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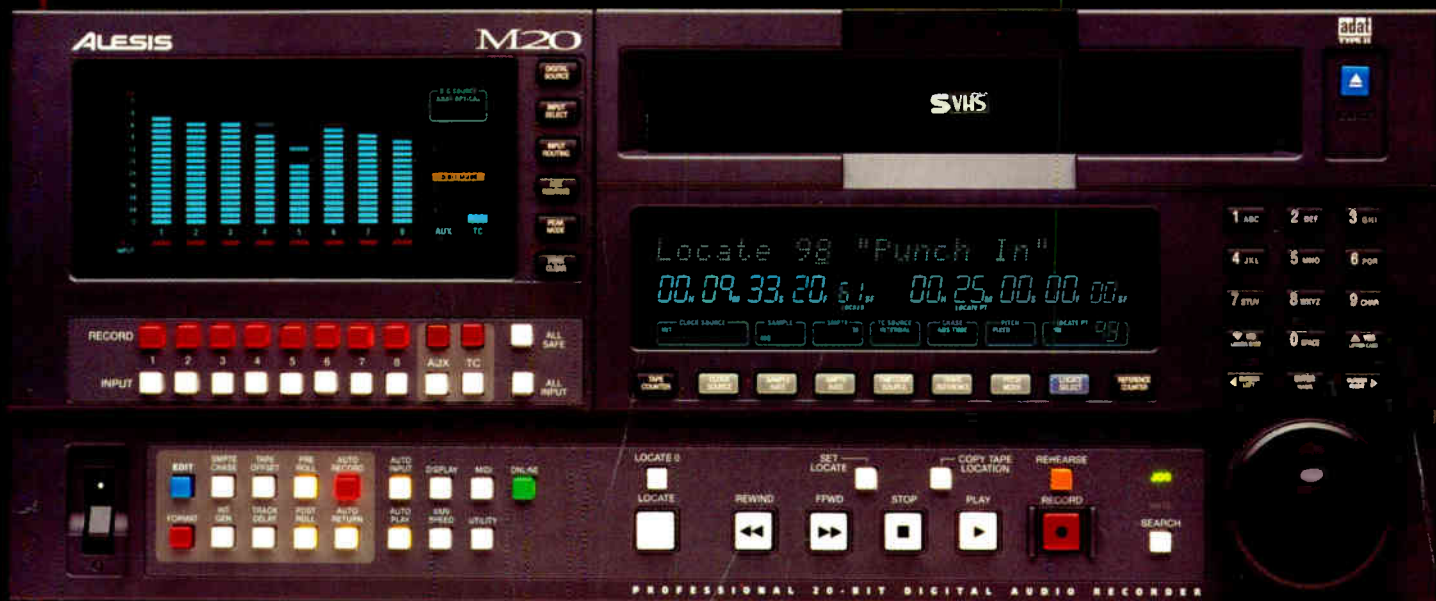
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On the Cover: Owners Dino and John Elefante have added four more rooms to their Sound Kitchen Studios in Cool Springs, Tenn. The large tracking room on this month's cover is equipped with a Neve V3 console and vintage Kinoshita-designed TAD speakers. For more, see story on page 56. **Photo:** Tom Gatlin. **Inset Photo:** Steve Jennings



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FROM THE EDITOR

CONSOLES: SHORTLOADS TO DOWNLOADS

Not too long ago, consoles were analog and fairly simple, based on input modules, group and tape return channels, a master section and perhaps some automation, which could range from simple mute grouping to VCAs or moving faders. Upgrade paths were generally limited to adding more inputs to a short-loaded frame, or possibly expanding the physical size of the board by adding sidecars or buckets with additional modules to keep up with the ever-growing need for inputs.

Digital consoles have changed all the rules regarding console upgrades, and behind the (often analog-appearing) control surfaces and I/O interfaces of today's digital boards is—in one form or another—a computer. Unlike analog mixers—where the sound of the console is defined by amp and filter circuits—the audio imprint of a digital console is largely determined by software. This concept isn't all that different from plug-ins, where reverbs from Waves, Lexicon and TC Works sound completely distinct yet run on the same Pro Tools TDM platform. So, as digital consoles evolve, the actual sound of the board can change or offer additional signal processing options with a new software revision.

At the same time, a new software revision can take an existing product to a new level, such as adding surround sound mixing—a significant change in a product without altering the hardware.

Still, we've barely tapped the possibilities of the software-based console. We're already thinking of the console as a computer (albeit large and impressive looking), so perhaps we should treat it as such. We may buy a 500MHz Pentium III for its speed and feature set, but its true purpose is not determined until we install the software that makes it a sequencer, acoustic analyzer or other audio tool. A CPA using that same Pentium would run spreadsheets, payroll and tax software, so if a computer offers that degree of flexibility, why not a console? With the right software and some simple hardware add-ons, a standard core could become a post console, a music mixer or a live board. Or more likely, perhaps, a console could be tailored to the individualized session, running custom software for each client's needs.

On the other hand, enterprising code warriors could write completely new operating systems for existing consoles, where the hardware remains, but via a download or a couple custom ROMs, the entire look, feel, feature set and sound of the console could take on different character, just as Linux and BeOS offer alternatives for the PC and Mac environments. Few people build custom consoles these days; however, the potential for new and creative software for digital mixers offers exciting possibilities for future development.

In this issue's focus on the digital studio, Randy Alberts looks at the state of the art in digital consoles, where this year the market emphasis is on upgrades rather than completely new designs. And speaking of upgrades, we also test drive the V. 2.0 software for the Mackie Digital 8-Bus, and Michael Cooper offers his Power Tools secrets for the Yamaha 02R (V. 2.0), while Stephen St. Croix examines the pathology of obsolescence. Now if only someone could come up with a chip-swap 24/96 upgrade for my PCM-F1s...

Keep reading!



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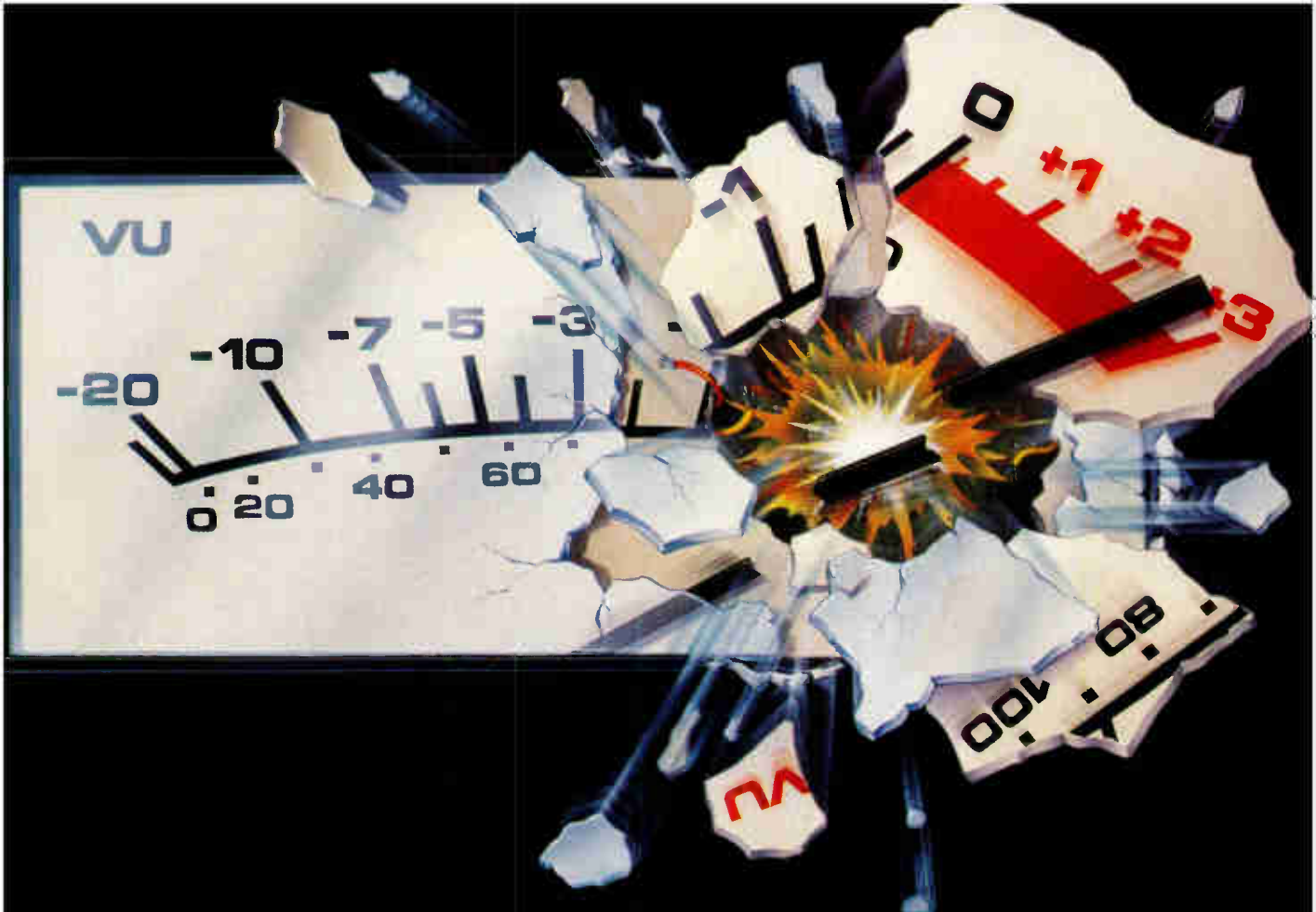
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FEEDBACK

CLASSIC CORRECTIONS

I wanted to take a moment to correct and clarify a couple of points regarding the origin and recording of The O'Jays' "For the Love of Money" ["Classic Tracks," April '99. Anthony Jackson was the bassist on the session and shares the writing credit with Kenny Gamble and Leon Huff.]. Normally, as Joe Tarsia said, chord charts would be handed out and we'd run over things again and again and the songs would fall into place. But "For the Love of Money" was different. I was working with an artist named Billy Paul at the time. He had done a big record called "Me and Mrs. Jones" the year before, which was my first major recording appearance. So I was basically hanging around in the offices of Philly International Records, waiting for a train. I had some time to kill and there was an amplifier in one of the offices there. I plugged in and began playing around. I played one of a series of bass exercises with a pick that I'd worked on for a few years: they were things based on some James Brown records. It was Kenny Gamble who heard me playing one of these and he said, "Don't go away. Stay right there. We've got a song we've been trying to record, and we can't figure out what to do with it, and this might go with it." So he called Huff into the office. Huff began playing the song, as they'd been hearing it, on the piano in the office. It didn't sound anything like the record would eventually sound. So they began to fit the piano part around the bass part I was playing; I didn't change anything. People began coming in from other offices and there was a lot of excitement about it. So we went into the studio with the bass part completely together. The bass line was completely my own, and I was given writer's credit for it.

As for the sound of the bass on the record, I had been using a Maestro phase-shifter, which had just come on the market, and that's what I used. The only thing Joe Tarsia added was a little reverb in the opening, where I'm playing by myself. In the studio I noticed a Countryman Associates phase shifter sitting on a shelf. Joe told me later that he had used that on the crash cymbal,

which is where the phasing effect comes from. He might have also used an Eventide Instant Phaser, but he did not use that on the bass guitar. I had modified my phase-shifter to increase the strength of the phasing effect. In fact, I actually turned it up a bit too high—I detect a bit too much pitch shift.

Joe also says I came into the studio with a wah-wah pedal. Never at any time have I used a wah-wah pedal, on-stage or on a recording.

I'm still amazed that Gamble and Huff—as conservative as they are—were bold enough to put that bass line with the phase-shifter on the record. This was something they'd never heard before, and the fact that they said they liked it still means a lot to me to this day. It turned out to be a great decision for all of us.

*Anthony Jackson
Little Ferry, N.J.*

GOOD-BYE CRUEL INDUSTRY

This is just a last good-bye to all of you in the music business. For 13 years, I provided the industry with some of the most cutting-edge recording and production services in NYC. Being one of the pioneers of industrial music in the early '80s (pre-Ministry/Trent Reznor), I was producing—among many things—punk bands and dance music, triggering samples and dubbing in sound FX, constantly pushing the envelope of dynamic range, clarity and quality. In this time I found a great need for lower-budget projects to have access to the quality recording that the majors enjoyed.

Teaming with world-class acoustical and technical engineers, I created one of the most amazing recording environments ever built. It opened in early 1996, and I offered my facility at a rate less than half that of the competition. To my total and complete shock, no one cared. Sadly, I found today's engineers and producers cannot appreciate such advanced technology and instead seek out places that provide trendy equipment (designed to make bad recording sound good) and some form of hard disk recording system (multitrack data compression) at an hourly rate your average in-house engineer used to get. I

found it next to impossible to explain to this new generation that the equipment they are looking for in a studio was originally designed to electronically replicate in a home studio the performance of a real studio such as mine.

It hurts me to see the studios with a foundation of scientific know-how fall to the thousands of John Does with an ADAT, but even more saddening to my heart is the loss of the true art and science of sound recording and production. There was an age when music-makers and equipment manufacturers were concerned with making each project better than the last one, not cheaper than the last one. Striving for greater profit margins has not only stifled the technological drive for excellence, but it has also blinded youth to the potential of recording excellence. Lost are ideas like "transparency" and "phase alignment"; we now live in an environment where "data compression" and "error rates" are not only acceptable but have become the norm.

Such compromises may be good for the bank account, but I can't help but wonder where we would be now if we had spent the past 20 years of research on improving the quality of sound recording and reproduction instead of on units sold and the bottom line. So, due to a widespread ignorance, I can't get a session for or even sell to a needy label or artist. I gave all my heart and soul [to this industry], and it has put me deeply in debt. I can't help myself from wishing that more of you had a chance to use it, to experience the real recording environment we seem to have replaced with simulators and finalizers. What a waste, I say.

*Dan Hoyt
The Lab Inc.*

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Barry Bongiovi (right)
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CURRENT

BRUCE FAIRBAIRN REMEMBERED

Record producer Bruce Fairbairn passed away on May 17, 1999, at his home in Vancouver, British Columbia. He was 49. Originally a trumpet player in the Canadian pop band Prism, Fairbairn rose to international audio industry fame in the 1980s with his work at the



now-defunct Little Mountain Sound, producing top acts like AC/DC (*The Razor's Edge*), Aerosmith (*Permanent Vacation*, *Pump*), Bon Jovi (*Slippery When Wet*), Motley Crue, Poison and other "heavy" bands. He also kick-started the careers of several talented local engineer/producers, including Bob Rock, Randy Staub and Mike Plotnikoff. Bands came to Vancouver because they wanted to work with Fairbairn, and he single-handedly put Vancouver on the map as a place to come for big-budget album projects.

In 1995 Fairbairn acquired Vancouver's Armoury Studios from his old friend and bandmate, songwriter extraordinaire Jim Vallance, who had originally built the facility as a writing studio. After acquiring Armoury, Fairbairn used the studio on a number of high-profile projects, including The Cranberries, Van Halen and INXS's last album. Recently he had been working with Yes, who were nearing the completion of mixes for their new album when Fairbairn died.

A memorial service was held for Fairbairn at the Chan Center and was at-

tended by more than 300 people. "A Celebration of the Life of Bruce Earl Fairbairn" was highlighted by reminiscences from close friends, as well as musical performances from Jon Anderson and Steve Howe of Yes, Tom Keenleyside, David Sinclair and a moving version of "Taps" played on Bruce's trumpet by his son Brent. After the service, guests were encouraged to stay and mingle on the outdoor patio and trade fond memories of Bruce, while an impromptu group of friends known as the Bozo Band played old standards. It was a classy yet casual affair, just as Bruce would probably have wanted it.

His accomplishments aside, Fairbairn was a man who always put his wife, Julie, and three sons—Scott, Kevin and Brent—first. In an industry where this is not always the case, he was known as a true family man and excellent role model who always instilled people with his "go for it" attitude. His natural leadership and organization, combined with an uncanny musical ear, gave him the ability to bring the best out of people.

—Tim Mosbansky

BIZ/TECH '99 A HIT IN CHICAGO

More than 100 recording industry professionals gathered at Chicago's Midland Hotel May 14-16 for SPARS's Biz/Tech '99 conference, "Smart Business—Smart Technologies." The conference kicked off with a lively keynote address by Gateway Mastering's Bob Ludwig called "Navigating the Future: New Audio Formats." In his remarks, Ludwig noted that the audio industry seems to be moving in two directions at once: "Our industry is splitting apart at the seams. On the one hand we finally have the promise of very high-resolution audio formats, and on the other hand, new technologies are degrading audio data to the lowest point that will still allow consumers to download a song to their computer."

Ludwig, who has been involved with DVD authoring for two years, also spoke about the vast potential of both DVD-Audio and Super Audio CD, but noted that the 5.1 handwagon is still being powered in part by hype and that the learning curve in DVD is steep. He

told the assembled studio owners, managers and engineers that "getting involved in new technologies such as DVD means you will inevitably take a few arrows in the back," but he urged everyone to "work to see that we continue to advocate quality and become pilots of the future, not passengers in the back of the technology boat." Appropriately enough, Ludwig's speech was broadcast live over the Internet.

Biz/Tech '99 also featured a number of illuminating panel discussions tailored to the professional audience on topics including the DVD authoring business, studio business automation systems, new music delivery systems, and press relations. Additionally, a small onsite Technology Expo gave the conference participants a chance to check out an array of new products and to interface with manufacturers' representatives. And on the concluding Sunday afternoon, three Chicago studios—Chicago Recording Company, Studio Chicago and Colossal Mastering—opened their doors for tours. All in all, it was a spirited and informative two-day event.

—Blair Jackson

WELCOME TO SUMMER NAMM!

NAMM Summer Session 99 takes place this month, July 23-25, at the Nashville Convention Center and Arena. NAMM University is offering 31 sessions, including nine focused on technology. NAMM's annual Pre-Show party happens Thursday, July 22, from 8 p.m. until midnight. To register, call 800/767-6266 or visit www.namm.com.

MPGA LEADERS EXPLORE 5.1 AT OCEAN WAY NASHVILLE

On May 22, The Music Producers Guild of the Americas (MPGA), sponsored by Sony Professional Audio in association with Dolby Laboratories, presented the latest in a series of 5.1 "hands-on" mixing conferences, at Ocean Way Nashville. Over 100 MPGA producers, engineers and invited guests attended.

Featured presentations and detailed 5.1 mixing sessions were conducted by engineer/producers Chuck Ainlay, Ed Cherney and George Massenbourg, in

—CONTINUED ON PAGE 16

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INDUSTRY NOTES

Solid State Logic (Oxford, UK) appointed industry veteran **Timothy R. Mungovan** as sales engineer, broadcast and post-production... **Michael Santucci, MS, F-AAA** audiologist and president of Sensaphonics Hearing Conservation, was presented the **Larry Mauldin Award for Excellence in Education** in the hearing health care profession. Santucci's articles have appeared in both medical and music industry trade journals, and he has often lectured to both industries about hearing preservation strategies... **Otari Corporation** (Canoga Park, CA) named **Tim Schaeffer** to the position of director sales and marketing. Schaeffer was previously director of sales-pro audio. **Tamara Rogers** was appointed technical services manager and will be responsible for the supervision of the company's technical support and customer product services. **Daniel A. Palmer** was brought on-board as product manager for the **RADAR II Series Multitrack**... **Elkhart, Indiana-based Crown International** named 15-year industry veteran **Stephen Morris** as its product line manager for amplifiers. Morris recently served as Western operations manager for **AEI Music Network**... **Sam Spennacchio** was tapped for president of Northeast operations at New York City-based **Signal Perfection Ltd.**, a cornerstone company of **Production Resource Group**. Spennacchio recently served as national sales manager for **Crest Audio**... **Symetrix Inc.** (Lynnwood, WA) appointed **Bruce Stimpson** as national accounts manager... **Mark McKenna**, formerly GM of **Bearsville Sound Studios**, was appointed vice president of sales and marketing at New York City-based **The Toy Specialists**. In May the company celebrated 15 years of service in the audio equipment rental business... **EVI Audio** (Buchanan, MI) announced the appointment of **Jim Tassey** as national sales manager, professional sound reinforcement. Tassey also will con-

tinue his role as sales and marketing manager with **MERLIN**... **Dan Pearce** joined **Ashly Audio** (Webster, NY) to manage the research and development of the company's amplifier and analog signal processing products. Pearce, a 25-year veteran of the industry, most recently worked at **Applied Research and Technology**... **PreSonus** (Baton Rouge, LA) named **MMS Inc.** as **PreSonus Audio Electronic International** factory representative. **George and Donna Mantoan** will handle all of the company's export sales... **D.A.S. Audio** (Valencia, Spain) appointed **Joe Brusi** as manager of the newly created applications and systems group and the **Autopol** platform... **Robert E. Schmitt** was promoted to president and CEO of **Industrial Acoustics Company** (New York City)... **Telex Communications** (Minneapolis) tapped **Todd Bergum** for Western regional sales manager... **Bag End** (Barrington, IL) news: **Philip R. "Phil" Earnest** was hired as sales manager, and **Bencsik Associates** signed on to represent the company in Florida... **Roland Corporation U.S.** moved to 5100 S. Eastern Ave., Los Angeles, CA 90040-2938; mailing address: P.O. Box 910921, Los Angeles, CA 90091-0921; phone 323/890-3700... **JBL Professional** (Northridge, CA) announced that it would distribute **SIA-Smart Pro Version 3** and the upgrade from previous versions and that the package will be available immediately through **JBL Pro** dealers and distributors... **Disc Makers** (Pennsauken, NJ) announced the acquisition of **Martin Audio** of Seattle, WA. **Martin Audio** will stay in Seattle and keep its customer service personnel, graphic design and mastering departments... **Transamerica Audio Group, U.S.** (Thousand Oaks, CA) appointed **TechRep Marketing** as its new sales representative for the Southeastern United States. ■

—FROM PAGE 12, CURRENT

collaboration with Ocean Way co-owner and producer/engineer **Allen Sides**.

"Everyone who attended was eager to know more about what is inevitably the way ahead," said **Ainlay**. **MPGA** founder and chairman **Ed Cherney** teamed with **Ainlay** to demonstrate methods for 5.1 mixing in the studio's **Neve 8064/GML** automation room. "We gave the attendees actual hands-on experience," **Ainlay** explained. "The thing that worries most people about 5.1 is just lack of experience, but once you dive into it, there is nothing to it."

