylor Hicks' debut album, and the Pharrell-produced tracks for Gwen Stefani's new LP. Additionally, Tim Palmer, who has an office at Paramount, splits his time between the two J boards.

The busiest of their seven rooms is also the lowest-priced. Paramount Studio B, an upstairs room sporting an E Series board with a G computer (as does Studio A in the same building, where Neal Avron mixed both Fall Out Boy albums), is booked "365 days a year," says Beilenson with pride. "It's got to be the busiest room in Los Angeles. While we do a lot of $600 to $800-a-day mixes up there, when somebody doesn't have a big budget or it's a developing act, our Rolodex is loaded with people who have been using Studio B loyally over the years. I'm not sure how to explain it—it's got a secret sauce of some sort."

The only transaction that didn't pan out the way they hoped went down in 2004, just prior to the Encore acquisition, when Beilenson and Kerns initiated the purchase of Third Stone out of a desire to add a Neve tracking room to their SSL-dominated empire. They got the building, but during escrow, the former owner decided not to include the Neve console that had attracted them in the first place, along with the big main room. When they got the news, they were ready to walk, but, says Beilenson, "Because it was a long escrow and purchase process, Mike and I found that there was a lot of demand for facilities to rent, so we went through with the purchase and were pretty much able to find a long-term tenant right away: the company that produces *Twentyfourseven*, the MTV reality series."

The shrinking of L.A.'s studio business during the past few years "probably brought things back to pre-Napster levels for the rest of us," Beilenson hypothesizes. "With seven SSL rooms that go from $750 to $1,750 a day, we're seeing all different kinds of folks now, pretty much on a daily basis. But even the $750-a-day guys end up being groomed into higher-end clientele—you take care of them at this point in their careers and they stick with you as they move up to the next level."

Offering so many quality rooms at a range of rates on both sides of the hill is the key to the operation's present-day success. "L.A.'s traffic issues are certainly a big part of it," says Beilenson. "And because we've got three different locations, producers and mixers sometimes try out a couple of different rooms and then gravitate to one, and that's been really good to us because when you've got seven major mixing and tracking rooms to choose from, you're basically gonna be able to get just about everybody that comes down the pike, in that they're gonna find something they like. And that's a big advantage." ■

Send L.A. news to Bud Scoppa at bs7777@aol.com.

NASHVILLE SKYLINE FROM PAGE 145

Mother of the Buddahs, which was three years in the making.

I visited Shelstad at his new digs in the hills of West Meade, which was once the home and studio of producer/engineer and all-around good guy Bil Vorndick. "There are a few small floating rooms with double walls and windows. It's built like a tank and the isolation is great," says Shelstad. "This is really a blessing because it was ready to go. I even purchased a Pro Tools rig from the previous owner, Charlie Honea, who rebuilt the studio and did an excellent job. All the wiring is done perfectly, including lots of Ethernet connections, video feeds that go everywhere and mic panel boxes in every room, plus a very nicely wired patchbay. Once I configured a few of my things into the setup, I was recording and mixing in about a week."

Shelstad's basic rig comprises Pro Tools HD3 running on a Mac G4, ProControl and Tannoy Reveal monitors. "The ProControl is quite nice and came with the studio package. I'm having fun mixing again with faders," enthuses Shelstad. "Mixing with the mouse the last few years has some advantages, but grabbing faders for the basic levels feels great again. I'm also using Ableton's Live and Stylus RMX to be in the loopy world, as well as Reason and the Native Instruments soft synth bundle, which is excellent. In the meantime, I've got a pile of synths in the garage destined for eBay soon. The soft synth world is getting better all the time, and I really like having all the parameters on the screen; plus, they are all easily automatable in the DAW."

For recording, Shelstad has some favorite ways to capture the best sounds his drums and exotic percussion have to offer. "For recording percussion, aside from the large-diaphram mics, I like to use AKG 414s through Neve or API mic pre's, as well as the KM184s for many things. I also have a Royer SF-24 that sounds great on overheads and all kinds of stuff," says Shelstad. "I'm also getting great results using lower-cost dynamic mics from Shure and Audix, coupled with a pair of Great River mic pre's and EQs. These mics are really handy in a noisier room. They have a real direct sound, and with these Great River EQs, you can carve all kinds of tone out of them before printing to disk.

"I use fairly typical mic placement on drums and percussion, but am always moving them around to try find other tones and possibilities," he continues. "As a player, I really try to adjust my technique to the room and mic setup. Many times, I find myself playing much softer and opening up the mics with the preamp gain to see how much I can get out of them. Drum sets can sound huge if the drummer can play a bit softer, letting the mics and pre's do the work. This might bring in a bit more noise, but there are some amazing sounds you can get this way, and it's also great for getting sound effects from found objects."

Recently, Shelstad has begun recording and mixing *The Doyle and Debbie Show*, which is another brainchild of Arnston and is enjoying a successful run in Nashville. "It's a theater piece and a hilarious country music parody, if there is such a thing," Shelstad offers. "It runs about 90 minutes and there's around 18 pieces of music. It's gone really well and we're hoping that as it expands, we'll get to perform it more with a band, and hopefully move it into film and television."

Shelstad is currently working on tracks for Beth Neilsen Chapman's upcoming album of world hymns and heading up an archival project of 25 years of teachings by Tibetan teachers, which were recorded on many different formats. He is also mixing a South Indian classical CD by Mahadevan. Shelstad is looking forward to working on his next album for the first quarter of the new year. ■

Send news for "Nashville Skyline" to Rick Clark: mrblurge@mac.com.

NEW YORK METRO FROM PAGE 145

When the RMTV crew, which also includes audio engineer Ed Massenay and talent booker/artist relations Sheehan Perera, shows up to record a live show,

the goal is to travel light: Typically, they arrive armed with an array of Shure and MXL microphones, and a pair of PreSonus DigiMAX 8-channel mic preamps feeding an Alesis ADAT HD24 digital recorder recording at 44.1 kHz.

Although Massenay considers the Web a unique medium, he stresses that there should be no difference in the way engineers record for it—the highest-possible quality should always be the objective. However, he says, there are significant differences in the way they should produce for it, especially as they plan for the mix phase.

"The thing that I found [for the Web] is to try and avoid extra sounds and get as much separation as possible," Massenay explains. "Things that ultimately go to CD or DVD that can create lush, soundscape environments turn, a lot of the time, to mud on the Web. I'll also use a little less reverb on things for the Web than for CD or DVD. Overall, I find the Web tends to flatten the sound—so avoid mud because something that sounds lush originally can be muddy if it gets flattened."

As most of Hoffman's recordings for Orchard artists are destined to be encoded and released in a number of formats (the final distribution format being dependant on the individual preferences of the artists' record companies after The Orchard delivers it at 16-bit/44.1kHz), he has to approach his projects with more general goals. "I'm just trying to get the highest-possible quality signal to disk, regardless of whether it's going to the Web or not," he says. "I just think the better the first stop in the chain is, the better it will sound when it goes to MP3.

"If anything, you're less worried about the high or low frequencies because that's all going to get cut off. To me, the most noticeable differences in MP3 is in the high-frequency range: If you listen to cymbals on a 44.1- or 96kHz recording, you'll hear a smeariness that happens. But again, if it sounds good in the original recording, it should sound good as an MP3. I don't necessarily approach it [thinking], 'I need to get rid of anything below 80 Hz or it will screw up the MP3.'"

Because Massenay knows for a fact that his Web audio mix will go out on MPEG-4 (it is married to video), he can plan specifically for that format. Mixing on a Dell PC server with dual M-Audio 1010 soundcards and Cakewalk SONAR Producer Edition, he does critical listening primarily on off-the-shelf headphones and inexpensive computer speakers.

"Producing for the Web forces me to focus on playback systems," he notes. "I try to EQ for them when I master the source. Before compressing, I'll drop everything below 35 Hz and I roll-off pretty hard above 17.5 kHz, as well, because the compression codecs generally lose most of what's up there anyway, and rolling off the high end also helps reduce artifact creation in that range. The reason for dropping the low end is I want to get as much playback volume as possible, and lots of the energy in the low-end stuff doesn't come across on the Web because of the playback systems that people are using."

As the RMTV crew points out, the sweetest sound of Web audio actually isn't the music they put out, but, "It's the feedback we get from our fans—the Internet is an amazing tool for that," says Krackehl. "They actually suggest 100 percent of the acts we feature, and the Web allows them to be such a part of what we do that they're directors in their own right. As much as we can, we have them interact." ■

Send New York news to david@dwords.com.

—FROM PAGE 24, VIRTUAL INSTRUMENTS

vorable review by Michael Cooper in the March 2005 *Mix*, it never took off and the company has shut down.

The most successful of these solutions, it seems, is Receptor from Muse Research, a company founded by veterans of firms Opcode, Passport Designs and E-Mu. Receptor, like Plugzilla, is basically a PC in a relatively rugged 2U metal box. It uses an AMD processor running under a custom Linux-based operating system, which has none of the overhead that a run-of-the-mill Windows machine has, and thus avoids the latencies normally caused by the multitasking processor in a PC: "We think of it as an instrument, a platform for plug-ins, not a computer," says VP of marketing Bryan Lanser. "Linux lets us create our own interrupt routines and decide what we want to listen to. There are no e-mail 'dings' or printer queues, and we can organize the video, disk access and keyboard scanning routines so they don't get in the way of the sound-generating processes."

Scott Shapiro, a busy New York composer, has become a big fan of Receptor. Although the box only has two analog outputs, it has an ADAT Lightpipe port, and Shapiro uses that to send the signals into his Pro Tools rig. "It's never crashed," he says. "I just leave it set up with eight or nine plug-ins, and when I make changes, I rename the template and save it. It's all recallable, instantly. I don't have to worry about having the right bank of sounds loaded in my synths. I remember the days with racks of gear when you'd go away, and when you came back to it, everything would sound different. But now with Receptor integrated into a Pro Tools session, the instruments, the levels and the EQ are exactly the same every time."

Receptor has slots for 16 virtual instruments, and for those who need more, Muse Research has developed Uniwire, a protocol for connecting multiple Receptors to the host and to each other using Ethernet cable to carry both MIDI and audio. Uniwire has one drawback, however: It adds latency to the system. Because the signal travels in two directions—MIDI and clock out and audio in—the latency is, in fact, *two* times the host computer's buffer setting, and the more boxes you add, the higher it gets. "When people are tracking," explains Lanser, "they turn Uniwire off and track using direct MIDI I/O, so there's no latency in that direction, and then when they are rendering and mixing the tracks, they turn it back on. Then the host sequencer's automatic delay compensation kicks in, so everything sounds right."

But there's one more issue with virtual instruments that is being overlooked by a lot of developers, both of the plug-ins and their hosts. It's a two-pronged problem, so it takes a little explaining.