Massenburg led morning and afternoon sessions in the **Sony Oxford Room**. **Dialog** was intelligent, sometimes humorous, sometimes nonbelieving, and very productive. "Our 5.1 mixing sessions identified gaps in both equipment and techniques," remarked **Massenburg**. "We're glad to be here filling the gaps in technique, and we hope that the manufacturers will take the initiative in developing badly needed tools."

Dolby conducted demonstrations of its recently introduced 5.1 Headphone for attendees, and provided information about the status of 5.1 audio standards. **Genelec**, **KRK**, **JBL** and **M&K** provided full 5.1 surround sound monitoring in both control rooms and studios, while **BASF** sponsored lunch; a cocktail party was sponsored by **Mix**.

The **MPGA** can be reached at 323/462-8850; fax 323/462-1677; or by visiting www.musicproducer.org.

—*David Goggin*

CORRECTIONS

In the noise gate manufacturers' contact box in May '99 (page 134) we printed **Valley Audio's** phone number incorrectly. The correct number is 316/265-9500. Our sincere apologies.

The studio on the cover of the June '99 issue, **Media Resource Group**, was mistakenly referred to as being in **Cleveland, Ohio**. It is located in **Cleveland, Tenn.** *Mix* regrets the error.

We omitted the location of **Four Seasons Media Productions**, featured in the June "Class of '99" (p.40). The facility is in **St. Louis, MO**.

Finally, the **TEC Awards** will be held on **September 25**, the second night of the **AES** convention. ■

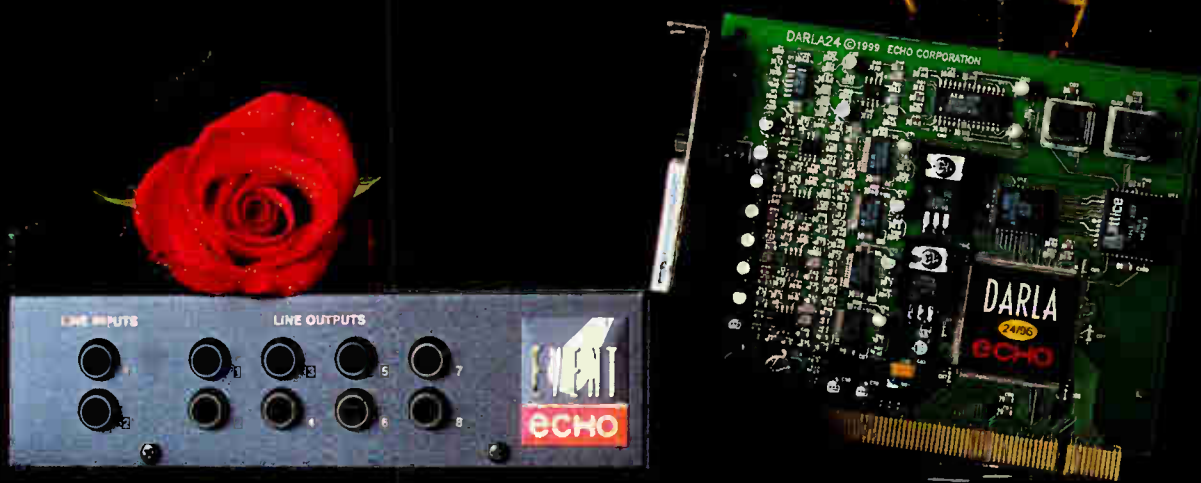
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CHRONIC SOFCOSIS

A HORRIBLE DISEASE OF OUR TECHNICAL TIMES



ILLUSTRATION: BUD PEEN

Ladies and gentlemen, I speak to you today not as my usual passive, unopinionated, agreeable self, but as a Doctor of sorts, a Doctor who has become aware of, if not contributed to, an inevitable yet no less terrifying condition spreading rampantly among you. A condition that, once identified, may be seen to manifest in predictable patterns, each more psychotic than the last.

I speak of course of Sofcosis, or Induced Bipolar Sofcosis (IBS). While observed and casually commented upon over the last decade or two, only I, Stephen St.Croix MD (u), Ph.D., DDS (MiniDisc user, Past Hardware Designer, and now Dedicated Developer of Software) have been able to isolate and define this condition successfully.

This month I shall once again dispense with my usual introductory rhetoric and cut directly to the chase, as this subject is far too serious to toy with.

IBS is a new disease, though there was one contained outbreak of a related condition within the United States immediately following World War II. IBS is a psychological disorder that, as is often the case in extreme psychosis, eventually manifests itself in sociopathic behavior and often advances to include physiological symptomatology. It's nasty business, to be sure.

The main reason IBS has been so difficult to define accurately is that it manifests in several seemingly dissimilar ways, depending on the

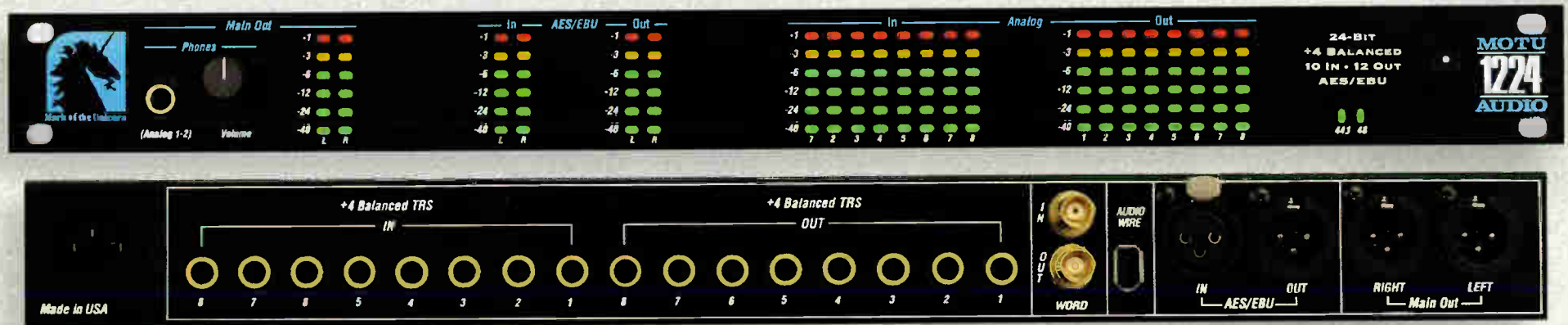
subject's long-term history of exposure to technological advancement. Truly this disease, discovered and defined by me, Stephen St.Croix MD (u), Ph.D., DDS, is the first widespread human malady whose causality can be traced to the simple *existence* of technical advancement.

As a side note, I was originally planning to name the disorder after myself, as is the right of the discoverer, but then I realized how difficult it must be for all those other doctors who have discovered horrible maladies and named them after themselves to get dates. I mean, who would feel comfortable sitting down for that first dinner at the best restaurant in town next to a person whose very name brings forth images of worldwide suffer-

BY STEPHEN ST.CROIX

—CONTINUED ON PAGE 233

Introducing the 1224.



24-bit balanced +4 analog I/O - with 116 dB dynamic range - for your Mac or PC

- The 1224 is a 24-bit hard disk recording system for Mac OS and Windows 95/98.
- 10 independent inputs and 12 independent outputs.
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- 116 dB dynamic range (A-weighted) on inputs and main outputs.
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- Stereo balanced +4 dB XLR main outputs.
- Stereo AES/EBU digital I/O (24-bit).
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- Available as a stand-alone system or as an expander for the 2408 system.
- Expandable — connect extra 1224 & 2408 expansion I/Os. Add up to 48 additional inputs and outputs to a core 1224 system.
- Includes AudioDesk™ sample-accurate workstation software for Macintosh with recording, editing, mixing, real-time 32-bit effects processing & sample-accurate sync.
- Compatible with all major Macintosh and Windows audio software applications.

1224 stand-alone core system: \$1295

1224 expansion I/O for the 2408 system: \$995

Everything you need for 12 channels of 24-bit audio, including the 1224 19-inch rack I/O shown above, PCI-324 audio card for Mac & PC, AudioDesk workstation software for Mac with plug-ins, and drivers for today's leading Mac and PC audio software.

The 1224 I/O shown above plugs right into your 2408 system and adds eight 24-bit balanced +4 analog inputs, ten balanced +4 analog outputs and 24-bit stereo AES/EBU digital I/O.

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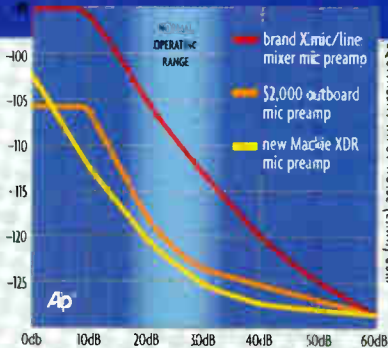
NEW VLZ PRO

THE FIRST MIXERS WITH EXPENSIVE

Two years in the making, XDR™ Extended Dynamic Range preamps deliver the pristine sonics and awesome specs of high-end outboard

If your hype alarm is going off, we can't really blame you.

The proof is in the listening. Visit your nearest Mackie dealer and audition the XDR™ preamp design in our new VLZ PRO Series compact mixers. Use the most expensive microphone they have. Compare XDR to ultra-expensive outboard mic preamps. Compare it to our compact mixer competition. Bring your golden-eared audiophile friends. We think you'll be amazed. We honestly believe that you've never before heard a mic preamp this good.



A A new standard for low noise in the critical +20 to +30dB operating range.

If money is no object, don't read any farther.

If you can afford \$1000 a channel for outboard "audio-ophile" mic preamplifiers, DO IT! Because no matter how much you spend on a microphone, its ultimate performance depends on how it interacts with the preamp it's plugged into.

EQUIVALENT INPUT NOISE (EIN) in dBm

Yes. We openly admit it: Many high-end mic preamps can effortlessly amplify the slightest sonic nuance, creating an aural panorama that's breathtakingly realistic, excitingly vivid and truly 3-dimensional in scope. For years, they've provided fidelity that just hasn't been possible with

the "stock" mic preamps built into mixing consoles.

Until now.

A massive R&D initiative.

We can confidently say that no other company in the world has spent the sheer number of engi-

neering hours—and \$250,000 in R&D costs that we just did on a single new microphone preamplifier design.

The XDR team started with blank paper, concerned only with matching or exceeding the performance of \$500 to \$2000-per-channel esoteric preamps. They went through hundreds of iterations and revisions and spent countless hours subjectively listening (and arguing). They started all over again several times. They scoured the world for rare parts. They spent

more time critically listening and evaluating the



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1604-VLZ PRO

16x4x2 • 16 XDR™ preamps

60mm faders • 16 mono chs. • 4 sub buses • main L/R • 3-band EQ with sweepable midrange (12kHz & 80Hz shelving, 100Hz-8kHz mid) • 18dB/oct. @ 75Hz low cut • 6 aux sends per ch. • Constant Loudness pan controls • 4 stereo aux returns • RCA tape inputs & outputs • 16 channel inserts, 16 high-headroom line inputs • 8 direct outs • TRS balanced outputs • Switchable AFL/PFL Solo • Ctl Room/Phone matrix with Assign to Main Mix & separate outputs • Ctl Rm/Phone level control • 12-LED metering plus Level Set LED & RUDE Solo light • Aux 1 & 2 Pre/Post • Aux Send master section w/level controls • Solo buttons with LEDs • Stereo Aux Return assign section with EFX to Monitor & Main/Submix assign • built-in power supply • solid steel main chassis • BNC lamp socket • Rotatable 1/0 pod allows 5 different physical configurations



NEW!

1402-VLZ PRO

14x2x1 • 6 XDR™ preamps

60mm faders • 6 mono & 4 stereo chs. • 3-band EQ @ 12kHz, 2.5kHz & 80Hz • 18dB/oct. @ 75Hz low cut • 2 aux sends per ch. • Constant Loudness pan controls • 2 stereo aux returns • RCA tape inputs & outputs • 6 channel inserts, 6 high-headroom line inputs • XLR & TRS balanced output • switchable +4/mic level output • ALT 3-4 stereo bus • Switchable ABL/PFL Solo • Ctl Room/Phone matrix with Assign to Main Mix & separate outputs • Ctl Rm/Phone level control • 12-LED metering plus Level Set LED & RUDE Solo light • Aux 1 Pre/Post • EFX to Monitor • sealed rotary controls • built-in power supply • solid steel chassis



NEW!

1202-VLZ PRO

12x2x1 • 4 XDR™ preamps

4 mono & 4 stereo chs. • 3-band EQ @ 12kHz, 2.5kHz & 80Hz • 18dB/oct. @ 75Hz low cut filter • 2 aux sends per ch. • Constant Loudness pan controls • 2 stereo aux returns • RCA tape inputs & outputs • 4 channel inserts, 4 high-headroom line inputs • XLR & TRS balanced outputs • switchable +4/mic level output • ALT 3-4 stereo bus • Ctl Room/Phone matrix with Assign to Main Mix & separate outputs • Ctl Rm/Phone level control • 12-LED metering plus RUDE Solo light • Aux 1 Pre/Post • EFX to Monitor • sealed rotary controls • built-in power supply • solid steel chassis



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LIVE ESOTERIC MIC PREAMP SOUND

mic preamp circuitry gives our new VLZ PRO™ Series board microphone preamplifiers.



design with every high-end microphone you can think of. Then they brought in veteran recording and live sound engineers for more exhaustive listening tests.

What we ultimately ended up with is not just an awesome sounding design. XDR is also a) highly resistant to damage caused by "hot patching" (caused by routing a phantom powered mic through a patch bay); b) remarkably independent of cable-induced impedance variations; and c) able to reject extremely high RF levels without compromising high frequency response.

Rejecting RFI without tuning out sound quality.

Because a mic preamp must amplify faint one millivolt input signals up to a thousandfold (60dB), its rectification components can also pick up radio frequency interference (RFI) from AM and FM stations, cell

WARM, DETAILED SOUND
0.0007% THD
NEAR OC-TO-LIGHT BANDWIDTH



OVER 130dB DYNAMIC RANGE FOR 24-BIT, 196kHz SAMPLING RATE INPUTS

ULTRA-LOW IM DISTORTION & E.I.N. AT NORMAL OPERATING LEVELS

IMPEDANCE INDEPENDENT BEST RF REJECTION OF ANY MIXER AVAILABLE

response. Second, we carefully-matched high-precision components for critical areas of the XDR preamplifier. Third, we direct-coupled the circuit from input to output and used pole-zero-cancellation constant current biasing (which also avoids increased intermodulation distortion at high signal levels).

Bottom line

for the non-technical: Our new VLZ PRO Series has the best RFI rejection of any compact mixers in the world. Period.

Controlled Interface Input Impedance.

If a mic preamp isn't designed right, it will actually sound different depending on

the impedance of the microphone and the cable load!

XDR's Controlled Interface Input Impedance system accepts an enormous range of impedances without compromising frequency response. Whether the mic/cable load is 50 ohms, 150 ohms or 600 ohms, XDR mic preamp frequency response is down less than one tenth of a dB at 20Hz and 20kHz!

Ultra-low noise at "Real World" gain settings.

Many mixers that tout low E.I.N. (Equivalent Input Noise) specs can't deliver that performance at normal +20 to +30dB gain settings. Graph A on the other page charts E.I.N. versus gain level for our new VLZ PRO Series vs. a major competitor's mic/line mixer preamps and a "status" outboard mic preamp retailing for about \$2,000. As you can see, our XDR design maintains lower noise levels in the critical +20 to +30 gain range than either competitor.

There's still more:

- **0.0007% Total Harmonic Distortion.** The lowest ever in any compact mixer.

- **Flat response.** Not only are XDR mic

preamps flat within a tenth of a dB across the bandwidth of any known microphone, but are also only 3dB down at 10Hz and 192kHz!

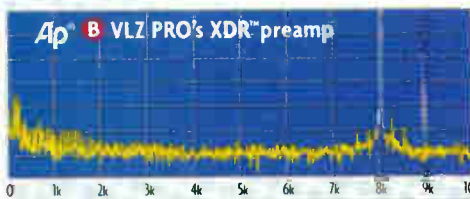
- **116dB CMRR** 20Hz to 200kHz and above.

- **Super-low intermodulation distortion** at very high operating levels (charts B&C at left) thanks to instrumentation-style balanced differential architecture, linear biasing and use of DC-coupled pole-zero-cancellation constant current that frees the mic preamp from power supply fluctuations.

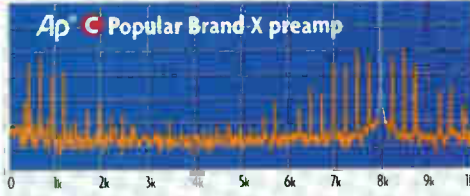
We could go on and on this way. But like we said at the start of this ad...

Hearing is believing.

Visit your nearest Mackie Dealer. Select a really high-quality condenser mic and try out the new 1604-VLZ PRO, 1402-VLZ PRO and 1202-VLZ PRO. Think of them as expensive esoteric mic preamps... with really excellent compact mixers attached.



IM DISTORTION



IM DISTORTION

XDR vs. Brand X FFT analysis of mic preamp Intermodulation Distortion. Mixer trims at 30dB, 0dB at inserts. The white spike at 8kHz is the fundamental tone used to "generate" the surrounding distortion artifacts—which the Brand X mic preamp has far more of.

phones and pager transmitters—even microwave ovens—and amplify them to audible levels.

We assaulted RFI on three fronts. First, we incorporate bifilar wound DC pulse transformers with high permeability cores that reject RFI but don't compromise audible high frequency



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PERILS OF THE FREE MARKET

GRUMPMEIER GOES LOOKING FOR A BARGAIN



ILLUSTRATION: JACK DAVIS

I ran into my buddy Grumpmeier at the local Electronics Land the other day, as I was mulling over a new microwave with more controls than my last mixing console. "That 50-year-old washing machine of yours finally give up the ghost?" I asked him. "Heck, no," he said. "I got that thing held together with fishing line and Silly Putty. It'll go another 30 years, I'm sure. I just came here to borrow some stuff for the weekend."

I laughed. "The library is across town, my friend." "No really," he replied. "I do this all the time when I need something for just a couple of days. Come over here, and I'll tell you how it works."

We crouched in low behind a 64-inch TV set that was blaring out a trailer for *Terminator IX*. Arnold was climbing into a time machine that would take him back to early

18th-century Leipzig, while solemnly proclaiming to a crowd of awed onlookers. "I'll be Bach!"

"See, I'm in the middle of a TV project, and one of my VHS decks died yesterday," Grumps began. "It's pretty old, and it would cost more than it's worth to fix. Meanwhile, I just got this new cut from the producer, who wouldn't know what window burn was if it bit him on the behind. So I gotta have two decks so I can make a work print. I've got a new deck on order from a mail-order house—one of those industrial models, I push my decks pretty hard—but it's going to take a few days to get here. In the meantime, I don't want to fall behind on the project, so I'm going to borrow a deck from these guys to do the dub. Here, take a look at this thing."

BY PAUL D. LEHRMAN

He shoved an S-VHS deck into my face. "This has got more features on it, and the picture quality is better than the deck I'm throwing out. But it costs about a quarter of what I paid. Amazing, huh? Of course, the transport knob looks like it'll break off if you look at it cross-eyed, and the case feels like it's made out of cardboard..."

"Borrow?" I interrupted him, as my eyebrows went up in tandem. "You mean you're going to try to steal it?" "No, dummy!" he snapped. "I mean borrow. They have this 30-day, no-questions-asked return policy. I put the thing on a credit card, use it for a couple of days, put it back in the box with all the manuals and the other crap, and bring it back for a refund. No problemo!" he smiled, quite pleased with himself.

"But that's dishonest!" I cried, causing him to put his greasy hand

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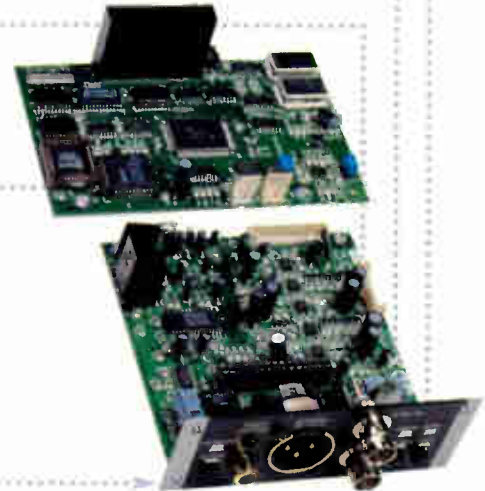
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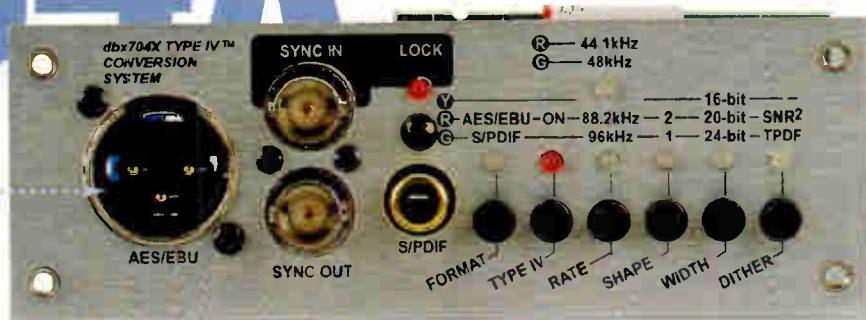


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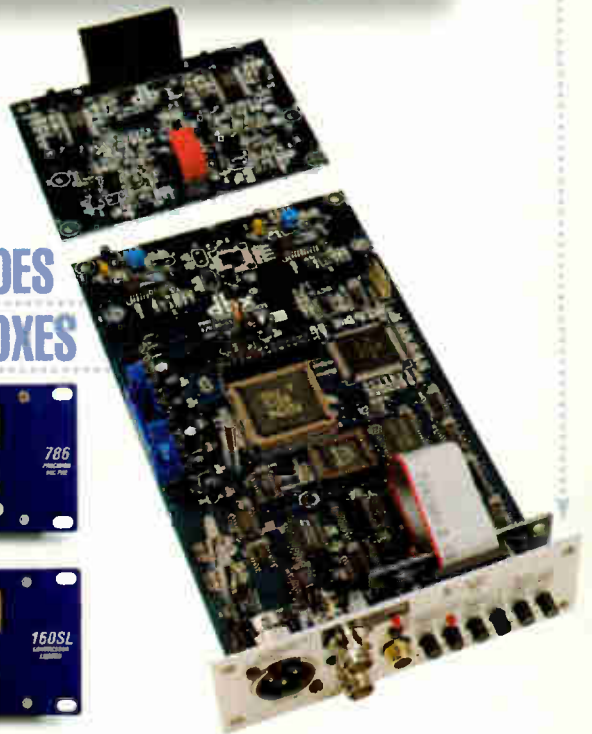
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over my mouth. "Of course it is," he hissed. "But they're asking for it. Hey, I didn't tell them to make this policy. They do it to lure in customers, make them think they're not taking any risk when they spend their money here. Why can't I take advantage of that? Who does it hurt?"