When MIDI-controllable hardware signal processors, such as the Lexicon PCM 70 and the AKG ADR-68K, first appeared, a lot of their appeal was that they allowed the user to map any MIDI signal to any processing parameter: A modulation wheel might control a reverb's RT60, while a foot pedal could adjust a filter's center frequency. You could even use MIDI *notes* this way: One of my favorite patches on the ADR-68K used MIDI note numbers to control the delay time of a flanger, so you could literally play the comb filter effect from a keyboard. Today, most high-end keyboard synths with onboard processing let you do the same thing.

Some soft synths, like Reason, have MIDI controller numbers assigned to just about every knob and switch in the interface. In Receptor, the operating system lets you map up to 16 incoming MIDI controllers to each plug-in's parameters. ("I don't think anyone needs any more than that," says Lanser.) Other virtual synths, like some of the native instruments in MOTU's Digital Performer, let you configure them according to your own needs using a MIDI Learn feature.

But developers who work in the VST or Audio Units environments don't usually include that functionality. Instead, they rely on the specifications' requirement that a plug-in "publish" its various parameters so that a host program can access them by name, and they leave it up to the host program to establish communication with the plug-in. Unfortunately, some host programs don't handle this as well as they might. In the case of Digital Performer, when you are using plug-ins from other manufacturers, you can draw in parameter changes in the sequence editor, but if you want to play the parameters live, you need to use the software's Console function, which lets you create virtual knobs, sliders and buttons, and assign their inputs and outputs to MIDI controllers. Missing from the console's output list, however, are the plug-in parameters. In other words, though you can *automate* parameters in a virtual instrument or processor, unless they can be assigned a specific MIDI controller, you can't *play* them. And if you can't play with the knobs, it's not much of an instrument.

The other side of the issue is that when the DSP becomes sophisticated enough, as it certainly is in many plug-ins, the distinction between an "instrument" and a "processor" gets extremely fuzzy. The other day I heard on the radio David Bowie's 1975 hit "Fame," which features that wonderful descending scale of his voice singing the title over two octaves. That was done with an Eventide 910 Harmonizer. Today, would we call that a processor or an instrument? In the software world, developers often define these categories by the kind of MIDI data they respond to: Instruments primarily receive notes and some controllers, while processors only receive controllers. But these distinctions impose limits that maybe shouldn't be there. GRM Tools has a terrific 31-band equalizer that the company boasts could be a "performance instrument." Yes, it could—but the best way to do that would be to let the user play it from a keyboard, and as far as I can figure out, there is no host that can make that happen.

Though you can automate parameters in a virtual instrument or processor, unless they can be assigned a specific MIDI controller, you can't play them. And if you can't play with the knobs, it's not much of an instrument.

These aren't difficult obstacles to overcome, but they are important ones. So while the changeover to the all-virtual studio has moved along quite a bit in the past five years, it isn't quite finished. There are still some lessons that software designers can learn from the hardware world having to do with flexibility, playability and the fact that, as one memorable (but unsuccessful) instrument developer in the late '80s put it, "Real time is not negotiable." ■

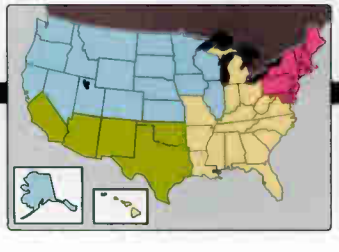
Paul Lehrman teaches music technology at Tufts University. A collection of his writings, The Insider Audio Bathroom Reader, *is now available from Thomson Course PTR, mixbooks.com and insideraudio.com.*

ADVERTISER INDEX

ADVERTISER	WEBSITE	PAGE
Adam Audio USA	www.adam-audio.com	34
ADK	www.adkmic.com	64
AKG Acoustics	www.akgusa.com	85
AMS Neve LTD	www.ams-neve.com	123
API Audio	www.apiaudio.com	47
API Audio	www.apiaudio.com	53
Apogee Electronics	www.apogeedigital.com	2
Argosy Console	www.argosyconsole.com	84
Audio Skin	www.audioskin.net	30
Audix	www.audix.com	49
Aviom	www.aviom.com	95
B&H Pro Audio	www.bhphotovideo.com	97
B&H Pro Audio	www.bhphotovideo.com	117
BIAS	www.bias-inc.com	149
CAD	www.cadmics.com	121
Cakewalk	www.cakewalk.com	11
Center for Digital Imaging Arts	www.CDIABU.com	104
Conservatory of Recording Arts & Sciences	www.cras.org	24
dbx Professional Products	www.dbxpro.com	32
Digidesign	www.digidesign.com	4
Dolby Labs Inc.	www.dolby.com	IFC
DPA Microphones	www.dpamicrophones.com	7
DTS	www.dts.com	81
Eventide	www.eventide.com	3
Fairlight	www.fairlightau.com	66
Fostex Corporation	www.fostex.com	109
Freehand Systems	www.freehandsystems.com	5
Full Compass	www.fullcompass.com	115
Full Sail	www.fullsail.com	99
Future Sonics	www.futuresonics.com	40
Genelec	www.genelec.com	15
Grace Design	www.gracedesign.com	IBC
Groove Tubes	www.groovetubes.com	46
Guitar Center	www.gcpro.com	41
Guitar Center	www.gcpro.com	65
Heil Sound Ltd.	www.heilsound.com	74
Intel	www.intel.com	103
JBL Professional	www.jblpro.com	63
Lexicon	www.lexicon.com	43
Location Sound Corp	www.locationsound.com	35
Los Angeles Recording School	www.larecordingschool.com	79
Lynx Studio Technology	www.lynxstudio.com	91
McDowell Signal Processing Inc	www.mcdsp.com	119
Messa Frankfurt Inc.	www.prolight-sound.com	25
Mojave Audio	www.mojaveaudio.com	102
MOTU	www.motu.com	BC
MPathX	www.mpathx.com	31
MPathX	www.mpathx.com	33
MPathX	www.mpathx.com	35
Musicians Institute	www.mi.edu	125
MXL Professional Microphones	www.mxlmics.com	69
Neumann/USA	www.neumannusa.com	56
Odds on Recording	www.oddsonrecording.com	31
Primera Technology	www.primera.com	71
PrismSound	www.prismsound.com	33
QSC Audio Products	www.qscaudio.com	58-59
QuireTec	www.quiretec.com	13
Radial	www.radialeng.com	133
RME	www.synthax.com	93
RØDE Microphones (NT2-A)	www.rodemicrophones.com	29
RØDE Microphones (NT1-A)	www.rodemicrophones.com	77
Roger Nichols Digital	www.rogernicholsdigital.com	67
Rolls Corporation	www.rolls.com	120
Royer Labs	www.royerlabs.com	42
Rupert Neve Designs	www.rupertneve.com	124
SAE Institute of Technology	www.sae.edu	89
sE Electronics	www.seelectronics.com	105
Sennheiser	www.sennheiserusa.com	86
Shure	www.shure.com	9
Solid State Logic	www.solid-state-logic.com	45
Sontronics/Music Marketing	www.musicmarketing.ca	98
Sony Pro Audio	www.sony.com/proaudio	23
Studio Projects	www.studioprojects.com	50
Sweetwater Sound	www.sweetwater.com	19
Sweetwater Sound/Presonus	www.sweetwater.com	106-107
Sweetwater Sound/Apple/Apogee	www.sweetwater.com	111
Sweetwater Sound/Focusrite	www.sweetwater.com	127
Sweetwater Sound/Presonus	www.sweetwater.com	129
Sweetwater Sound/Digidesign	www.sweetwater.com	131
Sweetwater Sound/MOTU	www.sweetwater.com	164-165
Sweetwater Sound/MOTU	www.sweetwater.com	166-167
Symetrix	www.lucidaudio.com	130
Tannoy North America Inc.	www.tannoy.com	48
TC Electronic	www.tcelectronic.com	39
That Corporation	www.thatcorp.com	12
Thomson Books	www.mixbooks.com	30
Universal Audio	www.uaudio.com	51
Wave Machine Labs	www.drumagog.com	12
Waves Ltd.	www.waves.com	1
Waves Ltd.	www.waves.com	57
Yamaha (DM2000 VCM Mixer)	www.yamahaca.com	73
Yamaha (Amplifiers)	www.yamahaca.com	75
Yamaha/Steinberg	www.steinberg.net	21
Yamaha (MG Series Mixer)	www.yamaha.com	87

MARKETPLACE

Airborne Creative	www.de-tour.biz	156
Altermedia	www.studiosuite.com	153
Atlas Pro Audio	www.atlasproaudio.com	155
Audio Accessories, Inc.	www.patchbays.com	154
Ball Media	www.ballmedia.com	153
Buzz Audio	www.buzzaudio.com	157
Chameleon Labs	www.chameleonlabs.com	156
Clearsonic	www.clearsonic.com	153
Coleman Audio	www.colemanaudio.com	154
Crystal Clear Sound	www.crystalclearcds.com	154
Discmakers	www.discmakers.com/mix	155
D.W. Fearn	www.dwfearn.com	152
Fat Pro Technologies	www.fatpro.com	156
Healey Music	www.healeymusic.com	152
Josephson Engineering	www.josephson.com	156
Little Labs	www.littlelabs.com	155
Lonely Records	www.lonelyrecords.com	157
Northern Sound & Light	www.northernsound.net	158
Omnirax	www.omnirax.com	154
Play-It Productions	www.play-itproductions.net	156
Presonus	www.presonus.com	152
Rainbo Records	www.rainborecords.com	157
Steve's Pro Audio	www.stevesproaudio.com	153
Sound Pure	www.soundpure.com	157



MIX ADVERTISER SALES REGIONS AND REPRESENTATIVES

NORTHWEST	SOUTHWEST	SOUTHEAST/EUROPE	NORTHEAST	FACILITIES, PRODUCTS & SERVICES
Greg Sutton	**Albert Margolis**	**Jeff Donnenwerth**	**Michele Kanatous**	**Kevin Blackford**
847/968-2390	949/582-2753	770/643-1425	732/851-5937	800/544-5530 or 510/653-3307
gsutton@prismb2b.com	amargolis@prismb2b.com	jdonnenwerth@prismb2b.com	mkanatous@prismb2b.com	mixclass@prismb2b.com

MARKETPLACE

CLASSIFIEDS

MIX Classified Ads are the easiest and most economical means to reach a buyer for your product or service. The classified pages of Mix supply our readers with a valuable shopping marketplace. We suggest you buy wisely; mail-order consumers have rights, and sellers must comply with the Federal Trade Commission, as well as various state laws. Mix shall not be liable for the contents of advertisements. For complete information on prices and deadlines, call ***(800) 544-5530.***

Acoustic Products

Business Opp.