"Well, for starters," I started, in urgent but hushed tones, "the store can't sell something that you've returned as 'new,' can they? So you're actually devaluing the merchandise when you do that."

"So they knock down the price a few bucks, so what?" he scorned. "They're still making money."

"But what if everyone did this?" I asked. "What if you had 300 customers come in to the store every Friday, strip the shelves of DVD players and cart out all the big-screen TVs, and then bring everything back Monday morning?"

"You don't think that happens some weekends?" he laughed. "The people who work here hate the Super Bowl. Not only do they get crazy busy in the days just before it, but all the time they're wondering how much of the stuff is going to come back the next

week, and they're going to lose their commissions. But you know what? A lot of stuff doesn't come back. People get these things set up in their living rooms, and then they decide, 'Hey, this

I put the thing on a credit card, use it for a couple of days, put it back in the box with all the manuals and the other crap, and bring it back for a refund.

No problemo!

is great, why don't I hold onto this thing?" If they hit the limit on their credit cards, they just apply for another one. You know how many credit card offers I get in the mail every week? Heck, even those radical left-wing political journals my wife subscribes to have

their own platinum VISA cards now."

"So I guess you don't own a computer, either, eh?" I challenged him. "You probably just come here and borrow one for a month, and then return it and get the next model. That way you've always got the latest, and it doesn't cost you a dime, right?"

He took the bait. "Actually, they've got that figured out. With computer stuff, they charge you a 15 percent 're-stocking' fee, which pretty much kills the deal. On the other hand, sometimes when I've needed extra storage space, I've been tempted to get a hard drive from them and write off the 15 percent as a rental fee."

"Do you pull this with everyone you do business with?" I wondered. "Do you order guitars from the music store chains and send them back when the album is finished? Do you tie up some poor dealer's ADAT inventory when you need a few more tracks?" "Naw," he answered. "I just do it with stores I hate. And I hate these big chains that put all the locals out of business. Now they're trying to run the whole consumer electronics game themselves—like that chain that came out with that stupid 'Divx' thing. I mean, what's up with this 'disposable



media' stuff? If anything's gonna kill DVD, that's going to be it. Can you imagine what would have happened to CDs if they'd come out ten years ago with disposable ones that only played twice? If they'd tried that, we'd all still be playing vinyl."

"So you do still support your local pro audio dealer and buy your high-end stuff there, right?"

"Naw," he replied without a trace of irony. "I do everything by mail order. It's cheaper, and everyone has a return policy. Pro audio dealers can't match that. And besides, they all hate me."

"Can't say I blame them," I laughed. "But you know, you should give them a chance."

"To do what?" he scoffed. "They gonna offer me price guarantees like Musician's Best Bud, or Bert and Gert's World of Audio and Toaster Ovens?"

"You'd be surprised what they can do," I explained patiently, as a techno-grunge version of the Toccata and Fugue in D minor blasted away in the background. "The dealer I work with gives me great prices, and even if they can't always go as low as the big chains or the mail-order places, they can come close. I know if something doesn't

work out, they'll take it back—they don't have to trumpet that as a marketing come-on; it's just their way of treating customers. And they've even lent me stuff for a couple days when I was in a real pinch, and I didn't have to pay freight charges. But they only do this because I've been doing business with them for years. I've only got my one personal studio, so it's not like I'm buying hundreds of thousands of dollars' worth of stuff, but they know that when I need something, I'll come to them, and when my school or one of my students or a client needs something, that's where I'll tell them to go.

"That's called *loyalty*," I emphasized the last word in case he had never heard it before. "And it works two ways. Maybe I end up spending a few more bucks than I would otherwise, but I know that when they sell me something, they've made sure it will be compatible with my setup and do what I need it to do, and it will work when I pull it out of the box. Try to get that kind of assurance from a mail-order place that makes more money on guitar strings and calculators than on pro audio gear. And if something doesn't work, they'll give me a lot more by way

of assistance than just a Return Merchandise Authorization number.

"And there's another thing that a good relationship with a dealer can help you with." He was beginning to get fidgety, so I pushed harder. "If some manufacturer is doing a close-out on something, the only way you're going to find out about it is through a dealer. By the time it hits the magazines, you can bet all of the stock is gone. Last month a buddy of mine heard from his dealer that a manufacturer was blowing out a reverb that had only been out for a year at 60 percent off. He's a regular customer, so they let him be one of the first to know about it. He was smart enough to buy two—and he sold me one." I grinned triumphantly.

"Yeah, well thanks for the sermon," Grumps grumbled, and signified our conversation was over with his usual subtle tactic of walking away. "I got a dub to make. Say, are you using all of your multitracks next week? I got a band coming in with a big horn section, and I don't know how I'm going to handle them all. You think I could borrow a deck?" I just smiled.

A couple of weeks later, I ran into

—CONTINUED ON PAGE 236

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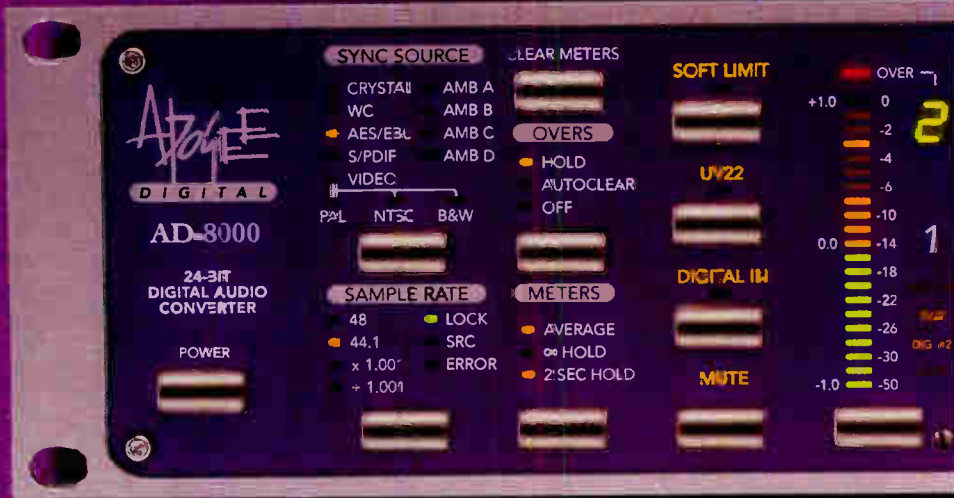


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RADICAL RECORDING '99

From Retro to Destructo

by Maureen Droney

Radical recording. Hmm—what do you mean by that?" That's the response I got from various engineers when I broached the subject of this article. "Well," I offered lamely, "I think it's like, uh, when you turn off the Pro Tools and record something without using a plug-in."

Sad but true, dependence on computer technology seems to be state of the state these days—sad, at least, to those of us who remember turning the 2-inch tape upside down to get a mood-drenched, backward echo; running tape slap (maybe around the heads of an adjoining machine to get a long-enough delay); tuning an acoustic chamber by moving the microphones inside it; and slicing those teeny tiny little slivers of tape off the front of the kick drum to get the drummer more in time. (And then, don't forget the payoff—pasting those slivers up on the wall to let the drummer, and everyone else, know who the real stud on the session was!)

ILLUSTRATION: TIM GLEASON

World Radio History

JULY 1999, MIN 33

Those were painstaking, time-consuming procedures. Achieving those same results now still involves painstaking, time-consuming procedures—it's just that they're almost always done with software instead of on various different pieces of hardware. That backward reverb just involves back-flipping a sample.

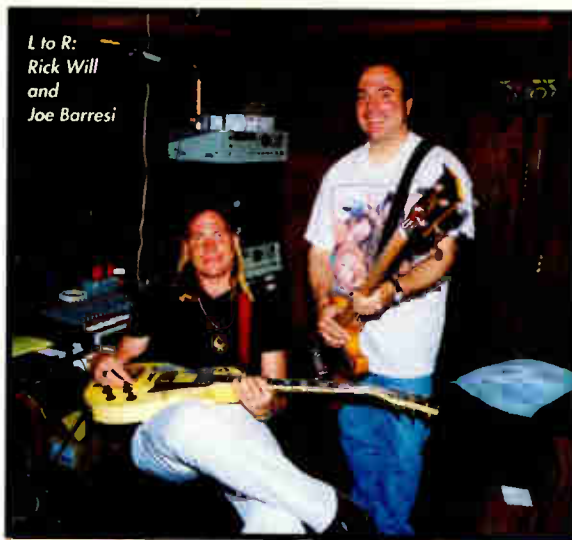
For this article we were hunting for something different. There are still plenty of creative engineers out there whose right hands aren't permanently glued to a mouse, and we checked in with a few to see what they might be doing that's new (or old) and different. The results of the hunt might more aptly be called "art recording": here are some stories and ideas culled from checking in with engineer/producers Rick Will, Joe Barresi and Sylvia Massy.

• • •

Going back to basics qualifies as radical these days—and that's how Rick Will has been spending a lot of his time. A musician and songwriter as well as an engineer/producer, Will has worked with artists such as Ziggy Marley, Bobby Brown, Amy Grant, CeCe Winans and Meredith Brooks. Lately he's been engineering for producer T-Bone Burnett on some projects where they've been experimenting with "less is more."

"So much of what we do is about capturing moments in a passionate way," comments Will, "and doing that doesn't always involve using the separation style of recording that's evolved over the years. Technology has given us more tools, but I don't think that's necessarily helped recording. I've done lots of slick and high-gloss records, but these past couple of years I've been getting back to simpler and more immediate recording.

"A lot of Gillian Welch's newest record [*Hell Among the Yearlings*] that I recently did with T-Bone was recorded with one mic; a lot of it was cut straight to half-inch, and we did our editing on the half-inch. I don't know that that's radical—I guess it's more primitive. But it's the opposite of the mode there's so



L to R:
Rick Will
and
Joe Barresi

ON SOME OF THE SONGS I RECORDED THE DRUMS THROUGH MY LITTLE, VERY BEAT-UP, SONY [TCS580V] CASSETTE RECORDER THAT HAS A BUILT-IN STEREO MIC. —RICK WILL

WE PUT AN OPEN-BACK COMBO AMP INSIDE ABOUT A TEN-FOOT LENGTH OF ROLLED UP CARPET TO GET THE SINGER THE "DISTURBED AND STEREO" SOUND HE WANTED FOR HIS VOCAL. —JOE BARRESI

much of these days where everybody is out perfecting things. I've used Pro Tools a lot: it's great, but so much time gets spent today locking up every kick drum, every snare, every little thing, that the funky things that happen—the great fingerprints from people—can get taken out. So this mode feels fresh to me.

"Gillian's record had a huge impact on me. It was amazing to have that amount of sound and passion coming through one mic. Gillian and David Rawlings played acoustic guitars facing each other, and we had different setups in the middle of them—a 67 pair, a C24 stereo mic and an RCA 44, and the 44 was often the golden egg. Most of the time they didn't use headphones; we would just wave at each other if need-

ed. They play quietly, so the mic pre's and the compression would be cranked up—everything's pumped up and it's so chillingly emotional, like something's going to explode.

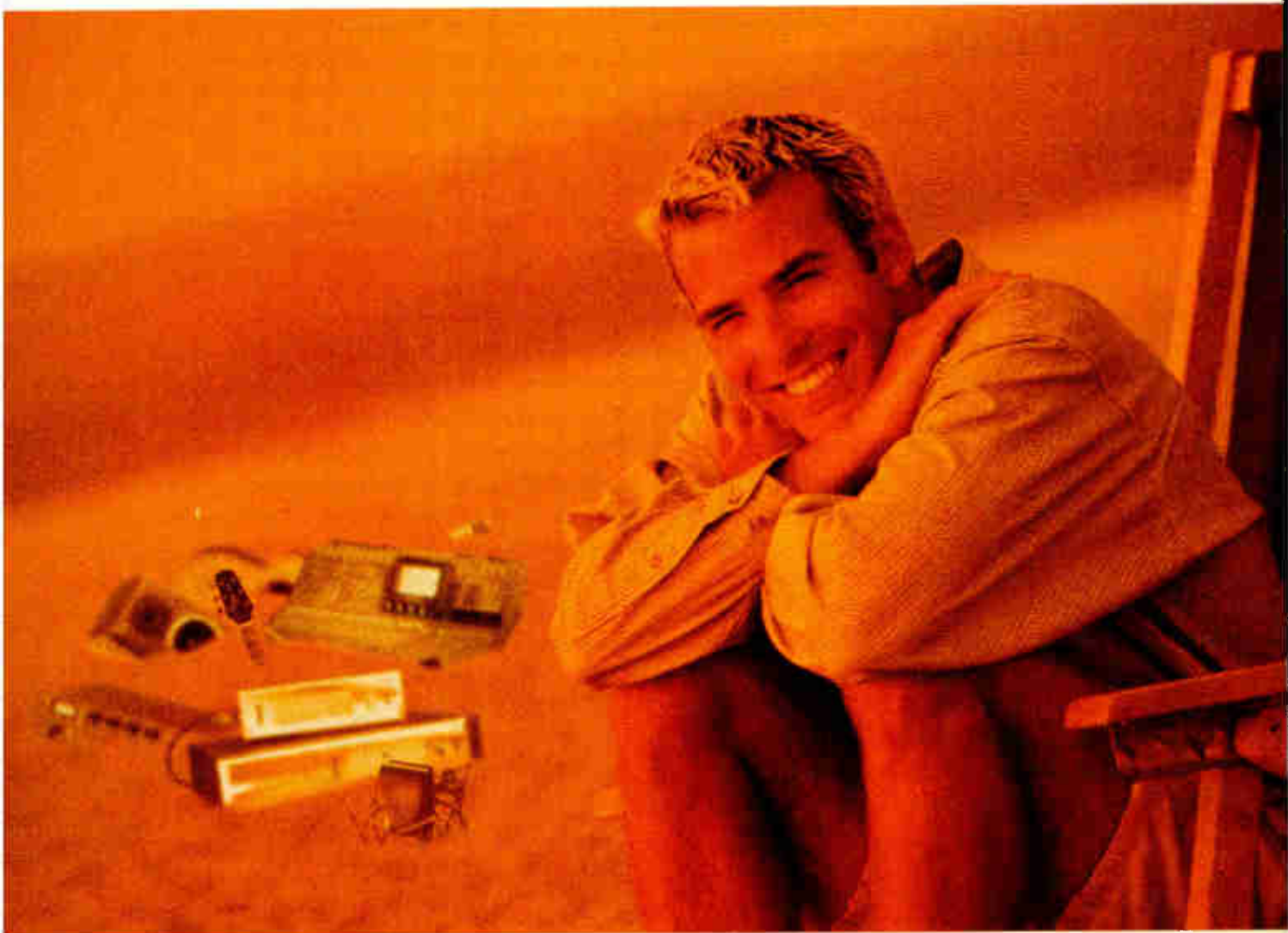
"On Joseph Arthur's record that we did right after Gillian's, also at Sound City's Studio A, some of the songs were recorded with Joe singing his vocal and playing acoustic guitar right next to the drummer. That was interesting, because we found that having to keep the vocal at the top of the pyramid of what was happening made the drummer play extra quietly, and with extra dynamics. It made the dynamics really delicate, and when something rose it was very apparent."

Will went even more low tech for a few of the cuts on Arthur's record. "On some of the songs I recorded the drums through my Dictaphone to two tracks," he says. "That's my little, very beat-up, Sony [TCS580V] cassette recorder that has a built-in stereo mic. When I do pre-production with bands, I'll often record their rehearsals to the Dictaphone and the cassettes always sound great, so I thought I'd try using it on this project. I ran two mics into Neve preamps, then through a Fairchild, which warmed it up and gave it some subs, and then to the tape.

"It worked and we ended up using it on four or five songs. I had other mics in place—a lot of which were set up to capture the drums with

just one mic. We were trying to capture three or four different pictures of the drums through distance and different mics, so some were sitting right in front of the drums, some were six feet or farther away. Sound City has a Western Electric 639, an old ribbon mic that I love—we used that a lot, as well as U67s, RCA DX77s and 44s in different corners of the room."

Will's experience on the other side of the glass as a musician (he also played bass on Joseph Arthur's record) probably has contributed to some of his un-technical recording preferences. "I played in a band when I was living in Tennessee," he explains, "and I've been writing a lot and working on my 8-track. A lot of that is, 'Just throw a



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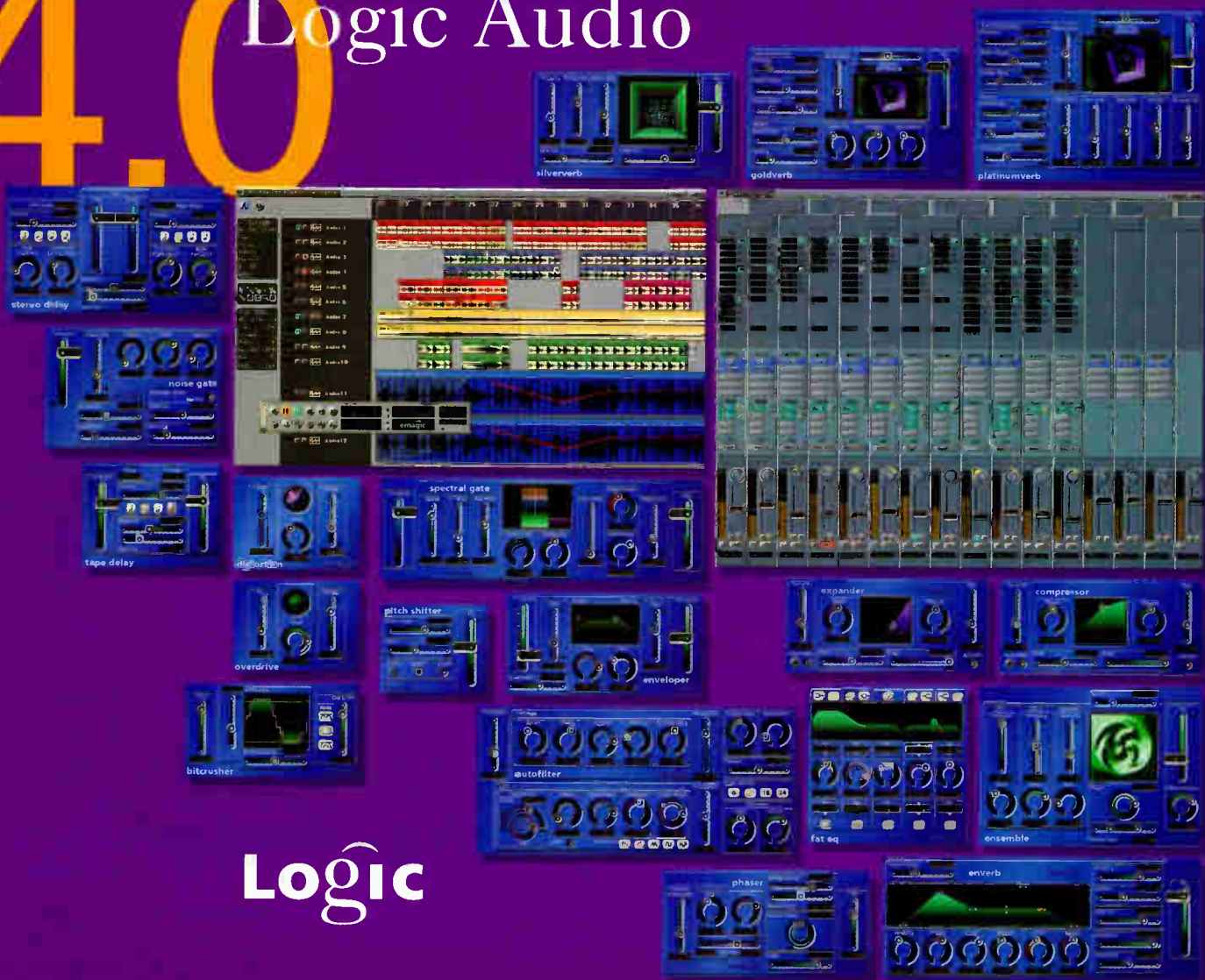
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mic up and do it quickly,' and I get great results out of my little DA-38 and my Mackie. That influence has carried over into the records I'm working on—the habit of quickly going for things and capturing them. I mix really fast, and if we get a monitor mix off the Neve that turns out great, why not print it to two tracks of the tape and sing on top of it? Or, sometimes when an artist is working on a new song, there will be one version that happens before they actually work it out that is totally beautiful. I'll have things up and going quickly so I can get that track before they say, 'Okay, we learned it, let's do it!' Because sometimes it's, 'You just did it!'

"I really try to keep ahead of what's fixing to happen so I can be there to take a picture of it—a lot



of the time those are the most beautiful things I record."

Joe Barresi has worked with Hole, Fastball, Fu Manchu and many other bands. He's known for his experimental style, but it's his work with The Melvins that most likely qualifies as radical. "The craziest thing I've ever done was probably on The Melvins' *Stonerwitch* record when we were working at A&M," he laughs. "We put an open-back combo amp inside about a ten-foot length of rolled up carpet to get the singer the 'disturbed and stereo' sound he and producer Garth Richardson wanted for his vocal. The vocal was recorded on tape already; we took a line out of the patchbay to a compressor, probably a dbx 160, to knock it down in level. Then we fed it to a Morley rotating wah-wah pedal and back through the amp. We used a Lab series combo amp that



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—SYLVIA MASSY



was open-backed so we'd get sound coming out both the front and rear of it. We placed the amp, with cables and cords attached, into the center of the carpet, rolled the carpet up to about the diameter of a kick drum, then put a kick drum on either side of it, facing in—it was like you were extending each kick drum. We put a PZM on the outer head of each drum, and then recorded the vocal in stereo, resonating off the bass drum heads."