Macintosh and ProTools Consulting

tech support for individuals and small businesses

Oakbog
IT for Media Production

286 Washington St. #2 Malden MA 02148
Info@oakbog.com 617-480-6436
www.oakbog.com

Producers Dream House
1 Hour From NYC

Amazing and sophisticated Tudor home with pond, heated pool, and a **Great Studio**. Over 6000 sq. ft, 5 BD/ 4 BA, huge MBR Suite, Italian tiled floor throughout first floor, C/A, 3 car garage, too many amenities to mention. For pictures and more information checkout the website:
www.prodreamhouse.com or call at 917-405-5851 or 917-453-1501

Cases/Covers

UNDER COVER
Custom Covers and Bags
Speaker Cabinets / Consoles Anything!
www.undercovernyc.com
917 237 1535
Get your gear Under Cover!

Computer Products

sweet studio?
get
Studio Suite 8
Studio Management Software
www.studiosuite.com
See our ad in MarketPlace

Employment

Audio Engineer

Min. 5 years experience in corporate & live production. Competitive compensation. Send resume to:
dwv@technicalproductions.com or
fax to ***314-644-5600*** attn: ***Dan Vaughn***

TENURE-TRACK FILM AND VIDEO FACULTY - AUDIO

Columbia College Chicago is an undergraduate and graduate college in downtown Chicago whose principal commitment is to provide comprehensive educational opportunities in the arts, communications and public information, within a context of enlightened liberal education. Columbia is the fifth largest private educational institution in Illinois, with a Fall 2006 enrollment of more than 11,500 students. The successful candidate will teach production and analysis across the Film and Video Department, from entry-level Core courses through advanced classes in specialized concentrations. Additional responsibilities include advising students; serving on college-wide and Film and Video Departmental committees; participating in student registration; creating curriculum; assisting and mentoring part-time faculty; and assisting with the Film Department Production Fund and student Independent Projects.

A terminal degree and/or a distinguished record of professional achievement are required. Applicants must have extensive experience in sound for film and video, particularly during field and studio production phases. This experience will be across traditional film formats and related digital media, ideally encompassing narrative, documentary and experimental modes. Some history of teaching film sound in a degree program will be an advantage.

Columbia College Chicago encourages qualified female, GLBT, disabled, international and minority classified individuals to apply for all positions. No phone calls, please. We offer a competitive salary and an excellent benefits package. For consideration, please submit a resume and a cover letter to:

Email: hrrecruitment@colum.edu
Columbia College Chicago
Film and Video Faculty - Audio
Reference #1019 Search
600 S. Michigan Avenue • Chicago, IL 60605
www.colum.edu

Columbia COLLEGE CHICAGO

Imagine the possibilities...

start a new career at Sweetwater's *NEW* Corporate Headquarters

Learn more at Sweetwater's Online Career Center.

- The Company
- The Community
- Current Openings
- The Culture
- The Perks

Exclusive Web Video: Step inside the doors and get an in-depth look at Sweetwater

Visit: **www.sweetwater.com/careers**
Call: **1-800-222-4700** Jeff McDonald ext.1052

Pro Audio Sales Person wanted!!

Incredible opportunity $$$$ to join a high profile, established Professional Audio Dealer in Miami, FL. We are seeking a Pro Audio/ Pro Tools Sales Professional. Industry experience a must. Must be willing to relocate to South Florida. Please fax resume to 615-341-0069 or email to salesnash@audio-one.com

Director of Music Industry Studies

The Ohio State University invites applications for Associate or Full Professor, nine month tenured or tenure track appointment, beginning Autumn quarter 2007. Salary commensurate with experience. **Qualifications:** Doctorate or equivalent required; demonstrated experience in composition for commercial media, audio engineering, music marketing, management, intellectual property and music promotion and production required; teaching experience at the college level or with professional music industry training programs desired. **Responsibilities:** Build and oversee all courses and curricula related to the interdisciplinary Music Industry Program; maintain collaborative connections between the School of Music and multiple colleges, departments and centers with desired links to the musci world. **Application:** Send a letter of application, curriculum of recent accomplishment related to the position description Deadline: All applicants received by January 15, 2007 will be given full consideration. Applications received after that date will be considered until the position is filled.

Music Industry Director Search Committee
110 Weigel Hall • 1866 College Rd
Columbus, OH 43210

MUSIC INDUSTRY ASSISTANT OR AUXILIARY PROFESSOR

Drexel University invites applications for a full-time, tenure track position at the Assistant Professor level, or an Auxiliary position, beginning September 2007. The preferred candidate will have a minimum of five years of current significant experience in the production, recording, and MIDI sequencing of commercially released music projects, and demonstrated expertise in analog and digital music technology and teaching, with special emphasis on Digidesign Pro Tools and Apple Logic Pro. For tenure track applicants, an advanced degree or equivalent is required. The successful candidate will teach classes in music technology and assist with the University's record label

An applicant should include an application letter, current curriculum vitae, and three professional reference letters.

For more information see Employment at www.drexel.edu/westphal and apply online at www.drexeljobs.com

Drexel University

Equipment For Sale

Instruction

Furniture

Hit the road with your Dual Core MOTU Studio

Take Digital Performer 5 and the rest of your MacBook-powered MOTU studio on the road for unprecedented portable studio power and performance.

Performance squared

The Apple MacBook Pro is built on revolutionary Intel Core 2 Duo, which packs the power of two processor cores (up to 2.33GHz) inside a single chip. This means you now get mind-boggling dual-processor performance that you can stuff in your backpack and sling over your shoulder. Now add support for internal hard drives up to 200GB, 3GB of RAM, FireWire 800 and double-layer burning SuperDrive, and your MacBook Pro portable MOTU Studio delivers unprecedented speed and performance - to go.