That's a lot of work for a sound! I wondered how Barresi came up with this chain of events, and why? "Just because The Melvins are The Melvins," he answers. "They'll say, 'Make me sound like I'm singing underwater' or 'Destroy my vocal!' and I have to think of new things to do. I'd had the vocalist sing into a snare drum before and he'd liked the results—we'd taken one head off and put a contact mic on the other side and he held it up to his mouth while singing. So I guess I was thinking about tubes and resonance when we used the carpet."

"It's always something," Barresi adds. "I've mixed complete songs for them both forwards and backwards. On a Studer 827 you can play the tape backwards—start at the end, put it in reverse and mix the song backwards. Parts of those mixes have ended up on records. And we once recorded two songs across 24 tracks, then mixed one in the left speaker and one in the right, so they both played at the same time. One was speed metal and the other was sort of a ballad—they put that out as a single!"

As you can see, Barresi will try anything at least once. His heart, though, is in live recording and in the often difficult challenge of capturing the excitement of live music on tape. "I'm into speakers a lot," he says. "Drums almost always sound good to me in a rehearsal room with a P.A., so something I like to do is mike up a whole drum kit using small amps to create that P.A. kind of sound. You need an impedance adapter between the mics and the amps; then I'll put a mic in front of the kick and run that into a Fender Twin, put the snare mic through another combo, maybe put one overhead mic through a Vox AC30 using the vibrato, and then mike each amp.

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CIRCLE #019 ON PRODUCT INFO CARD

the sounds on the record. We thought there'd be a place for it, or that we'd create a place for it, but ultimately it was a disappointing recording and we could only do it once. So it's just a strong image to remember the record by. But the fact that everyone participated in the event and was so excited—the fire in the band's eyes was worth every minute. And it sparked the imagination for other things to happen that were much more usable on the record, so it was absolutely worth it."

The Sound City parking lot was the site of another creative afternoon when Massy used an '82 Dodge Colt to create

a solo on Toy Shop's upcoming Roadrunner release. "I thought, 'Why use a guitar?'" she says. "Why not use a car? We brought a U67 out into the parking lot and I played the car solo. We put the 67 near the driver's side front wheel, kept the brake on and revved the engine in time. It's a really wimpy car so it's actually very funny."

Cutting, pasting and crinkling resulted in something unusual for the A&M band Old Hickory. "They'd played one traditional Mexican song on the record, and we wanted to take it to another realm," Massy says. "We took the 2-inch tape and unspooled it, then crumpled it

really hard, which made it sound like an antique recording. Then we sliced 2-foot sections of the tape into pieces lengthwise, stacked them on top of each other, and ran the razor blade down the length of them at an angle. We took the layers from the bottom and taped them onto the top layer, mixing them up. When we were done, the band put some overdubs on the new track. It was bizarre, but there were elements that were still recognizable and untouched because the first eight tracks, which were the main tracks, were basically not changed."

For those of you who are disinclined to go as far as that with your master tapes, Massy offers a practical technique. As Barresi likes to run microphones into speakers, Massy likes to use speakers as microphones. And like Barresi, she likes to use extension tubes on bass drums. "For Suction's record," she explains, "I used two 15-inch woofers as mics—one on the bass cabinet and one on the kick drum. I'd used NS-10s that way on kick drum before, as a microphone for a real 808 effect, and I thought, 'If it works so well with the small speaker, why not try a 15-inch?' When I did it was surprising how good a response we got on the low end. For the kick drum I got a large pipe, the size of the drum, to extend it. At the end of that I suspended the 15-inch woofer, which was wired backwards to act as a microphone. I used a regular 421 to get the attack of the kick drum, and I mixed in the speaker for what I call the 'kick woofer.' The speaker really translates the lows on the kick drum; it's very deep and it has a lot of subharmonics. The same thing with the bass—the bass player was using an Ernie Ball five-string bass with the extra low string, so using the speaker as a microphone really helped to get those low subs out of that bass guitar. It's simple to wire the speaker: just unhook the end off a quarter-inch cable, put the two unbalanced connectors on the speaker and come out of the speaker into a direct box."

There's more—a breaking beer bottle symphony recorded in the alley outside Hollywood Sound, hanging the lead singer of System of A Down upside down in Rick Rubin's basement to sing...According to Massy, though, the above is "probably the best stuff," so we'll leave you to come up with your own session enliveners...keep us posted! ■

Los Angeles editor Maureen Dronoy swears that no studios or engineers were harmed during the preparation of this article.

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David Miles Huber, Author
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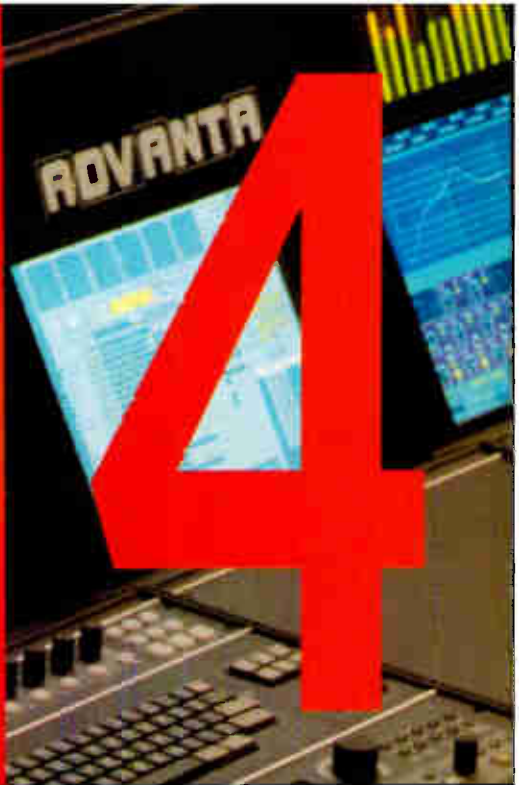
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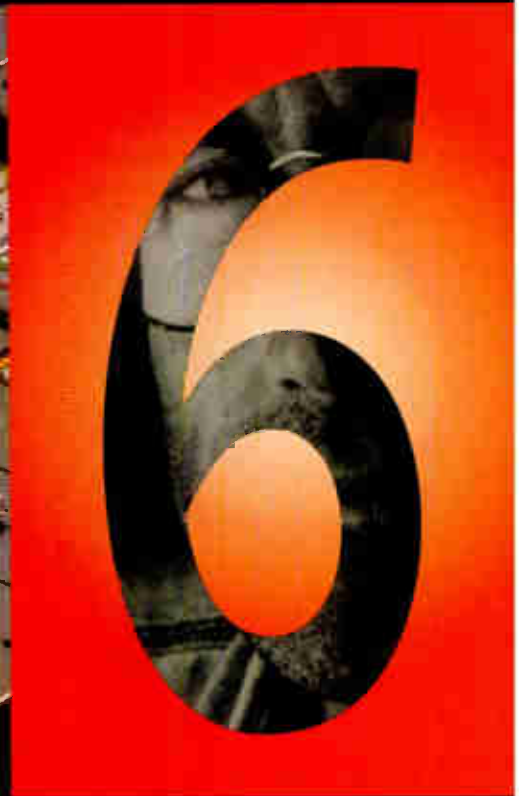
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Digital Consoles

NEWS IN THE MUSIC RECORDING AND POST-PRODUCTION MARKETS

Many regular *Mix* readers are already somewhat familiar with the digital console market. This relatively new but fast-growing segment of the audio industry has been covered in earlier features, Field Tests and Technology Spotlights. But as with all things digital, the faster, cheaper, better rule means that digital consoles are constantly revised and updated, and new products continue to come on the market, often offering enhanced capabilities at a lower price. That creates more opportunity for potential purchasers to find a product that meets their needs, but it also makes it harder to keep up with the latest developments. Therefore, whether it's a completely new model (or one that's finally shipping!), a software revision that adds new features or possibly a new hardware option (a channel expander, for instance, or 5.1 monitoring capability), we've asked 17 different manufacturers to tell us what they've been up to so that we can pass the news along to you. The news we uncovered pertains to consoles designed for music recording and post-production applications; live mixers are not included. We've split information into under/over \$25,000 sections to help you find the product that best matches your budget.

BY PHILIP DE LANCIE



Amek DMS

Tascam TM-D4000

General Music Falcon

CONSOLES OVER \$25,000

Amek (www.amek.com)

A fully modular digital mixing system with versions tailored for music and post-production, the Amek DMS is available with up to 96 channels at 24-bit I/O, and 32 buses with multiformat panning and monitoring. New for 1999 is the Channel Panel dedicated control surface, which provides control of all channel parameters using 48 rotary encoder pots and 32 switches. Also, Version 3.3 software provides dynamic and snapshot automation with moving factors, a multi-user password and privilege system and a pan divergence editor.

"The DMS is a mature platform with over 150 systems in operation worldwide," says director of sales and marketing Wayne Freeman. "Pricing begins at \$100,000 for an entry-level, upgradeable platform and tops out at \$225,000 for a fully fitted console."

AMS Neve (www.ams-neve.com)

Libra Post is a new digital audio-for-video console using the same 96kHz-ready processor engine as the company's flagship Digital Film Console (DFC). "In its three-operator form," says marketing director Colin Pringle, "DFC is the world's largest digital console. Libra Post is optimized for the TV/Video post environment and for use by a single mixer. It provides comprehensive post-specific automation through AMS Neve's Encore automation system, which it also shares with the DFC. Full surround basing and monitoring are provided from a dedicated monitor panel, while machine control and optional joystick partners complete the package."

Libra Post is available in sizes ranging from 12 to 192 inputs, with 48 buses and multiple stems up to eight channels wide. Options include AMS Neve's TDIF-MADI converter to enable use of low-cost MDMs with the MADI-

Digital Consoles

based console. Prices for Libra Post start at \$250,000.

Fairlight (www.fairlightesp.com.au)

Enhancements to Fairlight's FAME console were unveiled at April's NAB show in Las Vegas, including the availability of extended frame sizes of up to 48 motorized faders (available in groups of eight) and a new optional smart key macro panel with 12 individually programmable macro keys supporting up to 144 macros. "We also announced our upgrade to FAME 2," says John Lancken, CEO of Fairlight USA, "increasing the number of available mix buses and live inputs to 24 each, with 32 digital and analog I/Os. FAME 2 also has a built-in 24-track MFX3+ editor."

Software enhancements in the new Version 2 software for FAME, Lancken says, include support of dynamics on all mix buses, addition of an external stereo input on FAME's monitor section (for monitoring left-right feeds post Dolby insertion), frame-accurate punch-ins from preview to write modes, new automation modes including auto take over and automation of outboard signal processing gear.

Harrison (www.glw.com)

Harrison's new digital engine is a digital signal processing core designed for retrofit to existing SeriesTwelve and MPC control surfaces, converting them into digital or hybrid mixing consoles. "Our 40-bit SHARC DSP chip gives us the power to process 576 full channels of audio," says marketing director Stephen Turley, "with 1,344 inputs and 1,344 outputs, 136 console-wide summing buses and full monitoring facilities. This architecture provides dedicated channel processing, with no shared or allocated resources. Every channel contains complete dynamics processing, 4-band parametric EQ, highpass and lowpass filters, 32 aux sends, and panning facilities supporting all surround formats via 72 main recording buses and 24 reassign buses. And a proprietary, PCI-based I/O and communications system provides effective control of our control surface architecture and automation systems."

Otari (www.otari.com)

"The big news at Otari is the shipping of

our first Advanta Digital Production Systems, which feature 24-bit/96kHz capability and surround sound panning and monitoring," says the company's Kris Jackson, console products manager. "VRT National Flemish Radio & Television in Belgium has purchased four and taken delivery of two of the Broadcast Production versions of the Advanta."

Advanta, available in configurations ranging from 32-input, 24-bus to over 128-input, 48-bus, is priced starting at \$200,000. "We are also adding to the family of Advanta options by introducing a 19-inch Rack Options section, RADAR II Remote, DK Phasemeter Interface, Group Master Fader Panel, MADI I/O, and System Sync Card," says



Otari Advanta

Jackson. "And due to release this fall is the Advanta Music Production System, which is currently in Beta."

Solid State Logic (www.solid-state-logic.com)

"To SSL, every customer has different requirements," says Niall Feldman, marketing development manager. "So the physical arrangement and accompanying options of our digital console products vary enormously, because the features and discrete control surfaces are designed for their specific market segments and applications."

The latest in SSL's targeted digital console line is the Axiom-MT, a large-format multitrack production console with more than 200 automated mix inputs, 48 multitrack mix buses, 12 main mix buses and a 5.1-channel moni-



SSL Axiom-MT

toring section. For film and post-production applications, SSL has upgraded its Avant digital console with a new processing option for more than 1,000 audio paths, for more than 380 inputs, 64 main mix buses, 64 tape returns, 48 pre-dub buses, 24 aux outputs and 192 insert points. And for broadcast production, the Aysis-Air has been enhanced with support for up to 96 fully featured channels, new 5.1 surround sound monitoring features, and delay options for both channel feeds and subgroup outputs.

Sony (www.sony.com/proaudio)

The Sony OXF-R3, known as the Oxford, features 108 channels (12 of which are stereo), 48 multitrack buses, 24 aux send buses and eight stereo subgroups. According to Pro Audio marketing manager Terry Murphy, "There are many configurations available to optimize a system, from a tracking environment requiring many microphones to a 5.1 mix configuration that might be heavily interfaced to digital or analog outboard equipment. These configurations can range in price from \$650,000 to \$750,000.

"A number of new features," Murphy says, "have been introduced since last summer, with more to come in the upcoming Version 2.0 release this summer. There is an increase in the number of 'full' channels from 72 to 96, the addition of three new EQ types and two new compressor types, new automated motorized joysticks, Multi



Sony OXF-R3

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Record Stem capability, MIDI capability and extended dynamic automation. With Version 2.0, the console will offer a remarkable range of EQ and dynamics processing, including five equalizers and four dynamics processors individually selectable on a channel basis. This range includes new 'plug-in' options available for emulation of the GML-8200 EQ and GML-8900 compressor."

Soundtracs (www.soundtracs.co.uk)

The DPC-II digital production console is designed to serve "post, film and music production markets," says product manager David Gibbons. "The console features full rather than allocated processing on all channels, a touchscreen-controlled user interface, a 16- to 96-fader control surface, a 160-channel fixed-size engine, 24-bit conversion and 96kHz capability." Soundtracs says that 50 DPC-IIIs had been sold worldwide with two consoles recently going to

Howard Schwartz Recording in New York City.

Sizes for the DPC-II range from 16 to 96 faders, with or without patchbay. The console processes 160 channels, with 224 inputs/outputs through I/O-matrixed racks, and 40 buses. New software adds or upgrades areas such as track arming, studio feeds, automation scope, console split, monitor matrix, undo/redo, 5.1 panning, dynamics linking and multifader ganging. Price depends on configuration.

Unveiled in prototype form at April's NAB show in Las Vegas and slated for mid-summer release, Soundtracs' new DS-3 is a digital console based on the

DPC-II architecture, but in a smaller-footprint version designed for medium-sized post facilities and "second" rooms in larger studios. As shown, the DS-3 is available in a 48x32 (analog I/O) configuration, with 24 digital I/Os for inputs and buses in AES/EBU format. Standard amenities include 5.1 surround panning and a 32x8 matrix providing routing of any combination of channels or stems to the buses for flexible monitoring. Other features include 6-band EQ, compressors and gates on all channels, and 30-segment LED metering. All communication from the controller surface to the I/O racks is via MADI, while all the console DSP circuitry is located within the console stand. The interface follows the DPC-II model—although slightly scaled down—with three high-resolution touchscreens, 24 moving faders and total dynamic automation of all console functions.



Soundtracs DPC-II

Studer (www.studer.ch/studer)

Targeted toward audio post, broadcast and mix-to-picture environments including both film and video, the D950 Digital Mixing System is based around a DSP architecture that allows completely customized configuration by the operator

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CIRCLE #025 ON PRODUCT INFO CARD

Let the "critics" tell you how easy the Spirit Digital 328 mixer is to use...

Spirit's Digital 328 represents a new way of thinking in digital console design—it bridges the gap between analog ease-of-use and digital sound quality and features.

George Petersen of Mix says: "There are more than a dozen entries in the 'low cost' category of digital consoles, but in terms of pricing, performance and fast, logical interface, the Digital 328 clearly sets itself apart from the pack."

Take a few moments to read what he and other "critics" say about the Digital 328. Then, go to www.spiritbysoundcraft.com on the web for more information. If you're in the market for an affordable digital console, you need look no further.

On 328's user interface:

"The 328 is a real console interface that immediately feels as close to your comfortable old analog board as you could want... the consideration that has gone into every single button, knob and interconnect is striking." – Recording

"I liked the user interface a lot, and given that the most-requested features and digital interfaces are all included, the price is excellent." – Electronic Musician

"I like this board. It has a logical interface and enough knobs for fast operation (as such it could be ideal in a live performance or broadcast situation) while its audio performance is clean enough for any recording application." – Mix

On 328's E-Strip:

"The invention of the E-Strip is a stroke of genius, [giving] instant access to all controls at once on the selected channel."

– Audio Media

"The 328 is fast and intuitive, thanks in large part to its 'E-Strip' interface. There are no subroutines or hidden pages; anyone familiar with an analog console can sit down at a 328 and be working in a matter of minutes." – Mix

"With Spirit's clever E-Strip design, this digital desk has the feel of an analogue." – The Mix (UK)

On 328's equalization:

"... To my ears, this is one of the most musical sounding digital EQs I've ever heard." – Recording

"[One] of the best features of the desk: carefully tailored to provide control ranges similar to those on a top-notch analogue console, it is (dare I say) very musical." – Audio Media

On 328's effects:

"A strong selling point for this unit is the pair of built-in stereo Lexicon effects... Having quality effects in the digital domain makes for clean sounds." – Electronic Musician



On 328's automation:

"The automation is straightforward to set up and works well." – Audio Media

"Between the user setups, snapshots and dynamic automation, the 328 remembers everything except the line-input trims and 100Hz rolloff switches. It's easy to get used to this way of working." – Electronic Musician

On 328's connectability:

"Clearly, the Digital 328 provides a multitude of configuration options suitable for project studios, post-production facilities, radio stations and even live applications." – Electronic Musician

"The 328 interfaces to practically anything digital." – Recording

On 328's unbeatable value:

"All in all, the British have indeed landed with a winner. The more you use this board, the more you will discover its depth and power. With one of these consoles, you could start a musical revolution of your own." – Electronic Musician

"This mixer packs a mighty punch for \$5,000 [suggested list price]. It sounds excellent, does an excellent job of untangling all the various digital formats in use, and has an excellent interface. A bold step forward in digital console design." – Recording

"I like this desk! There's nothing better out there right now than the 328." – The Mix (UK)

On 328's mic preamps:

"The mic preamps have plenty of headroom... I was surprised at the clarity of the most subtle nuances of the percussion, including the last hint of sound from the bell trees and chimes." – Electronic Musician

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CIRCLE #027 ON PRODUCT INFO CARD

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using a Windows NT Configuration Tool (supplied). An internal digital router with stored patch snapshots eliminates the need for external patchbays, and supports interfacing of hundreds of analog and digital signals (either AES/EBU and/or MADI). The console supports "greater than 250" I/Os, with 24-bit I/O word-length, and 48 multitrack buses at 40-bit floating-point internal resolution. Pricing starts at \$300,000.

At the recent AES show in Munich, Studer announced that it had sold 26 D950s in the first 15 months of availabil-



Studer D950

ity and unveiled a major software upgrade for the mixer. According to the company's product manager for digital consoles, Rudy Kisejak, the new Version 2.0 software adds "comprehensive project management facilities, advanced control group functionality, improvements in the acclaimed Virtual Surround™ Panning (VSP) package, advanced channel strip assignment and refinements that simplify the operation of the console." Other V2.0 enhancements include the capability to split the desk for two-operator mixing, new Dolby EX and 7.1 surround capability, variable LFE (Low Frequency Effects) and center-channel feeds on each channel. Each channel also provides automatable VSP room simulator effects, and unique DSP-based simulations of XY/ORTF/sphere/HRTF stereo miking techniques.

CONSOLES UNDER \$25,000

Fostex (www.fostex.com) Targeted toward project and private studios, the new Fostex VM200 Digital Recording Mixer offers 32-bit processing and mixing for eight analog and eight digital ins (via ADAT optical) and in-

cludes S/PDIF out, eight direct bus ADAT digital outs, and eight flexible buses (stereo LR, effects 1/2, aux sends 1,2,3,4). A Cascade mode allows two VM200s to be linked together. Automation facilities include total control via MIDI and a 100-scene memory. The board has 4-band parametric EQ on each of the 16-input channels and uses Fostex's ASP DSP processors. Retail is \$1,499.

"Unlike other digital mixers," says Fostex's Budd Johnson, "the VM200 mimics a conventional console in many ways, giving you instant access to often-used features without requiring complicated recall operations. For example, each channel has a dedicated rotary pan control, and a channel's entire EQ can be accessed via rotary controls."

General Music

(www.generalmusic.com)

Now shipping, the Falcon digital mixer from LEM by General Music features 40-bit internal processing, 20-bit ADCs/DACs, 12 inputs (six mono mic/lines, two stereo channels and a stereo digital input switchable to AES or S/PDIF), four aux sends (two with DACs for connecting to analog outboard gear), 128-scene snapshot recall, dynamic MIDI automation, 3-band parametric EQ, two internal processors (reverb and effects), AES and S/PDIF outputs, motorized master fader and a digital cascade function for linking multiple Falcons. A backlit LCD shows mixer status/EQ curves/reverb parameters/etc. MIDI Machine Control of external recorders/workstations is standard and includes transport controls, track arming and eight locate points. Retail is \$1,495. An optional Lightpipe interface card adds eight additional I/Os for ADAT recorders, as well as a second DSP processor (doubling the number of available effects) for a total of 18 inputs and 16 outputs.