FireWire I/O with 8 mic inputs

The new MOTU 8pre delivers eight mic inputs in one rack space, complete with a five-segment level meter, phantom power switch, 20 dB pad switch and trim knob right on the front panel for each input. Now add two banks of ADAT optical digital I/O for eight more channels — even at 88.2 or 96 kHz. Top it off with main outputs and MIDI I/O, and you've got a FireWire audio interface that turns your Mac into a complete studio that can record your entire band. Or, if you already own an optical-equipped MOTU FireWire, PCI or UltraFast USB2 audio interface, the 8pre is the perfect way to add 8 mic inputs directly to your MOTU interface CueMix DSP on-board mixing via 8-channel optical.

NEW

Liquid Technology

The Focusrite Liquid Mix is another Focusrite first and a true one-of-a-kind. Based on the same technology that brought the audio world the acclaimed Liquid Channel, Focusrite now brings Liquid Technology directly into your DP5 studio environment at a much more accessible price. Focusrite Liquid Mix offers emulations of 40 compressors and 20 EQs with a FireWire Hardware controller. Thanks to its built-in DSP, you can have up to 32 channels of modeled vintage or modern compression and EQ with one Focusrite Liquid Mix, with no impact on your native DP5 processing resources. Plus you can control Liquid Mix channels from directly within Digital Performer using Liquid Mix plug-in windows, which keeps your Focusrite processing seamlessly integrated with — and saved with — your DP projects

The MOTU experts at Sweetwater can build the perfect portable DP5 rig for you. We'll help you select the right components to build a powerful system that lets you take your workflow anywhere, and we can even install, configure and test the entire system for you. Why shop anywhere else?

Waves native processing

Waves has long been synonymous with quality plug-ins, and the Waves Platinum Bundle contains a huge range of top-quality Waves processing for your DP5 studio. The Platinum Bundle now includes Waves Tune LT, L3 Ultramaximizer, and IR-L Convolution Reverb as well as all the plug-ins found in the Waves Gold and Masters bundles. Platinum brings extraordinary signal processing power to DP5, for tracking, mixing, mastering, and sound design. From dynamics processing, equalization, and reverb to pitch correction, spatial imaging and beyond, Waves Platinum Bundle is a must-have for every MOTU studio.

Ultimate expandable synth

Ultimate Soundbank Plugsound Pro puts a complete "rompler" right inside Digital Performer 5, giving you all the essential sounds you need for your mobile music. Sharing the same UVI engine as the MOTU Ethno Instrument, Plugsound Pro gives you 8 GB of instruments and loops plus powerful effects and performance features, including the innovative drag and drop of audio or MIDI between the plug-in and Digital Performer. An ever-expanding range of add-on sound libraries include retro organs, classic synths, cutting-edge sound FX and textures, modern drum loops, and a just-released collection of must-have retro keyboards.

Legendary drummers

Submersible Music Drumcore delivers access to twelve world-class drummers, such as Terry Bozzio, Matt Sorum, Sly Dunbar and Zoro. The perfect tool for songwriters and composers who need drums quickly in a multitude of styles. Features include an Audio and MIDI librarian (quickly find that perfect groove), "GrooveSets" (for easier songwriting), MIDI instrument (loaded with each drummers' MIDI drumkits) and the "Gabrielizer" (groove generator). Simply drag-and-drop from Drumcore to your Digital Performer 5 tracks or Clippings window.

Komplete control

For DP5 users who want it all: Reaktor5, Kontakt2, Guitar Rig 2 software, Absynth4, Battery3, FM8, B4II, Akoustik Piano, Elektrik Piano, Vokator, Spektral Delay and Pro-53 in a unified interface with hands-on control — Native Instruments KOMPLETE 4 and KORE put an infinite universe of sound at your finger tips. Every preset included in NI KOMPLETE 4, more than 8,500 in total, has been preconfigured and categorized in KORE with searchable musical attributes and hands-on controller assignments. This seamless integration of software and hardware turns Native Instrument's award winning synthesizers and samplers into tactile instruments.

Authorized Reseller

www.sweetwater.com **(800) 222-4700**

Sweetwater

Hit the road with your Dual Core MOTU Studio

Compact MIDI controller

Digital Performer 5 gives you unprecedented control over your MIDI and audio tracks. And what better way to take advantage of this hands-on control than the M-Audio 02, a 25-key ultra-thin USB MIDI controller that goes anywhere you want to make music! Small enough to fit in a bag along with your laptop, the slim-line 02 is perfect for throwing down bass lines, programming drum patterns, triggering effects and tweaking virtual studio parameters - anywhere, anytime. It's easy to assign controllers to match DP5 or your virtual instruments. Plus, the 02 has five internal setup locations so you can switch from application to application. It also integrates with Enigma editor/librarian software for unlimited setup creation and storage.

Professional pad controller

The Akai Professional MPD24 is the velocity sensitive pad controller for musicians and DJs working with sampled sounds. The MPD24 features 16 MPC-style velocity and pressure sensitive pads plus transport controls for interfacing with Digital Performer and your virtual instruments. You get Akai's exclusive feel: either MPC 16 Levels or Full Level features for ultimate pad control. Now add four selectable pad banks totaling 64 pads, six assignable faders and eight assignable and 360 degree knobs for transmitting MIDI Control Change data. Included editor/librarian software gives you complete, intuitive programming and control for DP5 all of your other software titles. The MPD24 provides unprecedented creative freedom for manipulating sampled material.