Mackie (www.mackie.com)

Mackie's Digital 8•Bus has been up-



Mackie Digital 8•Bus

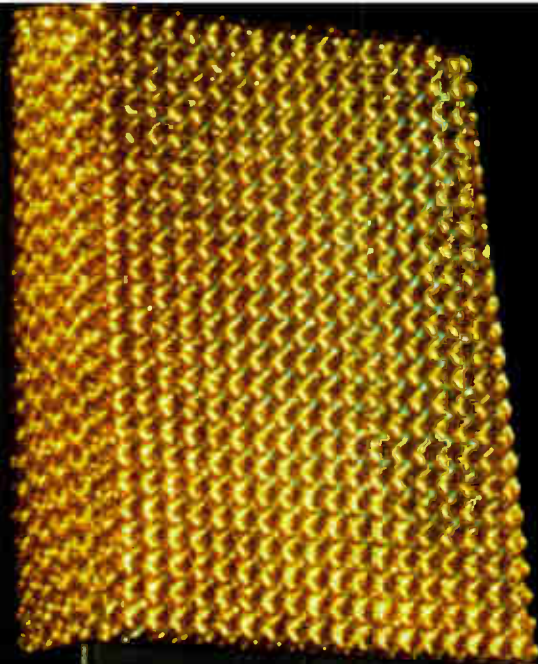
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Digital Consoles

graded with the release of Version 2.0 Real Time Operating System software. "The software architecture of the D8B enables us to implement new customer suggestions on a regular basis," says digital technology product manager Bobb Haskitt, "so we've been able to implement lots of customer requests." The additions include a new graphic automation editor, four user-selectable EQ types, solo latch, solo isolate, surround bus solo isolate, record safe and a new channel overview window. Version 2.0 also offers input, output and reduction metering for compression and gating, as well as the capability to link multiple consoles.

Panasonic

(www.panasonic.com/proaudio)

Panasonic's new MAX software package for Macintosh and Windows computers is designed to expand the automation and memory capabilities of the WR-DA7 Digital Mixer for use in

music, film, audio post and broadcast production applications. The WR-DA7 is an 8-bus digital console with 20 channel strips supporting up to 38 inputs. The \$4,995 console features 24-bit A/D converters, six aux sends and receives, and both dynamics and 4-band parametric EQ on each channel, with simultaneous output to +4 balanced analog and switchable AES-S/PDIF digital.

MAX takes advantage of a recent free upgrade (Version 1.2) to the WR-DA7 software, which now supports bidirectional MIDI communications with external controllers and digital audio workstations. According to Panasonic's David Oren, MAX allows the WR-DA7's automation to be controlled from an external computer, and for console parameters to be viewed on the computer's



Panasonic DA7

display. At press time, MAX was due for early summer release at \$495.

Roland (www.rolandus.com)

Roland has two new series of digital consoles, announced at Winter NAMM and about to ship as of this writing. The VM-7000 Series mixing system features up to 94 input channels, 40 XLR line inputs with 24-bit A/Ds and phantom power, 24 Fader Groups, support for surround sound mixing, and onboard scene, snapshot and dynamic automation. "The series uses a modular design with separate console and processor," says Tom Stephenson, manager of recording and mixing products. "That means it's no longer necessary to have the console and the I/O interface in the same room, which makes wiring a studio much easier. A system can have one or two consoles and one or two processors."

Console/control surface prices range from \$2,995 to \$3,695, while processor/I/O modules range from \$1,995 to \$2,795.

The VM-3100 Series mixing stations, meanwhile, start at \$995 and feature 24-bit A/D converters, eight mic

—CONTINUED ON PAGE 237

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SOUND KITCHEN

ON THE COVER

Watching
the
Dough
Rise

by Dan Daley

For the past two years the Nashville-area studio market has been characterized by consolidation and contraction, which makes Sound Kitchen a rare success story. The studio started as an 8,000-square-foot, two-room facility in 1993 in the Nashville suburb of Cool Springs, but has since tripled in size. In the past year, Sound Kitchen has added to its original pair of Neve VR studios two matching mixing/overdub suites, each fitted with Ultimation-equipped SSL G Plus consoles, a mid-sized tracking room with a refurbished 1983-vintage Neve 8108 with Flying Faders, and a large tracking room (on this month's cover) with a Neve V3 console. The four new studios are situated in a completely new structure adjacent to the original studio. Monitoring in the new studios is by Quedsted, and there are vintage Kinoshita-designed TAD speakers in the big tracking room. The four rooms, like the original pair, were designed by L.A.-based designer Chris Huston.



At the Neve VR72 in Studio A: Owners John (seated) and Dino Elefante

Owners (and brothers) Dino and John Elefante have deep and successful roots in the Christian music industry—Dino as a producer, and John as an artist. Between Dino's productions—he has produced records for major CC artists, including Petra, Carmen and Nikki Leonti—and John Elefante's success as an artist in the growing genre, a significant percentage of the studio's initial revenues came from that sector, which was experiencing growth even as country music, the staple of Nashville's studio community, was dwindling.

Another reason for Sound Kitchen's success is its location on the edge of Williamson County (which is Tennessee's wealthiest and is third in the U.S. in per capita income after Fairfield and Marin Counties), perfect for those affluent producers who don't want to make the trek all the way to Music Row and face the city's growing traffic congestion. "This is the Valley, man," says Dino Elefante of the area. "Just like when we watched everything move

to [the San Fernando Valley] in L.A. in the mid-'80s."

Just as important to their success, the Elefantés showed fiscal conservatism in their approach to expansion, preferring cash and equity to leases and loans. "Our debt ratio is 60 percent lower than the average for most studios," Dino Elefante states. While the 72-input VR was purchased new when the studio opened in 1993, the VR 60 was bought used, as were both of the SSL G Plus boards. The Neve 8108 was part of Pakadern, the two-room studio the Elefantés owned in Long Beach, Calif., for the eight years before they moved to Nashville; the V3 in the large tracking room (nicknamed the Big Boy) had been in storage for some time. Dino Elefante is a self-confessed technological pack rat. "We never sell anything or trade up," he says, adding that he tries to buy vintage value or very cost-effective modern equipment. "We have eight Otari RADAR systems, which means I can offer clients 48-track digital recording for \$1,000 a day or less," he explains. "We're scavengers. We learned that from our parents."

A combination of financial savvy, service—each room has a private lounge, and its kitchen rivals that of any Italian restaurant in the area—and highly functional rooms has built the business. Country music now accounts for 30% of the facility's revenues, with pop and rock projects making up another third; Christian is still strong at 20%, and miscellaneous other music projects complete the picture, according to a business plan survey the Elefantés conducted earlier this year.

The Elefantés have also learned the value of relationships in Nashville's music business social structure. Dino Elefante says several major Nashville producers, including Mike Clute, Brown Bannister and Michael Omartian, have been guaranteed availability at the facility regardless of when they book, which also helps alleviate the sting of the growing number of producers who build their own studios. And with so much of Nashville's work channeled through a relative handful of producers, the Elefantés say that approach is going to be expanded. The studio is expected to announce an exclusive agreement with five busy area producers, which will be supported by another planned facility expansion: a 4,300-square-foot extension housing two more control rooms and post-production and Pro Tools-based mastering facilities, all expected to come online by February of next year.

Dino Elefante is aware that the facility's rapid success has engendered some envy on Music Row, where many studios continue to struggle with country music's changing fortunes. His response is at once conciliatory and characteristically full of hubris. "We challenge any studio on Music Row to a charity fundraiser meatball contest," he says, quite seriously. In that department, he knows the Sound Kitchen has a definite edge. ■

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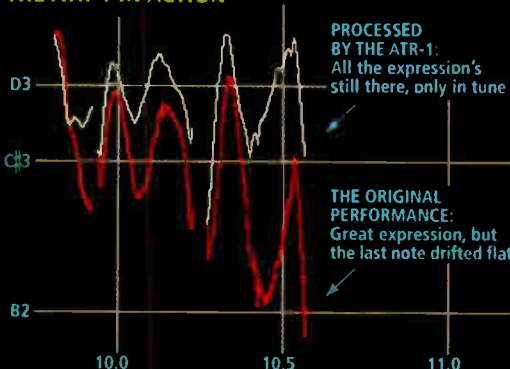
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STEVE EARLE

A MAVERICK ON MUSIC ROW

From a distance, the trajectory of Steve Earle's career follows a perverse but unbreakable logic: Everywhere he should have zigged, he zagged. Every time he should have said "No," he said "Why not?" A lifetime of defying conventional wisdom has exacted its price, but Earle today finds himself in the last place he ever expected to be—in complete control. He owns the label that releases his records. He owns the studio where the records are made.

More important, he has control of himself.

Earle left his home state of Texas for Nashville as a teenager in the early '70s, just as "outlaw" country singers like Waylon Jennings, Willie Nelson and Jerry Jeff Walker were abandoning the Nashville music establishment to become superstars back in Texas. The baby-faced Earle was perhaps the rowdiest outlaw of them all, a self-described "pinko" with a thirst for the wild life and a penchant for fighting cops. Yet he settled in on staid Music Row, which at the time was at the height of its country-politan kick.

With his second album, *Guitar Town* (1986), Earle proved himself to be a first-rate songwriter, a master of literate storytelling in the manner of Tom T. Hall who could also flat-out get after it. Chafing against the restrictive label of "country" musician, Earle kept pushing out, edging closer to rock 'n' roll. In 1988, *Copperhead Road* became the first Earle record to catch on with a rock audience, and suddenly his name was being mentioned in the same breath with Bruce Springsteen and Joan Jett.

But by the time *Copperhead*



PHOTO: MORELLO/GHERGIA

Road hit, Earle was already in the grip of a heroin habit that would eventually become all-consuming. After several lost years during which he gave up music completely, his free-fall ended in the only place it could have besides the morgue: Earle went to jail, on a misdemeanor for narcotics possession.

And that would have been it—more fodder for a "Where Are They Now?" feature—except Earle once again did the unexpected and began rewriting the script of his life. The long road back began with a brace of raw, acoustic songs on an album called *Train a Comin'*. That was quickly followed by *I Feel Alright*, whose self-referential title gave Earle fans the news they had been hoping to hear for

years. His name began to crop up elsewhere, too. The searing folk ballad "Ellis Unit One" stole the show on the star-studded *Dead Man Walking* soundtrack. And his rueful "Goodbye" was a highlight of Emmylou Harris's landmark *Wrecking Ball* album.

Then, with the 1997 release of *El Corazon*, Steve Earle stepped boldly to the front of the alternative country revolution. The record is a stunning smorgasbord of American music, from folk to pop to bluegrass to grunge. It ambitiously redrew the boundaries of what "country music" could be and earned Earle a Grammy nomination (in the category of Best Contemporary Folk Album).

But anyone who expected Earle to burnish his growing legend as the godfather of alt-country should have known better. Instead,

he followed up *El Corazon* with this year's *The Mountain*, an all-acoustic, all-bluegrass album recorded with the Del McCoury Band. Though some bluegrass purists may disclaim *The Mountain* for its garage-band sound, the record has found an audience, and critics have been inventing new adjectives to describe its majestic mayhem.

Earle is not bashful about what he set out to accomplish with *The Mountain*. "My primary motive in writing these songs was both selfish and ambitious," he writes in the liner notes, "immortality."

Mix caught up with Earle in the Music Row headquarters of his label, E-Squared, to talk about the many twists and turns of his career, and his surprising (to him) development as a producer and record executive.

BY BRIAN ALCORN

THE MIX INTERVIEW

We'll start with the question you probably hear every time you go back to Texas: How did you wind up settling in Nashville?

Well, let's see. I was 19 years old, and I'd been hitchhiking around in circles in

bly Woodland, which is over in East Nashville. It's been there since the '70s. There's two kinda medium-sized rooms and a small mix overdubber in there. The room I like is the old one in the back. I love that place. I've never made a record there, but I've worked on a lot of records there. I've produced a cou-



PHOTO: ADAM W. CARLOS

Steve Earle with the Del McCoury Band in Room and Board Studios

Texas for years, playing all the same places. The whole Cosmic Cowboy thing was going on in Austin, and that was kinda cool. Capitol Records came through there and signed a bunch of acts. Willie Nelson moved back and Jerry Jeff Walker was on MCA at the time and selling a lot of records and playing small arenas in the Southwest. Everybody was telling me, "This is it, you should stay here." But most of the people who were telling me that were refugees who had been to New York and had been to Nashville and had been to L.A., and I was 19 and I hadn't been there yet. Austin wasn't far enough away from home—it was only 90 miles. And also, I got there and looked around, and the weather was too good, the girls were too pretty and the dope was too cheap. I knew I'd never get anything done in a place like that. So I came to Nashville.

Nashville girls aren't going to be too huppy to read that they run second to Austin.

Aw, the girls in Nashville are nice, but have you ever *been* to Austin? [Laughs] The girls in Nashville are all right. I married about half of them.

You've been recording there a long time now. What rooms do you like best?

My favorite room in this town is proba-

ple there, and I did *Wrecking Ball* there, which I played on about half of. The room I'd most like to own in town is the old Monument Studios, which I think is Masterlink Studios now. I've always wanted to buy that room.

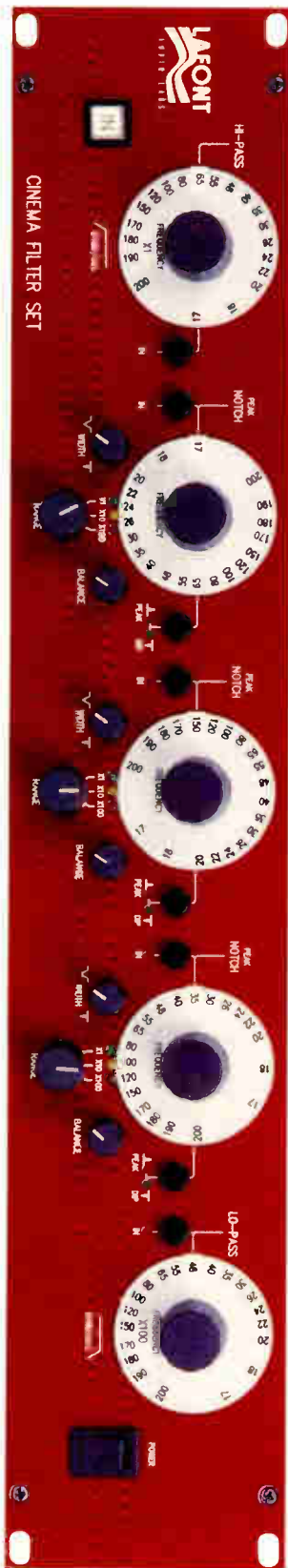
Why?

I like recording studios that look and feel like recording studios, instead of spas or warehouses. I don't know why I guess I'm just sort of lazy by nature, and when I'm working I like to know I'm at work. I don't like a lot of distractions. I like a lot of wires.

So the technical part of making records doesn't intimidate you, then.

I'm really sort of new to caring about the recording process itself. I mean, I had home studios, but they were just for demo purposes. And I made digital records for a long time, simply because I started making records for MCA in the mid-80s, and that was a rule. Jimmy Bowen owned every X-series Mitsubishi in town and he leased them out. So if you recorded for MCA, you recorded digitally. But in the '80s and up through the early '90s, when I kinda quit making records because my drug habit got out of hand, I didn't care that much about the recording process. I didn't know any better and I just didn't have a dog in that fight.

Then I went to jail. And when I got



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out and made *Train a Comin'* which is really the first analog record I ever made, it was like it opened up this whole world. One day I went over to Ray Kennedy, who had moved his home studio into what was the B studio of the old Digital Recording. I went there when I first started writing songs for *I Feel Alright* and did a guitar-voice demo for "I Feel Alright" and that ended up being [the title track]. We overdubbed bass and drums, and the next thing I know I'm producing a record. All of a sudden I found myself going out with Ray and finding and buying stuff like 1176s. We're way into 1176s. That's our deal. Our sound is no reverb and a stack—we've got on ten 1176LMs and four 1176s. The blue label ones, which are the pre-LM ones, are a little nastier-sounding, and for certain things, like my voice, that's what we always use. It just likes my voice. And old Telefunken mic pre's. And V76s. Originally we had three V76s that came out of Abbey Road that Ray owned when I got into the studio.

Then, after *I Feel Alright*, when we started this whole series of records that Ray and I made together for E-Squared, our accountants decided that we needed to be partners in a studio. So we formed two companies. One was Room and Board itself, and the other is twangtrust, which is our production company. And actually my brother [Patrick Earle] is sort of an associate member in that partnership, too. He's our second engineer and works with us whenever we do stuff for films. And whenever we just track something, my brother plays drums. He's a pretty good little punk rock drummer.

What we've done is come up with this creative environment that's perfect for me. And a lot of other people like it, too. Between Ray and me, we own about 170 guitars, and they're all hanging on wall hangers in the studio where we can see them, so nearly all of them get used. And we have a collection of about 35 or 40 really great amps, and they're just stacked up on one wall. Most of them already got power to them, so all you have to do is walk up and plug into them. If it doesn't work, pull out and plug into another one. It's a studio in the real sense of the word—it's a place to make music. We've got a lot of weird drums. We've got a great collection of snare drums, a good harmonium. I brought back a couple of really weird little percussion instruments

from Vietnam. We've got a hurdy-gurdy player on call.

It's real, live, organic, experimental recording, and it's really just based on the idea that nothing's been done to improve the way recording sounds since 1963 or '64. Everything since then has been about adding tracks. Or, once they got into big multitrack machines, noise reduction. And then cost reduction. But nothing sounds better than a V76, and there's nothing better to mix to than a good half-inch 2-track. It's real simple. Like a lot of people nowadays, the yardstick for us is Beatles records and records that were made in Europe during that period. The early Rolling Stones records, and middle period stuff like "Ruby Tuesday" and stuff like that. No one's really done anything that made a guitar or a drum sound better coming back off a tape since then. I don't hear it, anyway. I like to say that we're low-tech, but we're not low-fi.

You first got together with Del McCoury for just one song on El Corazon—"I Still

Carry You Around." How did that evolve into a full-blown bluegrass album?

Bluegrass is something that has always been a huge component of what I do. But I finally got good enough that I got the balls to actually try to play it. Albums sort of have a life of their own. Once I get three or four songs written, I've done it enough now that I start seeing someplace that they're going. The deal with *El Corazon* was I was ready to try to do everything I knew how to do on one record. And I had this perverse thing where I loved the idea of making what was essentially a rock record and sticking a bluegrass track in the middle of it. 'Cause I think bluegrass is rock 'n' roll. Carl Perkins said, "Hey, we were just trying to play like [Bill] Monroe, but we didn't play mandolin." It's the original alternative country music. Or at least the best of it.

"I Still Carry You Around" was my first attempt at writing something specifically bluegrass. Ronnie [McCoury] and I had gotten friendly; he'd played on a

RONNIE MCCOURY ON RECORDING WITH THE TWANGTRUST

"Steve and Ray [Kennedy] hadn't really worked with a bluegrass band before, so I helped out with some of the arrangements, picking musicians, things like that. They have one of the most amazing studios in this town. We walked in and there were mics standing everywhere in this one big room. Old mics, new mics. No isolation, no baffles. Steve was on one side of the room

with his guitar where he could make eye contact with us, and we stood grouped together on the other side. We ran the tunes down just to see who did what, then Ray pressed the Record button and off we went.

"It's a totally live record, except for some vocal overdubs, I think. These guys compress everything and burn it on the tape really hot. It's real, live music, and that's what I love to do. It may have some warts



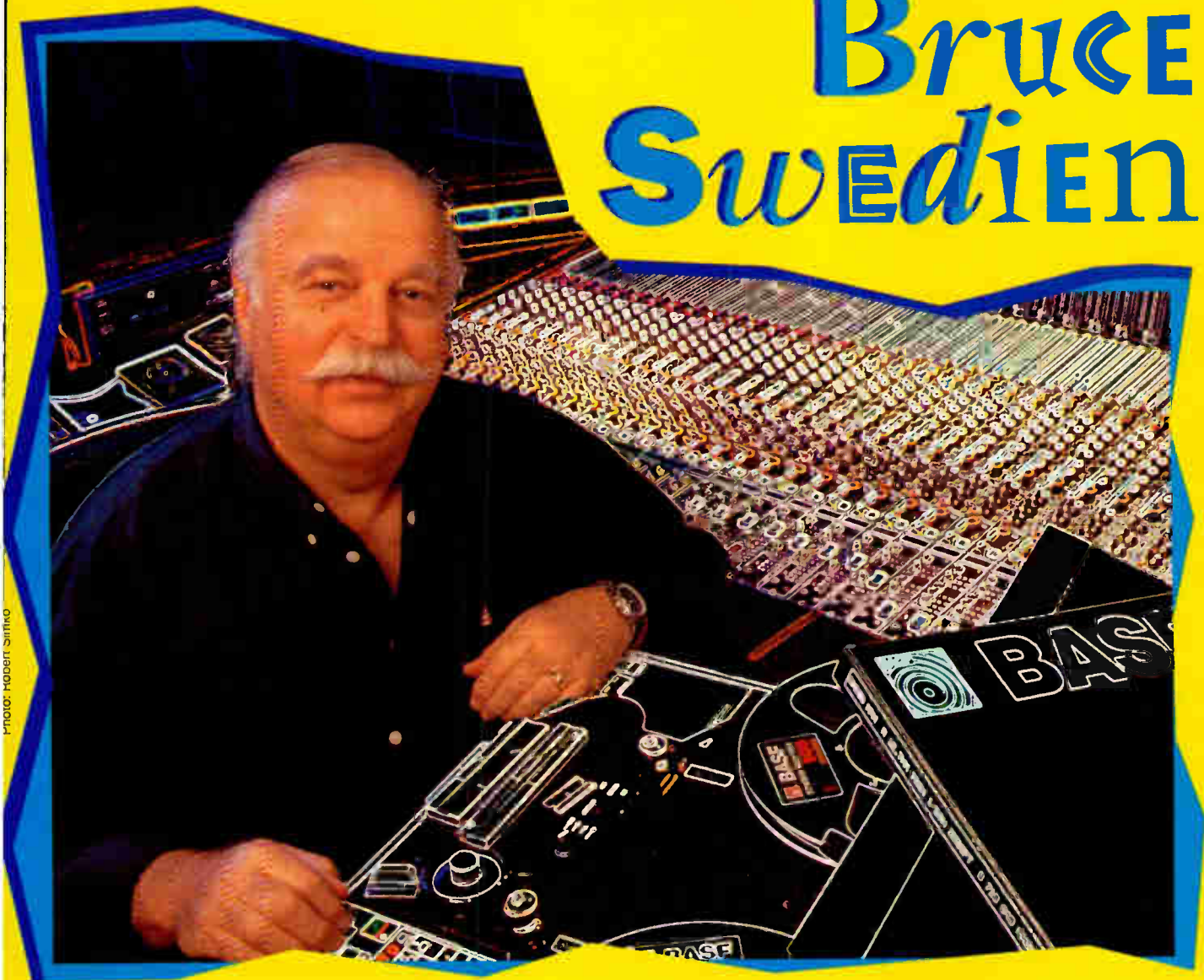
PHOTO: ADAM W. CARLOS

Ronnie McCoury, Del McCoury and Steve Earle

on it, but with all of us playing close together there was no way to get separation, so there was no way to dub even if we wanted to. The way they do it is like nobody else; it's more like rock recording than anything. They must have over a hundred guitars up on the walls in the studio, and when we started playing, of course, they all started ringing out. It was just this big, ringing noise in the room. It was the most incredible sound." —Brian Alcorn

Bruce Swedien

Photo: Robert Simko



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Five-time Grammy[®] winner Bruce Swedien's credits include recordings with Michael Jackson, Quincy Jones, Paul McCartney, Mick Jagger, Barbra Streisand, Natalie Cole, James Ingram, Duke Ellington, Oscar Peterson, Ernie Watts and The Chicago Symphony.



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couple of tracks on my records and a couple of records I produced such as the V-Roys, and that's sort of what started it. Del himself was vaguely familiar with me. He knew about *Copperhead Road* and *Guitar Town*.

Anyway, after we recorded "I Still Carry You Around," I played with the band at this thing that No Depression sponsored and we had to rehearse a set for that. And that's the first time I worked on one mic with them live. When we got done, I was just so proud of myself, because I hadn't put Del's eye out. After the gig, I went back to him and said, "If I was to write a whole record of bluegrass songs, would you guys record it with me?" Del said, "Yeah!" I read an interview with him later where he said he thought it would be four or five years from now or something. Nine months later, I had 12 songs and we were in the studio. He just didn't know me well enough to know that I don't fool around.

The sound of the songs on The Mountain is so much thicker, more rock than "I Still Carry You Around," which has a more traditional bluegrass sound to it.

I'll tell you what it is. When we did "I Still Carry You Around," Ray and I still only owned three V76s. But since then we purchased an old Telefunken sidecar, a broadcast sidecar, with eight channels. So we now have 12 channels. And because of the bluegrass thing,

there was just a small number of mics and it was all live. We were able to record the entire record through the top of the 1963 Telefunken straight to tape. We didn't even use the CAD console. Every single instrument is going through a V76.

You love to collaborate with other musicians. Is it the same for you in the stu-

Nothing's been done to improve the way recording sounds since 1963 or '64. Everything since then has been about adding tracks.

dio? Do you consider yourself a collaborator with Ray and the other people who work with you in the booth?

Yeah, without a doubt. Ray and I produce records together, but he also records on his own. I can't do records without him, but he can do records without me, because Ray's not just an engineer, he's a guitar player and he made really good records for Atlantic as a country singer. He had hits. But he just got tired of it, dealing with the

changes that have come about in the country music industry. He didn't want to play that game.

I've been avoiding asking you about the state of country music. It seems like too easy a target.

Ah, well, you know. I don't even know that much about it. I couldn't name you three people that are on the country charts right now. I do not really care. For a long time it's been the new MOR. That's exactly what it is. There's nothing wrong with making pop records and marketing to a certain demographic. I have no problem with that. Music doesn't have to be profound. I just think it's really important that it doesn't go out of its way *not* to be. [Laughs] All music has a place, except for maybe Garth Brooks records. I think he's the anti-Hank and needs to be done away with somehow.

Horsewhipped, something like that?

I'll throw on my cowboy boots again when Garth Brooks goes back to Oklahoma.

I've talked to people who have said that Nashville has really changed in the '90s, that there's been a big migration of talent there and that the recording environment is very different from what it was in the '70s when you first got there. What are the changes that you've perceived?

I'm not sure that I agree with that. It's true that we get a lot of people coming here. I don't know that it has changed anything, though. There's always been music to the left of center made here. And there's always been rock music made here. Bob Dylan used to come here to record. Roy Orbison made records here. When I got here in the '70s it was me, Guy Clark, John Hiatt... There was a circle of people that weren't writing stuff for mainstream country radio. And that's sort of always gone on. My partner in this label, Jack Emerson, managed Jason & The Scorchers and got them their first record deal, and he sort of started alternative rock in this town. There's always that stuff going on. It's just that sometimes people pay attention to it and sometimes they don't.

Nashville is a nice place to live. People, when their kids start getting to a certain age, start wanting to live here as opposed to trying to raise their kids in L.A. That's why Emmy moved here. Look, it's a city with big-time music business infrastructure that's cheaper to live in than L.A. or New York, and it's a really, really pretty state. And if you can put up with a lot of Baptists, then it's a

RAY KENNEDY ON VOCAL MIXING

"You want to get a real voice on tape, so that it gets on tape as good as possible. We don't do a lot of post-production, because for us the performance is what we're after. A lot of it is picking the right gear, then encouraging people to sing really up close to the mic. You know how some people say that you need to get at least six inches away from the mic in order for the sound to fully develop? That's a bunch of crap. Get it right up in their face, get that capsule right down the larynx, so it gets everything. It's a little harder on the mics to do that, which is why a lot of engineers won't do it. They don't want to wear out their \$10,000 an-

tique mics, which is totally understandable. But that's where the character of the voice comes from.

"For Iris DeMent [who sang with Steve Earle on the duet "I'm Still in Love With You"]. I put one mic up for her that sounded too tinny. So I tried another, a German bottle mic from the mid-'50s [Neumann/Gefell CMV563] that had the capsule on the outside and it was perfect. A lot of people have told her that that's the best her voice has ever sounded on record. I kinda got lucky with her, because sometimes you can go through a dozen mics trying to find just the right one."

—Brian Alcorn

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THE MIX INTERVIEW

good place to live.

You mentioned Emmylou Harris. I know you really enjoyed playing on Wrecking Ball, and she's on just about every record you've made. What's it like recording with her?

Playing on *Wrecking Ball* was such a privilege for me. I was really honored, and it was great how it was done—very organically. Emmy's like... God, if Emmy ever moved out of Nashville, that would be the first time I would ever consider leaving. She's so much to me. There's me, her, Buddy and Julie Miller, who are a cottage industry unto themselves, and a handful of people here who are this peer group that I have that are just really amazing. If Emmy's around, she's on anything I do at some point, and it's just always a joy. I'll do pretty close to anything for Emmylou Harris. I'd do anything short of start shooting dope again for Emmylou. That's

about the only thing I wouldn't do.

Do you think you'll ever do a full album with her?

Oh, God, I'd love to. But you know, there's a lot of stuff left to do. That would definitely be one of them. I want to do a whole record of Townes Van Zandt songs one of these days. I'm seriously thinking about it. I'm capable of playing exactly like Townes did. I think I want it to be really straight interpreta-

tions of the way he performed his songs.

You said you're going back into the studio for a new album in September. Do you have ideas yet of what that record will be like?

It's three-quarters written already. It'll be 100 percent written by the time we start recording. It's a rock record, a pop record, or whatever. I mean, it's going to be more like *El Corazon*, kinda all over the place. A loud songwriter record.

How is it different producing the bands on your label than producing one of your own records?

I make records relatively quickly, but with the baby bands I do a lot of pre-production in their rehearsal space, where they're comfortable, before I bring them into the studio. Especially if they've never made a record before. My stuff is actually recorded in the time between other records, up to a certain point, then it will sort of reach critical mass and



PHOTO: ADAM W. CARLOS

Ronnie McCoury (left) and Ray Kennedy

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THE MIX INTERVIEW

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we'll go in, cut the tracks and finish it.
My favorite thing is making a record on a kid that's never made a record before. You have no idea how cool that is. I learn a lot. I steal unmercifully from these kids that record for my label; it keeps my music fresh. I insist on just a couple of things. I insist that it be fun. I'm not opposed to someone who wants to put their hairshirt on to make records, I just don't want to do it myself. *I read somewhere that you consider yourself a writer first and foremost. What does that mean in terms of how you go about crafting your songs?*

I'm a lot better musician and a lot better producer than I thought I would ever grow up to be, but my gift is still primarily literary. In fact, I write short stories now; I have for the last few years. I'm getting ready to publish a collection. And I write poetry, which I just started recently. That's the hardest thing in the world. I write albums to be albums. I always have, and I've gotten better and better at it, I think. I'm having the most fun doing it that I ever have.

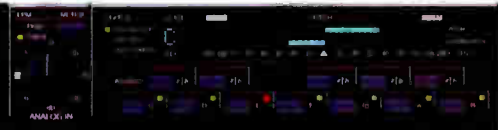
I write all the time. Every day. I mean. I write poetry, or I write short stories, or I write songs every single day. And I have ever since I got out of jail. I was almost dead four-and-a-half years ago. man. [Laughs] And I didn't write a song for four years. the last four years I was using.

You didn't write a song for four years? Nope. And it almost killed me. So then writing every day is how you stay connected, how you keep it together?

Well, I feel like I have a gift. I've finally accepted that, and when one has a gift you are supposed to use it, and when you don't use it, bad shit happens to you. That's what I firmly believe. But I stay clean the same way everyone I know stays clean. I go to meetings and I have a sponsor and I do it by the book. It's the one area of my life where I actually listen to somebody else. But, yeah. I survived three wrecks that should've killed me, one overdose that should've killed me. I mean, I'm real lucky to be here and I just don't f— around anymore. I don't think I'm immortal anymore. I've sort of stepped up the level of the way I do everything.

Brian Alcorn is a freelance writer based in San Francisco. His work has appeared in the Los Angeles Times and the L.A. Weekly.

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ARROWHEAD

SCOTT HENDRICKS' PERSONAL PARADISE

In his years as an engineer in Nashville, Scott Hendricks says he spent thousands of hours in studios that, aesthetically speaking, were little better than dungeons. Today, 21 years after his arrival in town, Hendricks has become a preeminent producer (with credits including Restless Heart, Alan Jackson, Faith Hill, Brooks & Dunn, John Michael Montgomery, Trace Adkins, Leroy Parnell and Suzy Bogguss), major label chief (first for Capitol's Nashville division, now for Virgin's) and owner of the lovely Arrowhead Studio.

The studio is on Hendricks' 100-acre spread in Leipers Fork (outside of Nashville) in a building adjacent to his home, on what was formerly the site of a two-car garage. He'd originally planned to refit the garage, but in pursuit of his vision Hendricks ended up tearing down this structure, and (with the design help of Steve Durr) building Arrowhead from the ground up. "I wanted to be able to be in an atmosphere that was overwhelmingly creative," Hendricks says, "so I opted for an emphasis on aesthetics. It's really a different kind of design than most studios:

It looks like a chalet you'd see in Colorado—23-foot ceiling with big log beams. The entire back of the studio is glass. You can look in the front window and see all the way through the control room and the studio and out to the pool—a beautiful view."

Hendricks says there are treatments that can be used to keep reflections down for tracking and mixing (including ones that pull down over the windows) but explains that the space is ideal for the work that's done there. "This is a place that was built really for me," he says. "It's not for commercial

bookings at all. Writers for my publishing company (Big Tractor Music) use it to cut demos, occasionally close friends of mine use it, and I use it for my record projects. I really specifically wanted to make it more of an overdub room, possibly evolving into a mix room, where if you had to track, you could. And we've done all three. [The building includes a piano room, a lounge, kitchen and maintenance room, all wired for recording.] But primarily I will come into Nashville and cut tracks at a studio that's designed specifically for tracking in the way that I typically do—more live, more players. I will then move my project out to Arrowhead to do the overdub process, which for me is roughly 60 percent of the time spent on making a record."



Arrowhead at left, next to Hendricks' private cabin

And working at Arrowhead, Hendricks feels, is time well spent. "It's just a real joy to work in a place that is filled with natural light and that's in natural surroundings," he says. "And artists aren't like guitars; you can't just change the strings and start all new. They get tired, emotionally and physically, and they need a break. This is a great place just to hang out when you're breaking. You can ride a horse, hike or take a swim; you

BY ADAM BEYDA



can fish, go golfing, cook out, whatever. It's so conducive to creativity." Hendricks works on all his productions at Arrowhead, including, most recently, Restless Heart and new Virgin artists Julie Reeves and Jerry Kilgore.

The studio is equipped with 48 tracks of Otari RADAR and a pair of Mackie D8Bs (totaling 144 channels). When overdubbing, Hendricks uses the Mackies mostly for monitoring (through Tannoy 215 mains or an array of near-fields),

preferring to go to tape through the studio's mic pre's (including models by Telefunken, Neve, API, GML and Trident). The setup serves both Hendricks and Big Tractor's writers well. "There are lots of different projects in and out of here," Hendricks says, "and with the D8Bs the writers have instant recall.

They cut on RADAR and mix right there on it." Also on hand are a Pro Tools 24 rig, loads of outboard and an array of mics, including Neumann and Audio-Technica pieces (the mic that Hendricks uses the most is a heavily modified AKG C-12).

In addition to creative inspiration, having his own studio gives Hendricks the opportunity to spend more time with his family. "The hours that we put in when we make records are pretty long," he says. "My private cabin is only a breeze away, so my daughter can just walk in and help me record." ■



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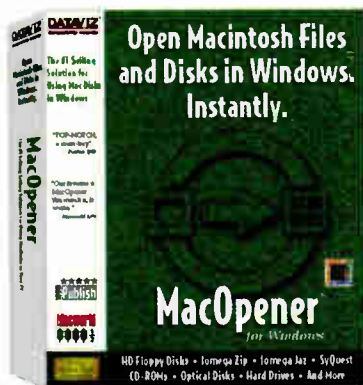
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BYRON GALLIMORE

HIT COUNTRY

There's a theme found in many popular self-help books that goes along the lines of "if you want to be truly happy and prosperous, then follow your muse and do what you really love." Byron Gallimore, one of country music's hottest producers, could easily be the poster boy for this motto. Over the past five years, Gallimore has been involved with (at last count) 15 Number One singles and sales of more than 15 million albums for artists including Tim McGraw, Faith Hill, Jo Dee Messina, Randy Travis, Ty Herndon and Jessica Andrews, among others. Yet all the success that has come his way is simply a great bonus for Gallimore, a man who really dives into his work every day for the sheer love of it.

Gallimore, who was raised on a farm near the West Tennessee town of Paris, started playing music in local bands in his teens but eventually turned his focus primarily to songwriting. His hard work at that craft paid off when he won the first Music City Song Festival, which led to a publishing deal with Dick James Music, where he scored a couple of Top 10 country hits. By the late '80s, Gallimore had left his farm and moved to Nashville where he worked for the Charlie Pride Music Group as a writer and A&R person, signing and developing songwriter/artists such as Jo Dee Messina.

It was there that Gallimore realized that as much as he liked songwriting, he truly loved recording, arranging and mixing music. Over time, he wrote less and less and spent more energy in the publishing company's studio, producing tracks for songwriters and then shopping them to labels. In time, the buzz on Music Row was that Gallimore had a knack for helping artists get deals. Along with the help and support of Charlie and



PHOTO: KAREN WILL ROGERS

Rosscene Pride (at Pride Music Group), Gallimore also received a lot of guidance from producer James Stroud, who opened doors that enabled him to leap from cutting publishing demos to major-label album projects.

One of the first co-productions Stroud and Gallimore undertook was Tim McGraw, now one of the biggest stars in country music, with more than ten million albums sold and 11 Number One's. It's been nonstop ever since. When *Mix* caught up with Gallimore at Ocean Way Studios in Nashville recently, he was wrapping up mixes on Randy Travis' next album and producing sessions on a new Brooks & Dunn effort.

Like a lot of successful producers, you developed a lot of your initial song smarts playing clubs in cover bands.

It was a great education. You learn what the people want to hear. Everybody [whose songs] I played onstage in a band were my influences, and that ranges from George Strait to Stevie Wonder, Eagles, Doobie Brothers and things like

Southern rock. I think this had a lot to do with me starting to write songs and sending them to Nashville. I realized that I wanted to do more.

I had always tinkered with writing, but I remember consciously making an effort and going in and buying three or four books on songwriting and reading them front to back. There are tricks that I would do, like go buy *Hit Parader*, and go to the back of the magazine where I wouldn't know the songs. I would look at the title and not look at the lyrics and try to figure how they would write a chorus that you could sing along with. Then I would look at it and see if I was getting

close. Then I would try to figure out how they would create the verses. I would study these other songs to try to learn the craft. Within a year, I had won the Music City Song Festival. It was actually a song called "No Ordinary Woman." There was a \$10,000 prize, and everybody where I lived thought it was a big deal, including me. [Laughs]

Did winning that competition help generate any activity for you in Nashville?

Kay Smith and Lyn Schultz decided to put in some calls for me, and I started in town with Dick James Publishing; that deal came as a result of winning that song festival.

Dick James wanted me to be an artist, because I always sang, but I didn't have my heart into it 100 percent. Quite honestly, I think I would've done very well songwriting. I had two Top Ten singles, The Forrester Sisters "Love Will" and Charlie Pride with "Every Heart Should Have One." I ended up working with Charlie as a result of this song, which was around the mid-'80s. I had a few cuts, but I got distracted.

In what way?

I would be writing a couple of

BY RICK CLARK

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songs a week, and then I'd go back home to West Tennessee and make demos. I soon realized that I was writing songs just to try out different things on the demo. That's when I found out what I really loved doing. It was like painting pictures. That's really when I came alive and learned I was hooked into trying to make records.

I wrote for the Charlie Pride Music Group for about three years, eventually taking a job running the publishing company for them. We were signing writers who wanted to be artists, too. I got involved in working on their demos, and I started writing less and less, until I was getting up every morning trying to figure out how to get the end product on this artist sounding good, so I could run over and pitch it to some of the record labels. This was something that I loved doing, just like I love to go fishing or go play golf.

Several of them ended up getting deals, one of them being Jo Dee Messina, who I started working with around 1991. I didn't get to produce any of those artists, but that was kind of the way it was, back in those days. The record label usually felt like I wasn't ready, and the truth is, I wasn't ready back then. I was somewhere climbing up this ladder getting ready to do this thing. This kept going on and going on. After a while, people started coming around and looking at me as a producer.

Tim McGraw resulted from that kind of buzz.

That's right. I went to see Tim around late 1992 at a Nashville club on Broadway called Diamond in the Rough. We hit it off great and he was into working with me, but then we ran into a stumbling block with Curb [Records]. I called James [Stroud], and he was kind enough to do the project with us. I owe James so much for giving me that opportunity. *Was there much pressure for you, making the transition from doing your own self-made demos on your own time clock to going into big-budget major label projects?*

The first sessions I did in this town were harder. When you're new and all those great session musicians don't know who you are, they're maybe wondering "What's this guy know?" I do know that there was a learning time for me, trying to figure out how to deal with all of those kinds of things, and sorting through the people who I got the best work or help from, to get results I was happy with. It was very different from



Byron Gallimore (left) and engineer Julian King

PHOTO: KAREN WALL ROGERS

playing all the parts and having all of the time in the world.

You mentioned that Jo Dee Messina was one of those you worked with at Pride years ago. Now, she's enjoying incredible success with a string of Number One hits. That's got to feel good to see your collaborative vision and hard work validated so nicely.

Jo Dee was pitched for three years. The first time I got a pass on Jo Dee, I didn't quit. I just kept going in and cutting sides. We cut like 15 things before it was all over. To me, it isn't just about going in and giving your time and asking to be paid for it. I wasn't hitting people for producer fees. I never did that for any of these acts. It was more like, "give me the opportunity," and even when they didn't get that record deal early, you don't quit there. You have to keep going, if you believe in that artist. Keep cutting and eventually something will happen. People around town will start saying, "They won't leave us alone. They really must believe in this." Then they might look back and start taking it seriously.

Tim McGraw co-produced Jo Dee with you.

Tim always loved her singing, and he would say, "If you ever get her a deal, please let me work with you on it." I pitched just one song of Jo Dee's to Curb, and she was signed off of that. So I told Tim about it, and he said, "I'd still love to work on it," and I said, "Absolutely." I didn't even think about it.

These days, radio loves Jo Dee. She has had eight weeks at Number One this year. This is the same person who last year, there were people who would've written her off. I knew not to write her off, because we knew how talented she was. We were preparing a great album on her, and making sure

she had enough hits on the album to sustain things.

So what do you define as a hit?

To me, it's when I'm riding down the road in my car and it feels like it did when I was 15 years old, and I don't have to think about it and I just like it. That's the way I felt the first time I heard "Sweet Home Alabama" or "My Girl" or whatever. It doesn't matter, but I've got to have that "feeling" about it.

My wife, Missi, listens to songs for me all of the time, and we go to the Waffle House every morning and listen to five or six songs from about 30 or 40 songs that she has picked out the day before. She'll say all the time, "You're not even listening!" I'll say, "If I've got to listen that darn close, then it must not be a hit." I kind of stick by that. It's got to wake me up real quick, and I've got to like it musically, like the way I loved "China Grove" or "Peaceful Easy Feeling." I don't know what the words are the first time I hear it, but I know I love the melody and something sticks with me. Then I'll go back, and listen to it in relation to the artist and say, "Is this idea completed, and is it well-written?" Then I think, "Is this something the artist would say? Is it hip enough for them or country enough?" Whatever the parameters are, you've got to learn that.

The more you can know your artist the better. I like going to song meetings with artists and hearing them pass on songs, because you get a vibe really quick on what they like and don't like. So my job and Missi's job is to find songs that the artist will be happy with, and to find a great song.

Even though you are known for your work in the country market, your production of Faith Hill's "This Kiss" was a Top 10 pop hit, as well as a huge country hit. I heard a hit song when I heard "This

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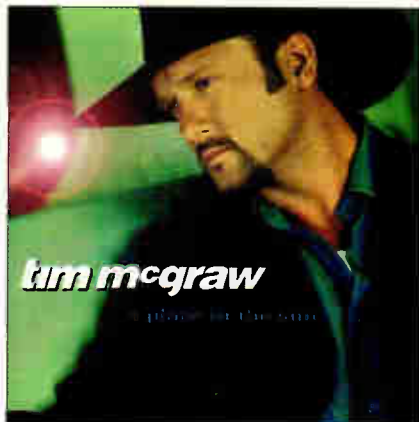
PRODUCER'S DESK

Kiss." The original demo didn't have all that layering, but it had that hooky chorus. A lot of work went into that rascal, until everyone was happy. If something doesn't quite work, we will go back and re-do it in a minute. Everything has got to glue together, and if it doesn't then we have to figure out what is wrong. I'll work forever on a song, until I get it right. A lot of times, I'll turn the clock off and never even turn those hours in to the labels or the artist, because there is no way to. It would be stupid.