Advanced waveform editing

Your DP mastering and processing lab awaits you: BIAS Peak Pro 5 delivers award winning editing and sound design tools plus the world's very best native mastering solution for Mac OS X. With advanced playlisting. Superb final-stage processing. Disc burning. Plus PQ subcodes, DDP export (optional add on), and other 100% Redbook-compliant features. Need even more power? Check out our Peak Pro XT 5 bundle with over $1,000 worth of additional tools, including our acclaimed SoundSoap Pro, SoundSoap 2 (noise reduction and restoration), Sqweez-3 & 5 (linear phase multiband compression, limiter/upward expander), Reveal (precision analysis suite), PitchCraft (super natural pitch correction/ transformation), Repli-Q (linear phase EQ matching), SuperFreq (4,6,8, & 10 band parametric EQ) and GateEx (advanced noise gate with downward expander) — all at an amazing price. So, when you're ready to master, Peak Pro 5 has everything you need. It's the perfect complement — and finishing touch — to Digital Performer 5.

Control room monitoring

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 music production process.

Portable hands-on control

AlphaTrack by Frontier Design Group combines intuitive tactile controls in a compact and highly portable package, with native support for Digital Performer. Ride a 100mm, touch-sensitive, motorized fader with true 10-bit resolution for smooth and precise level control. Three touch-sensitive encoders let you adjust your DP track and plug-in parameters while the 32-character backlit display shows detailed feedback in response to your touch. Map your favorite shortcuts from the Commands menu to AlphaTrack's user-programmable buttons. Jog and shuttle with the touch of your fingers using the integrated Scroll Strip. Slide one finger across the Scroll Strip surface and your project's timeline scrolls in response. Drop a second finger onto the strip, and now your fingers control DP's shuttle speed. Zoom through your project with two fingers, then just lift one finger and slide to quickly set the precise position you want. AlphaTrack is powered entirely though its USB connection so it makes the perfect companion to your portable MOTU recording rig.

Accurate monitoring

The Mackie HR-Series Active Studio Monitors are considered some of the most loved and trusted nearfield studio monitors of all time, and with good reason. These award-winning bi-amplified monitors offer a performance that rivals monitors costing two or three times their price. Namely, a stereo field that's wide, deep and incredibly detailed. Low frequencies that are no more or less than what you've recorded. High and mid-range frequencies that are clean and articulated. Plus the sweetest of sweet spots. Whether it's the 6-inch HR-624, 8-inch HR-824 or dual 6-inch 626, there's an HR Series monitor that will tell you the truth, the whole truth, and nothing but the truth.

Hands-on control for the 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 Universal brings large-console, Studio A prowess to your Digital Performer desktop studio, with a wide range of customized control features that go well beyond mixing. It's like putting your hands on DP itself.

BY PETE KEPPLER

Digidesign VENUE

Digital Shortcuts But With Analog-Style Tricks

Since its arrival some 18 months ago, Digidesign's VENUE has found acceptance on major tours with more than 300 systems in use worldwide. This modular system comprises the D-Show console surface, the FOH Rack (housing the system's mix engine), the Stage Rack recallable, remote-controlled preamps, and a multichannel digital snake. Here are a few tips I've learned and discovered in using VENUE during the past year while mixing front of house for Nine Inch Nails and AFI (November 2006 "Tour Profile").

KEEP A CLEAN HOUSE

If there are plug-ins installed that you know you definitely won't need, disable (but don't remove) them from the Options/Plug-ins list. The console will boot more quickly. You can always enable any of them again without re-installing their software.

AVOID CLIPPING

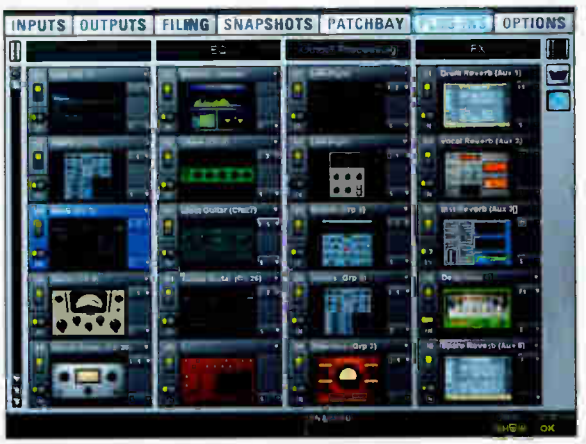
As an old-school engineer, I like to keep my input faders around the unity (0) mark while mixing. I also like to run my input-channel gain as hot as possible, especially if I'm multitracking to Pro Tools via HDx. In the digital world, if you're running a full band's worth of inputs, this scenario will inevitably cause the console's outputs to clip pre-fader (in the "summing amp" stage), and no matter where you have the master fader, you'll see a lot of red on the meter. To combat this, I keep one VCA with every input fader (except any effects returns) assigned to it—a "master trim," if you will. This way, I can keep my input faders where I like them, and if things are getting too hot at the output stage, then I just back off the master VCA by 3 to 4 dB and raise the output fader by the same amount. Don't forget to make up the gain you've lost to your effects sends, and so on.

CHANNELS, NOT RETURNS

I always try to set up the console with more input faders than I have inputs from the stage (unless you have a 96-input stage). In other words, if you have a full 48-input Stage Rack, then select 64 inputs in the Options/Config page. That way, you can have effects returns and external sources coming in on regular input channels with full EQ and dynamics, etc., instead of the more limited options on the stereo effects returns.

OSCILLATOR ROUTING

I normally use the onboard oscillator to line up system processing and to "noise out" the main P.A., but when it came time to put pink noise on a channel, I realized I would need to insert the signal-generator plug-in. I didn't understand why I could hear it, despite the fact that it wasn't showing up on the input meter. Eventually, I found the solution: Don't "insert" it. Assign the plug-in's output and its "input" (although technically speaking, this plug-in has no input) to the top of the channel. This way, the channel sees this as an input.



The Plug-Ins tab in the D-Show software can organize up to 100 plug-ins in four user-definable "racks" for fast access.

THOSE EXTRA PREAMPS

There are two mic preamps on the control surface/FOH Rack. One is the talkback, located on upper-right-hand corner of the main control surface. The other, called "Comm," is on the back of the FOH Rack on the left side of the I/O card. I thought it was for Clear-Com, but it's actually a mic pre and less noisy than the talkback, and is also assignable to the monitor/headphone section as a proprietary talk-over.

For example, if your monitor engineer or stage manager needs to reach you quickly, plug them into this input (use a mic with an on/off switch), and they can automatically speak to you on top of whatever you may have going on in your monitors/'phones. Or, if you're like me and you EQ the P.A. with a Shure SM58 and your own voice, your dulcet tones will never have sounded better. The only slight hitch is that the gain control for this mic pre is right next to the XLR input on the rear, but what's a few more minutes on your knees, anyway? Both mic preamps can be found and soft-patched in the FOH tab of the patchbay inputs folder.

IPOD WALK MUSIC

I use an iPod for playback of walk-in and walk-out music, and now also for storing backups of my D-Show files and plug-in software. The iPod acts just like a USB drive. You need to put the plug-in software in a folder named "TDM Plug-Ins" or the plug-ins won't be recognized. The USB port on the FOH Rack is faster than the one on the console, by the way. Hey, you can charge your iPod, too!

EXTRAS, EXTRAS

The D-Show System Support page on Digidesign's Website is a great resource, with software updates, compatibility information, FAQs and useful technical documentation. One recommended application is D-Show stand-alone software, which is available only for Windows XP.

If you have a laptop, you can pre-configure performances, assign hardware I/O and D-Show routing, name channels, create a library of D-Show setups, store and recall setups, set channel input/EQ/dynamics/pan and more—from the tour bus, airport or hotel. It also offers a way to learn the basics of the D-Show software interface in preparation for working at a full D-Show system. Best of all, it's a free download at www.digidesign.com. ■

Pete Keppler is a recording engineer who also enjoys mixing live sound with acts such as David Bowie, Nine Inch Nails and AFI.

m802 8 channel remote control mic preamplifier

Possibly the most evolved microphone preamplifier available, the m802 combines absolute purist audio performance with a feature set simply unavailable with any other preamplifier design. With its remote control unit, up to eight m802s (64 channels) can be controlled from up to 1000' away, or it can be controlled directly from Digidesign® Pro Tools|HD® systems. Add the optional reference 24bit/192kHz A/D converter card, and the m802 becomes the complete input solution for even the most demanding recording applications.

The m802 delivers unmatched audio performance, with vast headroom and ultra-wide bandwidth that contribute to a markedly open and musical character. The m802 will effortlessly resolve even the lowest level ambient information, resulting in a sonic picture of astonishing clarity and detail, which serves to capture the essential character of the music being recorded.

The m802 now includes our unique ribbon mic mode, which shifts the preamplifier's entire gain range up while deactivating phantom power, optimizing input impedance and bypassing the decoupling capacitors. Optional 130V DPA® inputs are also available.

Whatever the application, we invite you to discover the remarkable sonic performance and functionality of the m802. We're confident that it will help you make the finest recordings of your career.

fully balanced, transformerless design • control from Digidesign® Pro Tools | HD® systems • 130V phantom power option • ribbon mic mode • channel group mode • RCU controls up to 8 units from up to 1000' away • front panel lockout mode
reference quality 24bit/192 kHz A/D converter card option • optional ADAT Lightpipe output with SMUX for 96kHz • s-Lock™ dual stage PLL for extremely low jitter without sample rate conversion • five year warranty on parts and labor

GRACE design

Power • Detail • Grace

MOTU
motu.com

Winner
2007 Editors' Choice Award
Best Audio Interface
— *Electronic Musician*

Winner
2007 ACE Award
Best Audio Interface
— *Future Music*

UltraLite

Compact bus-powered 10x14 FireWire audio interface

Sturdy. Compact. Portable. The UltraLite is the only half-rack audio interface that offers stand-alone operation with programmable mixing from its unique backlit front panel LCD. And it includes two mic inputs with a 60dB gain range, plus all the analog, digital and MIDI I/O that you need.

• 10 inputs / 14 outputs • Compact: 8.5 x 7 inches • Bus-powered • 96kHz recording • On-board CueMix DSP mixing • LCD programming • 2 mic inputs • Individual 48V phantom power • 60dB pad/trim gain range • Stand-alone mixing • 6 TRS analog inputs • 10 TRS analog outputs • Separate main outs • Main volume knob • Headphone volume knob • S/PDIF digital I/O @ 96kHz • Metering for all inputs & outputs • Sample-accurate MIDI • On-board SMPTE sync • Expandable • 2 FireWire ports for daisy-chaining • Mix & match with other interfaces • Includes AudioDesk® software • Across-the-board compatibility