The single sold a million copies, and the album is close to triple Platinum. This is the first album I've done with Faith. It was a long time putting it together. We've been working together for over two years now, and it has been unbelievable. Faith is really good at what she does, and she's able to communicate ideas to me. She has a lot of great ideas.

What do you look for in a vocalist?

I've always been after the stylist, more than someone who can do vocal acrobatics. There are a lot of really great singers who are not great stylists in country music. It's very important that a



singer sounds unique when you're looking for talent out there. That's true whether it's country or alternative or anything. You didn't have to hear two lines of Michael McDonald or Kenny Loggins to know that it was either of them. They're phenomenal stylists.

Do you have any advice for upcoming producers, especially those interested in working in Nashville?

Don't be disappointed when you don't get to produce the first two or three projects you shop. That maybe isn't as much true in the pop world as it is in country, but each step in your career is a stepping stone to the next one. I have

found that to be true every time—one thing leads to another.

If you come into this expecting anything, you're probably going to be disappointed. If I had come into this from a money or business standpoint, I would've long ago tucked in my tail and gone back to West Tennessee.

I learned this from years of writing songs and having them passed on. When someone calls you and says, "Your song is on hold," and then two weeks later your song isn't on hold, you build up this coat of armor. It's a tough business, and you get to where you don't expect anything. Even when they tell you, "Your single is coming out tomorrow," it's like "I'm not going to plan on that."

When we released Tim McGraw's second album, Tim was selling over 100,000 units a week. It didn't soak into me at all. We would go eat at a restaurant called Jamaica's, and everybody would come up and go, "Congratulations! Do you know what is happening to you?" I really didn't know. It was like I had some kind of shield around me.

I carry that from being raised on a farm. Farming is a great life, but it teaches you that you may not get rain when

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you really need a rain. You learn to not expect things to happen. You can have a beautiful crop of corn out there and wait all summer for a rain and end up with half a corn crop. It is those things that helped prepare me. Still, you don't care, if you love what you are doing.

Now you're working with Brooks & Dunn.

I've never worked with Ronnie and Kix before. I got a call from Tim Dubois saying "I need to talk with you about something." I went to his office, and he asked me if I would be interested in doing half

of the album. That was one of those things where I didn't have to think about it. I've always loved those guys' music. I saw them live with Reba one time and thought they had a great live show.

James [Stroud] and I are currently producing Randy Travis for Dreamworks, and that has been fun. We tracked the album in Santa Fe, where he has a home. He's always doing movies and he moves around a lot, so we had to find a place to catch him. We then went to his place in Hawaii, on another one of his little vacation breaks, and set up in his weight room, and Randy did the vocals in a bedroom. We brought three Sony

[digital] 8-tracks. We carried the [instrumental] tracks on eight tracks, then had eight tracks for him to sing, and then we had the third 8-track in case one of the machines went crazy and to back up stuff, too. James and I played golf every morning and then went in to record. We were over there for six days, but Randy sang 13 songs in two afternoons. He is unbelievable. He has that country thing that so few people do.

Julian King, who has engineered for James and me for a long time, was the engineer. John Guess is mixing for us now. Chris Lord-Alge and Steve Marcantonio have also mixed on a lot of stuff for us on projects, as have Julian [King], Russ Martin and Marty Williams.



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I like going to song meetings with artists and hearing them pass on songs, because you get a vibe really quick on what they like and don't like.

What other new projects are in the pipeline?

Jessica Andrews is a new act on Dreamworks. She's a phenomenal singer who has a song out on the *Lion King* soundtrack called "I Will Be There for You." We've been in pre-production for the last year-and-a-half. Be watching for her. There's also a new group on Curb called the Clark Family that is absolutely great. We're trying to get an album out by January of next year.

It's been amazing this last year or two, with "This Kiss" working for Faith and Jo Dee being so hot, and with Tim, who had the CMA Album of the Year this year. All three of those guys have been smoking. The calls that have come in over the last year are great.

I don't want to ever be so busy that I let down any of the artists I'm working with. I want to give them 100 percent. It's a real balancing act, but it seems to be really moving ahead. I'm so grateful to be working with all of these fine people. What can you say but I'm a lucky man. ■

Contributing editor Rick Clark is a producer, songwriter and writer based in Nashville.

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MIX BUSINESS

M E M O R A N D U M

THE INFOTAINMENT HIGHWAY

The Internet has become integral to audio in more ways than can be counted, and now another aspect has been added to the list. Pro audio's putatively first flame site was launched last December, by a project studio owner who decided to use the Net as a vehicle to vent his frustrations with a manufacturer. He set up a Web site, published his complaints, invited responses—and, in the process—catastrophized the already changing relationship between pro audio manufacturer and customer into yet another dimension.

This flame site incident illustrates how the Internet is becoming a trope for a universe of new rules that affect the fundamentals of this business. For starters, the degree to which people in this industry are plugged in was dramatically underscored by the range of responses the two sides drew. And the site is merely a blip on the screen compared to the large and still-growing number of usenets, chat groups and general-purpose connectivity out there between pro audio users and manufacturers.

Another point this incident illustrates is how the Internet changes the playing field, not only in pro audio but in all commerce. Once, if you wanted to vent, you might have needed a few thousand dollars for an ad in a magazine or newspaper, the way Ross Perot still does it. But thanks to the Internet, you can use \$50 worth of site-building software, and search engines globally start finding it before its metaphorical paint is dry.

In an era of marketing and branding, when perception is everything, all companies will have to find ways to deal with the inevitable perceptions that accompany situations like these. In a recent report in *Kiplinger's* magazine (April '99), a disgruntled customer set up a site complaining about Bekins moving company; within minutes, Bekins called the complainant's attorney to offer full restitution if the site were shut down. Dunkin' Donuts reportedly bought another irate customer's site. It's an almost knee-

jerk reaction to view the consumer in these situations as a David battling the corporate Goliath, and what's actually right or wrong in each instance often comes in second to the perceived battle. Competition is tough enough. Big companies are going to need more than Tylenol to deal with this new headache.

And the power of the Internet to affect the studio business is even broader. Scratch the surface at any record label function and you'll quickly find a very sensitive nerve associated with MP3, the compressed audio file format that in less than a year threatens to make the huge distribution networks of major record labels—and their biggest source of revenues—irrelevant. For studios, how-



ever, this could be the break that some have been waiting for, since a fundamental change in the way sound is distributed does not diminish the demand for it. More likely, new forms of Internet music distribution will stimulate demand.

But on a more metaphysical plane, the Internet challenges the very nature of sound and sound quality. Though computer-based sound has come a long way since the days of 8-bit game audio, Internet compression has often worked in exactly the opposite direction, making compromised audio ever more acceptable. When "acceptable" becomes the norm, what defines pro?

If digital audio is seen as the most revolutionary influence on sound since the advent of stereo, expect the Internet to have more effect than those two milestones combined. ■

QUARTERLY

BY DAN DALEY

The term "alternative" has gone beyond buzz word, sort of the way that "digital" did. "Alternative music" is about the vaguest term in use in the industry today, used to describe anything that does not neatly fit into specific categories. When it comes to alternative music *distribution*, however, the common wisdom immediately conjures up the Internet.



ALTERNATE ALTERNATIVES FOR MUSIC DISTRIBUTION

Plenty of Possibilities Besides Major Labels and the Internet

But is that all there is? Hardly. In between conventional distribution and that virtual mall, there lie numerous possibilities for getting audio around and, in the process, making a few bucks. The key is for recording studios to get in on the action at the content stage. Recording studios have traditionally occupied just one step in the process from inspiration to retail, but studios can also participate in what is one of the most wide-open of free markets in history. And the key is content.

HONKY-TONK HERO TUNES IN TO QVC

Clark Enslin is a producer and personal studio owner living in Flemington, N.J. He used his studio, Starstruck (more on the name later), as a base for his career producing regional artists and bands. But the studio became a much more powerful tool when he bumped into former country music star and club owner Mickey Gilley about four years ago.

Enslin, who helped convince his friend Les Paul to come out of retirement a decade ago and start recording and playing live again, was in Nashville negotiating a production with Jerry Lee Lewis, who in turn told him about a trove of tapes that Gilley had collected. Apparently, Gilley had a 24-track recording studio attached to his epony-

mously named club in Pasadena, Texas, that in the '70s and early '80s was a locus of country music (much of it of the alternative type at the time) and inspired the *Esquire* magazine article that eventually became the film *Urban Cowboy*.

Gilley's career as an artist burned out in the late '80s. Gilley's, the club, burned down—literally—shortly thereafter, but not before Gilley was able to rescue some 15,000 songs recorded over a period of nearly 20 years in what was dubbed "the world's biggest honky-tonk" and was named the Academy of Country Music's Nightclub of the Year three times in the early 1980s. The collection of recordings included never-before-heard tracks from the likes of Carl Perkins, Hank Williams Jr., George Jones, Merle Haggard, Emmylou Harris, Ernest Tubb, Freddy Fender, Dottie West, Brenda Lee and Gilley himself, who was no slouch in the hits department.

When Enslin found out just how big the store of music was, he started what turned out to be a four-year pursuit of Gilley, attempting to get him to agree to make a deal to release the songs. That persistence paid off last year when they entered into an agreement to produce "Live At Gilley's" multisc, multivol-

ume sets.

Later, Enslin began to consider how to get the music out. He considered overtures from major record labels, all of which offered conventional deals via conventional distribution routes, and none of which, he felt, would ensure the integrity of the collection. Then he hit upon the cable-based home shopping network QVC, which had debuted its own record label, Q Records, based in Westchester, Pa., at around

the same time. This way, the music of Gilley's, which at one time was broadcast to 20 million listeners a week via a syndicated radio program in the 1970s, came before a potential 65 million viewers a day on QVC. (Atlantic Records is handling the conventional side of the deal, doing P&D and shipping a small amount to conventional retail outlets.)

Enslin's studio was the locus of all of this activity, and Enslin renamed it Gilley's East Recording in honor of the project. (One other note about the benefits of content ownership: Enslin's original trademarked studio name, Starstruck, was sold to Reba McEntire when the country singer opened her own corporate operation and recording complex in Nashville in 1996, which was named Starstruck Enterprises.)

"It got to a point in my career where I realized that there had to be a way to turn all of these tools into a way of making products," Enslin says, "not just someone else's records. There were a number of components to the process, including the tape restoration process and the Gilley's deal. But the bottom line is that the studio was a tool to access what is really a huge set of business opportunities out there in music. You can't just look at a studio as this static entity that just does one thing: record music." Enslin has a Les Paul &

—CONTINUED ON PAGE 84

Biograph: Jeff Greenberg

Revives Classic L.A. Facility

You want to know just how plugged-in Jeff Greenberg is? This descendant of an L.A. family with a long retail and banking tradition (his grandfather founded the Harris & Frank chain, as well as the First State Bank of Southern California; his father founded the 50-store Joel's chain) has been a concert promoter, personal manager, talent agent and the equivalent of a utility infielder for the music industry since he first started managing bands in 1966. Thirty years of networking and experience were graphically illustrated to me when, as we were cruising down Santa Monica Boulevard in his convertible Porsche Boxter, I heard a song I loved on the radio but didn't have a clue as to the artist. I complained to Greenberg about how radio's rock-block mentality no longer tells us who we're hearing. He grabbed one of two cell phones that seem to be anatomically attached to his body and punched in a preprogrammed number, which immediately connected him to the station's broadcast booth. Three seconds later he turned to me and said, "Rufus Wainwright."

Greenberg is usually a blur of motion. He seems to have a compulsion to accomplish as much as possible in as little time as possible. His long career in the music industry has included managing producer/bassist Felix Pappalardi (Cream, Mountain) and The Section (Craig Doerge, Russ Kunkel and Lee Sklar), and long stints with The Nederlander Organization as a concert promoter and with ICM, where he personally represented Aretha Franklin and The Kinks. Recording studios were, for many years, almost peripheral to Greenberg's career, mainly involving artists he managed or represented. However, as part of his near-obsessive desire to know as much as he could, he put in time learning engineering and doing sessions at L.A.'s Artist Recorders studio.

Looking back on his pre-studio period, Greenberg is proud of bringing L.A.'s classic venue, the Greek Theatre, back from the brink. Now, he is CEO of another L.A. classic, The Village Recorder (now known simply as The Village), a multiroom facility founded in 1968 by Gordie Hormel, a meat packing heir who turned himself into a film and television composer. Hormel had taken over a Masonic Temple built in 1922 and turned it into a home of hits from the likes of The Eagles, Phil Collins, Bob Dylan, Sly & the Family Stone, Supertramp, the Rolling Stones, Tom Petty and Fleetwood Mac.

But by 1994, The Village Recorder had fallen prey to a down-swing in L.A., burdened by a general slump in the city's music business. It was to the point where Hormel considered selling it. First, however, Hormel and his

daughter Julie decided to let Greenberg take a shot at it. Greenberg brought in engineer Al Schmitt, with whom he has had a long friendship, as a consultant and began the arduous task of turning around one of the city's biggest studios. "Al validated to me that we had a chance," recalls Greenberg. "The bones were there but not much else."

The first order of business was the hardest: Greenberg had to let most of the staff go, a move he found personally unpleasant but which he felt was critical to remaking the studio. "You have to re-create a new culture, and for that you need people who subscribe to that idea," he explains. Getting clients back into The Village was a matter of renovating the facility inside and out, including a revamp of its acoustics by Waterland Design's Vincent Van Haaff and a critical analysis of every bit of technology, right down to the wires. He added an aggressive, ongoing maintenance program, then began letting the industry know about the overhaul via press releases and word of mouth (that one-of-a-kind Greenberg network). He also toughened up the studio's marketing effort and extended it to the film and television sound markets with

significant success, while adding details like valet parking.

"We basically cleaned it up and then applied Business 101 to the studio," says Greenberg. "That's where I think all that heritage in retail comes in, as does a lot of years working with artists as a manager, promoter and an agent. Retail taught me how to take care of customers and what service really means. Once you know what sorts of things your particular type of customers want, then you give to them at a level that they have never experienced before." He also turned some of The Village's uniqueness in its favor. "A 30,000-square-foot Masonic temple? That's a priceless marketing tool," he exclaims. "Who else has one of those?"

The revamp has been a resounding success, with records in recent years by Smashing Pumpkins, Cracker, Sneaker Pimps, Tori Amos, Tom Petty and the Brian Setzer Orchestra. Two of the rooms have been converted to 5.1. A dedicated 5.1 room is in the planning stage, as are other expansions. And for Greenberg, the key to pulling off The Village's renaissance was understanding what service is. "One thing you learn when you're promoting concerts is that you're building a city that holds 300,000 people at a time, and every one of them needs all sorts of service, from soft drinks to an ambulance standing by," he says. "There is simply no room for failure in a situation where that many people come to hear an artist just once. Same thing with a studio. Think of all the times that that one great vocal takes place. You need to provide a flawless environment in which that can take place. That's what you need to know



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about managing a studio."

Greenberg plans to continue expanding The Village's services and capabilities. In what little free time he seems to carve out for himself, he works in martial arts, practices yoga and is very active in promoting the work of the Musician's Assistance

Program in Los Angeles—including running its annual Musician's Picnic fundraiser concert—which helps musicians with recovery from substance abuse. The parallel between that and helping bring The Village back from the edge is not lost on him. As he puts it, "It's all a matter of being there for people." ■

—FROM PAGE 81, ALTERNATE ALTERNATIVES

Mary Ford tribute record in the works, which will also be distributed via QVC and Q Records.

PUTUMAYO

Dan Storper is not a studio owner, but he's had a hand in music and alternative distribution for nearly three decades. Storper founded Putumayo, a trendy Manhattan fashion and handicraft boutique named for a river in the Amazon basin, in 1975. Catering to an upscale and environmentally aware audience, the store's designs were dubbed "ethnic Ralph Lauren." The chain grew, and Storper's affinity for international ethnic products extended to music, so he replaced the Muzak-like in-store recordings with tapes he made of upbeat, melodic world and contemporary folk music.

Customers then began asking for copies of the tapes. Storper approached friend and Rhino Records head Richard Foss (both of their companies were members of the Social Venture Network, which also includes the environmentally conscious founders of such companies as Ben & Jerry's and The Body Shop) and collaborated to create and market a series of compilations with titles including *Best of World Music: Vocal* and *Best of World Music: African*. After the collaboration ended, Putumayo released titles including *Cairo to Casablanca* and *Mali*

to Memphis.

"The key to success in nontraditional music distribution is creating an identity and making it sound good," says Storper, adding that remastering is critical to ensuring that such diverse compilations are sonically consistent from start to finish. He has used The Hit Factory's mastering department several times in the past, as well as The Lodge in New York City, under the direction of his director of music, Daren Gill. Storper is also now heading into original recordings, having taken several world music artists into the studio for new productions. Putumayo just signed its fourth artist, Oliver Mtukudzi of Zimbabwe, who has caught the attention of Bonnie Raitt to the point that she was inspired to write a song and will contribute an introduction to the liner notes. All four artists (the other three being Ricardo Lemvo, Sam Mangwana and Habib Koite) will be out touring North America this summer.

The music has also taken on a business life of its own: Storper sold the clothing business and now runs Putumayo World Music, which has released recordings by such superstars as South Africa's Johnny Clegg (a collection), Bob Marley (an unreleased track featured on the international collection *One World*), as well as new artists, and has presented concerts and other special events. The company maintains its raised-consciousness approach: \$1 from each sale of the *One*

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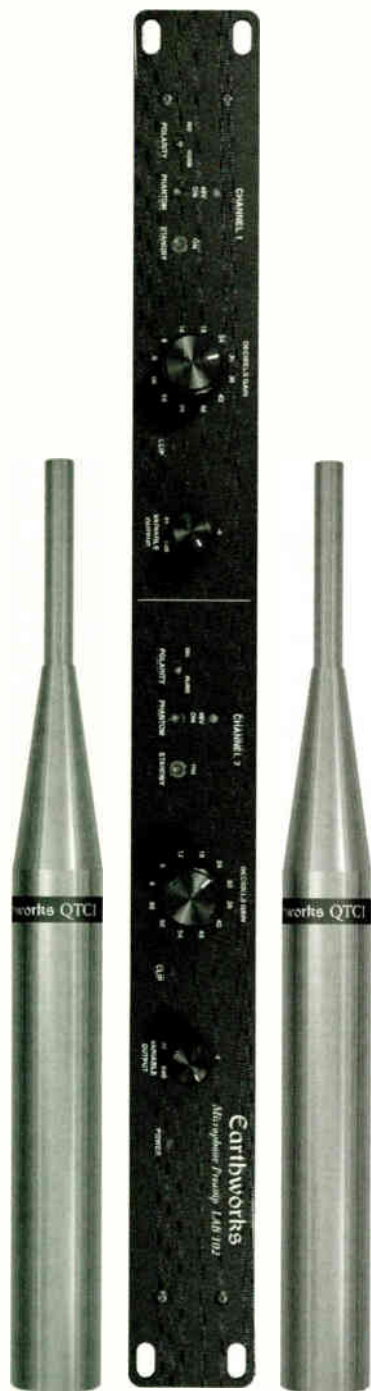
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From the beginning, Putumayo has pursued creative distribution. The original deal with Rhino called for that label to handle traditional distribution, while Putumayo would deal with "alternative" outlets, meaning specialty shops, cafes, The Nature Company and the like, especially in environments that cry out for world music backgrounds. Today, those outlets number about 3,000. Michael Kraus, co-founder and senior VP, was given the moniker head of alternative market sales, and early on, the alternative outperformed the traditional. Today, Putumayo has

taken over the traditional record store channels, and the balance has evened out to about 50-50. The philosophy, however, has consistently been to get the records to the "disenfranchised audience," as Storper calls them, of potential world music fans.

The premise is basic and universal: "There are a lot of artists out there who have good music and who were enterprising and charming enough to go into local stores that have some affinity for what they do and get those stores to sell the recordings," Storper explains. "The thing is it's a match of music that's not otherwise available to the public and a distribution system that's unconventional and where those new artists aren't competing for space against major record labels. There are distribution

STAT OF THE MONTH RIAA 1998 SALES FIGURES

Not that everyone felt it, but the Recording Industry Association of America says sales of prerecorded music were up in 1998, with record sales posting the healthiest gains in four years. The dollar volume came in just shy of the \$14 billion mark. At the end of 1998, manufacturers saw a 5.7% net unit increase in audio and video product shipped to domestic markets (from 1.06 billion units in 1997 to 1.12 billion in 1998); the corresponding dollar value of those shipments (at suggested list price) reached \$13.7 billion.

The RIAA cited several factors explaining the growth, including the continued diversity of recordings, hit product releases spread throughout the year, a hot fourth quarter, and increased consumer demand for full-length CDs and music videos. CD unit shipments grew 12.5% from 753.1 million in '97 to 847 million in '98, and CD dollar value grew 15.1%, from \$9.9 billion in '97 to \$11.4 billion in '98. Even though cassette unit shipments dropped 8.2%, from 172.6 million in '97 to 158.5 million in '98, and their dollar value dropped 6.8% (from \$1.5 billion in '97 to \$1.4 billion in '98), cassettes apparently remain a viable format, with full-length tapes constituting 16% of all album unit shipments. Also, for the first time, the RIAA is reporting sales of DVD music videos. Unit shipments of DVD music videos in '98 to-

taled 485,000; the dollar value of those DVD unit shipments in '98 was \$12.2 million.

The biggest success story of the year was undoubtedly the growth in rap and hip hop. Lauryn Hill, Beastie Boys, Jay-Z and DMX delivered blockbuster releases. Also, numerous female artists reached Platinum or multi-Platinum levels, including Celine Dion, Shania Twain, Jewel, Sarah McLachlan, Sheryl Crow, Mariah Carey, Brandy and Alanis Morissette. Box sets by Bruce Springsteen, Garth Brooks and others proved to be immensely successful, and movie soundtrack hits such as *City of Angels*, *The Wedding Singer*, *Armageddon* and *Hope Floats* joined the wave of popularity begun by *Titanic* early in the year. And finally, the purchasing clout of younger music buyers buoyed such artists as Backstreet Boys, Hanson, 'N Sync, Monica and the Spice Girls.

SCORECARD FOR 1998


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problems with such a system. But the market is potentially enormous."

Packaging has also proved important in creating an identity. Storper has been a longtime backer of the Digi-Pak, despite the fact that it costs more, and the vibrant, collage-like covers of the compilations are in a recognizable style, all from a single illustrator now working out of Spain. And Storper has been putting out a monthly "fourth-Sunday" Putumayo Radio Hour with KFOG in San Francisco to promote world music. This summer, the show goes national for 15 episodes on more than 40 commercial and noncommercial stations.

VICTORIA'S SECRET IS OUT

When Storper was in the early stages of his music business, he got some useful advice from Paul Whitehead, whom he met in a taxi in Paris some years back. Whitehead owns The Iliad, a recording studio in Nashville that has served mainly one purpose since 1988: creating music for retail and commercial enterprises. Whitehead has put together specialized album projects for a wide range of commercial clients, including Hallmark Greetings, American Express and

Celestial Seasonings, but he is perhaps best known for his first project along those lines—the Victoria's Secret line of romantic CDs.

The Iliad has grown from a 4-track operation in 1971 to a 48-track digital Harrison Studer-equipped facility designed by Tom Hidley in a landmarked brick building on Nashville's Second Avenue North. Whitehead is proud of the fact that all of the studio's upgrades have been financed by music that is sold via alternative distribution. He invested \$100,000 of his own money in that first project, a recording of classical pieces done with the London Symphony Orchestra, as a calling card to the lingerie marketer. But since then he has developed concepts and sold them before beginning production. "Nothing is done on a speculative basis," he says, adding the refrain that all who have taken the alternative road have embraced as a critical mantra: "Why would I want to be in a store competing with 10,000 other titles when I can be the only guy in 10,000 stores? The thing is that we look at the studio business differently. The equipment wears out over time; only the content has lasting value." ■

STUDIO SIDE VENTURES FACILITY OWNERS LOOK BEYOND AUDIO

Recording studios have a long tradition of opening new audio-related ventures such as record labels, music publishing companies and, in recent years, Internet-based businesses. Then there are the staple ancillary ventures, such as tape duplication (and more recently CD-R replication) and equipment rentals. And a few studios over the decades have been associated with equipment manufacturing ventures. To describe this phenomenon, David Porter of Music Annex, working with SPARS, came up with the slogan "Diversify or Die."

However, some facility owners have branched out into other segments of the business world, acknowledging the unpredictability of the audio industry in general, and spicing up their own lives in the process.

STOCK IN TRADE

Josef Nuyens, president of The Castle Studios in Nashville, has always been realistic about the profitability in owning a

—CONTINUED ON PAGE 91

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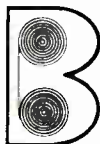
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HOTELS WITH STUDIOS

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The Sunset Marquee, a show-biz legend from the days of rock 'n' roll excess in the 1970s and '80s, has a full-sized recording studio on its parking lot level, fitted with a Euphonix CS3000 console, Tannoy DMT soffited main monitors and Sony PCM 800 MIDMs, though most clients rent other media for sessions. The studio was built in the early '90s by Jed Leiber, son of half the legendary songwriting team of Leiber & Stoller. A composer himself, Leiber stumbled onto the space, which had lain empty since the Synclavier Co. built it out a decade earlier as a showroom for its keyboard products.

"The thinking was that high-end musicians tend to stay here, so Synclavier figured it could sell them a few keyboards if they were in the hotel, too," says Tom Fritze, the studio's chief engineer and a former staffer at The Hit Factory in New York. Fritze stayed at the Sunset

Marquee while working with Keith Richards on the Rolling Stones' *Bridges To Babylon* record and never came back. "Jed was a New Yorker, too, and he started using it as a key-board room when he came to L.A. to work on film scores," Fritze adds. "It just kept growing."

The original design was done in part by George Augspurger. Instead of square feet, the facility measures itself in terms of parking spaces—it takes up eight at the moment, and Fritze says an expansion is planned that might take another seven. Studio manager Annie Belanger can put together package deals that include studio time (which runs between \$1,500 and



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\$2,000 per day) and accommodations. And all the hotel's amenities, from the pool and Jacuzzi to room service, are available to studio clients. Fritze says most of the studio's work comes from clients (which include recent guests Aerosmith and Santana) who seek the studio first and the hotel second, though it occasionally works the other way, "when they stay here and then stumble on to the studio," he says. (People seem to stumble a lot at the Sunset Marquee. Lord knows I have.)

The Marlin Hotel opened in November 1991 in Miami's once-crumbling Art Deco South Beach area, part of a renaissance fueled in large part by hotel investments made by music business entrepreneur-turned-hotellier and Island Records founder Chris Blackwell. Three months later, South Beach Studios opened on the hotel's ground floor. Now equipped with a 64-input SSL G Plus and Studer analog and Mitsubishi digital multitracks, South Beach Studios also puts together recording (\$1,500 to \$2,200 per day) and accommodations packages. Guests/clients can stay in the highly stylized rooms upstairs at the Marlin or at any of Blackwell's other South Beach properties, including The Tides (ocean-front rooms, each with a telescope), The Kent, The Leslie, The Cavalier and the Governor.

Having that many hotel rooms is useful because those who seek out South Beach tend to stay for the season, says Joe Galdo, the cigar-chomping, golf-addicted studio president and A&R man for another of Blackwell's companies, Palm Pictures. Mixer Tom Lord-Alge came down a few seasons ago (in South Beach, time is measured in seasons, not years) and never left; his eye-popping Dodge Prowler or Viper is almost constantly parked in front of the hotel. (And when you see what parking's like in South Beach on a Saturday night in January, you realize that it's good to be the king.) Aerosmith and producer Glen Ballard stayed at the Marlin in 1997, writing most of *Nine Lives*, with tielines down to the studio to flesh out parts that were later finalized at Criteria Recording in Miami Beach. That worked so well that Galdo commissioned designer Ross Alexander to turn room 305 into a mini-studio, complete with ISDN capability, vocal booth and Mackie console. Soundproof? They did their best, but you don't go to South Beach for a rest. As they say on Ocean Avenue, with a nod to Warren Zevon, "You can sleep when you're dead." ■

—FROM PAGE 88, STUDIO SIDE VENTURES

studio. He likes to keep himself pretty diversified as a hedge against adversity. In addition to the suburban Nashville studio, which he has operated for 17 years, and an Internet-based music sales company, Nuyens and his father, Joseph, have also run a private, European-based mutual fund management company for the past ten years, as well as a real estate venture company in the Nashville area. With a five-year average return of 23% from the stock fund, Nuyens likes the sense of security that non-studio businesses provide, as well as the balance they give his business

and personal life.

"[The stock] business is the exact opposite of the entertainment business, but that's part of what makes them all work together so well," he says. "On one hand, dealing in mutual funds has made our level of accountability to studio clients go up, I think—we tend to treat them with the same level of respect on a business level that we do our portfolio clients. On the other hand, being in show business gives us a kind of looseness that translates to our other businesses. We don't come off as stiff as some other shirt-and-tie types might."

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to think about other than the day-to-day tussle of the recording studio business. "Mostly, though, you get a sense of balance to things, and what you learn doing one business gives you some insights into how to deal with the others," he says. "And I like knowing that my own business interests are diversified," he adds. "Makes you sleep better at night." Next up for Nuyens Properties, the holding company for all ventures except the mutual fund? A pawn shop business.

CLOTHES MAKE THE STUDIO

Barry Lopate likes music and clothes.

For close to 20 years he worked parallel careers running an artist management company and a custom clothing boutique in the New York Metropolitan area. He learned about the studio business working with bands and realized, as have others, that owning his own studio could be more cost-effective than renting them. In 1996 he took over a 15,000-square-foot Livingston, N.J., warehouse, which he converted first into a rehearsal space for his lead act, the band Dresden, but which quickly evolved into a two-room recording studio named Troposphere. The facility has an SSL and a pair of Yamaha 02R digital

consoles, and it caters not only to his own acts but to other area recording artists and producers.

Meanwhile, the clothing business, Chester Hill Clothiers, chugged along; Lopate was designing custom clothing for a range of artists and businessmen, including the clothing for 1996 presidential candidate Steven Forbes, whose manager wanted Lopate's clothing designs to downplay Forbes' wealthy background and instead portray the candidate as "someone who dressed himself at Macy's," says Lopate. But the twin career paths were wearing thin. "I was opening the clothing shop at 9 a.m. and closing it at 6, then running to the studio and staying there until 2 a.m.," he recalls. "I was fried."

Then it occurred to him that the disparity between the two businesses was not all that great. They were, he realized, downright similar. "Both clothing design and music are about making things that are highly personal by which you express yourself," he explains. Lopate closed the shop and moved the clothing design business into the recording studio. Customers of both sorts mingle in the huge media-equipped lobby, and it's increasingly common for one client to come for both clothing and music services. "More of my business now comes from the entertainment industry," he admits.

And don't think that the clothing side is any less high-tech than the studio: Lopate's designs are rendered on a computer program; design files are then sent by modem to a contractor in Paris who laser-cuts the material and hand-sews the garments, which are shipped back to Lopate within two weeks. "Both music and clothes are each powerful instruments," he says. "Why not combine them?" And of course, both businesses involve scrutinizing labels.

UP, UP AND AWAY

Lou Pearlman always wanted to be in the music business. As a teenager growing up in Flushing, Queens, N.Y., his band played the Long Island club circuit and occasionally got to open for major headline acts. The budding lead guitarist was also motivated by the success that his cousin and another Queens homeboy, Art Garfunkel, had been having with a writer/musician named Paul Simon.

But like most of those who pursue such dreams, Pearlman concluded after a few years that rock stardom would elude him. He reluctantly gave up the dream, went to college, got an account-

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Producer / Songwriter / Programmer

Credits include:

Co-Producer/Programmer,
Stevie Wonder's Grammy Award-winning single "For Your Love",
Elton John

Motion picture and television credits include:

VIP, Walker, Texas Ranger, Pinocchio,
Get On The Bus, Jerky Boys



ing degree and pursued a law career before turning to another passion—aviation—by starting an air charter service. In the 1970s Pearlman saw some opportunities in charter aviation niches, such as the need by banks to get deposits from Long Island into Manhattan banks before a certain hour in the morning to gain a full day's interest on the money.

That ability to find small markets and serve them turned into what is essentially a private airline, Transcontinental Air, which now has more than 60 aircraft, from helicopters to a DC-10 to advertising blimps. During rock 'n' roll's heady days in the '70s and '80s, Transconti-

mental wound up transporting many of the major groups of the period. And it was one of those charters that gave Pearlman success beyond his wildest teenage dreams, not to mention an awfully nice recording studio.

"We were flying this group called New Kids on the Block," Pearlman recalls. "I had never heard of them, but someone from their organization told me how many records they had sold. And I said to myself, 'I can do *that*.'" He proceeded to construct his own group of "kids," assembling, between 1992 and 1994, the Backstreet Boys, whose members were culled from scores of audi-



Transcontinental Studios

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tions in the Orlando, Fla., area, where Pearlman had set up Transcontinental Records. Launched in European markets on Jive Records in 1994, the adolescent heartthrobs have amassed 21 million in unit sales globally on just two albums, only one of which has been released in the U.S.—it's sold 4 million units here and spawned the single "Everybody (Backstreet's Back)," which as of this writing remains on *Billboard's* Top 10 singles chart. Later, he did the same with 'N Sync, another group of teen idols who have found similar success.

It wasn't long before Pearlman realized that he could save considerable money and keep better control of the organization—which now has 11 acts in release or under development—by building his own studio complex. Transcontinental Studios opened officially in June of last year as a three-studio facility, featuring an 80-input SSL 9000J console with the first factory-installed 8-channel monitor matrix.

Pearlman says the synergy between the businesses is substantial. "We're flying people in the entertainment industry, so we leave studio brochures on the planes," he says. Transcontinental Studios also makes compilation tapes of its current and developing artists for in-flight listening, and Pearlman uses passenger comments as market research. "It's a captive audience—where they gonna go?" he laughs. But as with others who follow multiple career tracks, Pearlman also likes the diversity it adds to his personal life. "It really does help balance your life out," he says. "Every day is a different adventure." ■

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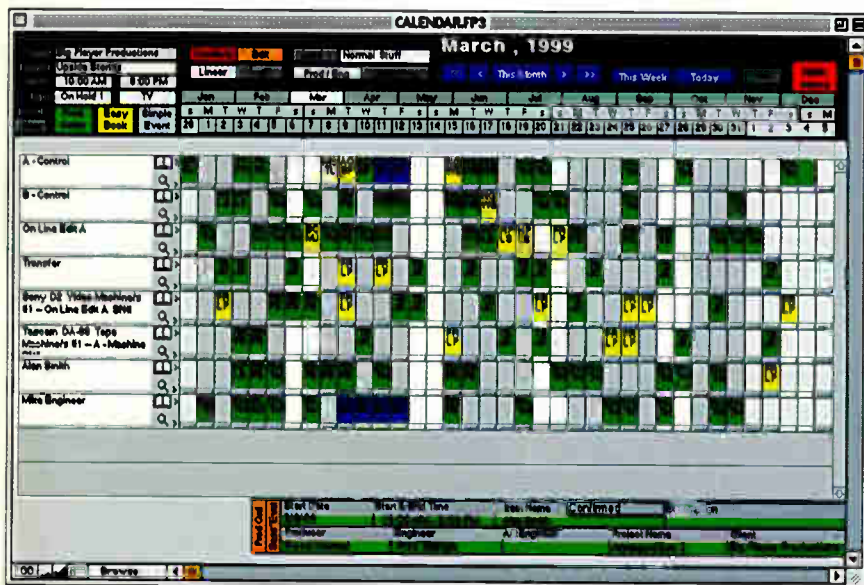
ALTERMEDIA STUDIO SUITE 4.0

STUDIO MANAGEMENT SOFTWARE

By nature, "musicians" and "organization" do not go hand in hand. But once a musician branches out and becomes either a producer or studio owner, organization becomes necessary. I admit that as both a producer and studio owner, I would much rather spend my time in production than sitting in front of a computer typing in client addresses, labeling tapes, printing invoices and bar codes, or searching through a filing cabinet looking for track sheets. That's why it helps to invest in a product such as AlterMedia's Studio Suite—the all-in-one, organize-your-recording/mastering/project/video post-production studios-and-production



The Main Menu connects the user to every aspect of the program.



The Calendar function allows thorough tracking of when people and resources are available.

into one package.

Opening up to the Main Menu, I was greeted by a very friendly looking interface—a module-type menu with 20 buttons that, with a simple click, takes you wherever you need to go. Most sections of Studio Suite are interconnected, meaning they are related to and interact with each other. Information entered in one section allows you to gather and use that information in another section. For example, when you open up a client's record you can see all previous invoices, all media, every song that was worked on, and even the rates charged each time. It makes it easy to keep close track of every aspect of every project. Plus, Studio Suite's five levels of security access let you define passwords to determine who gets access to what information.

companies-so-you-can-work software. Studio Suite's 20 relational modules help organize, manage and simplify the complex environment of large or small facilities at a home studio price.

Studio Suite is a relatively easy-to-use production management system that operates through FileMaker Pro on a Mac or PC, allowing cross-platform networking. It allows the user to keep detailed

records of such things as contacts, scheduling, media inventory, bar codes, sessions, equipment, recording budgets and various other data that would otherwise be recorded on Post-It notes and scattered about the studio until they got accidentally thrown away. Studio Suite removes the fear of organizing by neatly putting everything

BY ROB WARREN

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And that every Engineer has his or her own style of creating. It is this belief that is the foundation for the Amek DMS Digital Mixing System.

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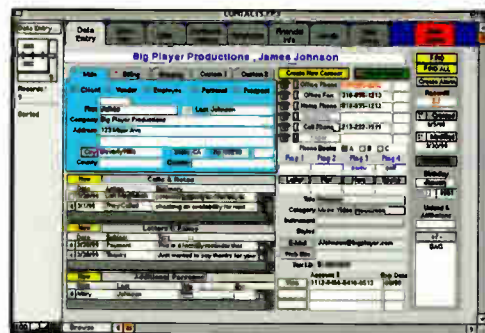
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The Contacts window.

changed in the office, the engineer can see it in the control room. Or if the engineer logs an equipment problem, it will show up in the maintenance room. All of our engineers have access to the program and can use the data interactively.

Delving further, I realized that Studio Suite was designed by someone who has spent a lot of time in the music business and had a lot to keep track of—everything is there, from recording budgets to equipment maintenance logs, each with various subheadings that allow you to track the minutiae of each category. For example, under the Recording Budgets menu, there are sub-menus such as Pre-Production, which compares budget costs to actual costs. The next sub-menu, Recording, allows you to break down the number of days of tracking required, cost per day, media costs, rentals, total cost, etc. Then there is a sub-menu for keeping track of hired talent costs, travel expenses, living expenses, producer fees (my favorite page), mastering costs, etc. Studio Suite keeps running totals, calculates and prints Summary reports and even configures taxes where applicable. Each page in Studio Suite has a simple Main Menu button that returns you to

still celebrating

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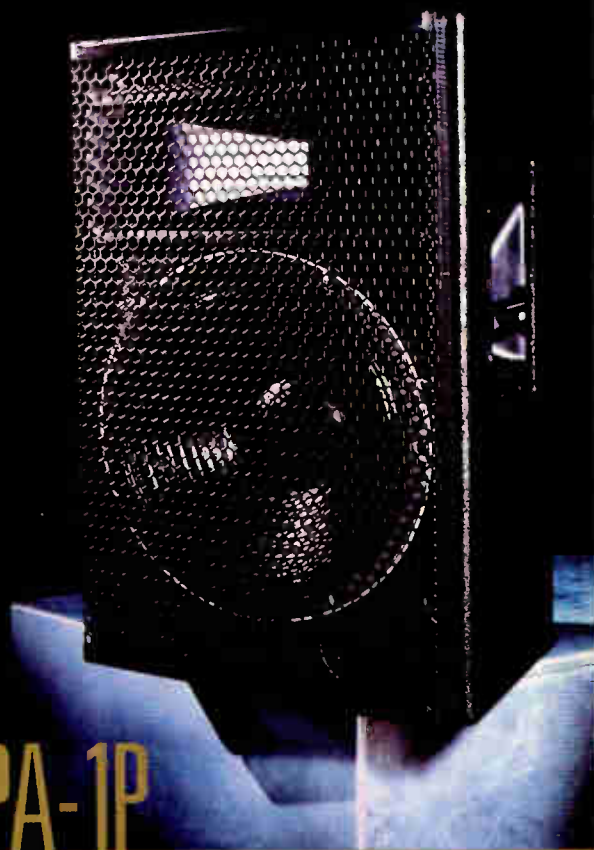
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*John Meyer holds numerous patents including a low distortion driver/horn combination which is utilized in the UM-1P, and one for the perfectly aligned phase response through crossover (zero-pole crossover) utilized in both the UPA-P and UM-P.

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FIELD TEST

where you started, as well as a Print button that captures and prints the current page.

Something I found very useful was the Sample Management page. I do a lot of sampling and rely on my very unreliable memory to find and use my samples. The sample manager lets you keep track of all your samples: what type of samples they are; where they were taken from; where they are stored; plus contact information for the original artist, publishing companies, record label, etc. Another very cool feature throughout Studio Suite is that when you have to select media types (DVD, Zip, CD-ROM, etc.) and even brand data (Roland, Akai), most choices are offered via pop-up menus, which often means you don't have to highlight the dialog box and type in the data. When you're entering a lot of data, this feature really saves a lot of time and helps prevent unnecessary repeat typing or entering data into the wrong box type. These are minor features, but in my opinion, it's the little things that separate good computer programs from great ones, and can prevent people like me from grabbing my monitor and throwing a 30-yard spiral through the window and onto the concrete outside.

Studio Suite has many more functions than those I've listed here; these are simply the ones that I found an immediate need to use. There is a sophisticated invoicing system, stock and inventory trackers, and a recall module that has drawings of 130 of the most common pieces of outboard gear where settings can be documented on screen. There's even an alarm feature that can be used to remind you of calendar events or notify you when your media stock gets below a certain level. And at a low price of \$389 for a two-seat user license, this application proves to be not only an amazing value, but practically a necessity for any production facility.

AlterMedia, 6300 Powers Ferry Rd., Suite 600-200 Atlanta, GA 30339; 800/450-5740; fax 770/303-0967; www.studiosuite.com. ■

Rob Warren is a musician/producer from Northern California. He has produced audio for the past six versions of the CD-ROM game "You Don't Know Jack," the recently released "Austin Powers: Operation Trivia," and numerous CDs and multimedia projects.



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Eric Persing - Sound Designer, Spectrasonics

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Dinky Bingham - Programmer, Producer

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PREVIEW

ARGOSY STUDIO FURNITURE FOR MACKIE D8B

Argosy Console Inc. (Osage Beach, MO) intros the 90 Series console enclosure for the Mackie Digital 8-Bus. Features include a



padded armrest, multi-access lids above the meter bridge, heavy-gauge steel legs and optional finishes. The 90 Series' expandability feature allows users to add more rack gear, computers or even another D8B. The base unit has room for a 19-inch rack unit, the Mackie D8B, and another 19-inch rack unit or a computer monitor. An expander unit is optional. Price as pictured is \$1,699.

Circle 327 on Product Info Card

P.A.L. SAMPLE RATE DETECTOR

Precision Audio Labs (West Hills, CA) debuts the SRD-1 Sample Rate Detector, a versatile tool that verifies sample rate as it relates to word

clock and slave clock. Designed for use with digital audio workstations, the SRD-1 features a maximum input frequency of 52 MHz and will read all sample rates and both word

clock and slave clock. The SRD-1 shows the sample rate in kHz via a 2x16-character LCD, regardless of what the input is, automatically dividing the slave clock rate by 256 to provide a reading in

kHz. Measuring only 5x2.5x1.5 inches, the SRD-1 is powered by an AC adapter; termination options include 50 ohms, 75 ohms and 50k ohms. Retail: \$149.95.

Circle 328 on Product Info Card

TC ELECTRONIC FINALIZER UPGRADES

Owners of original Finalizer and Finalizer Plus Studio Mastering Processors from TC Electronic (Westlake Village, CA) can upgrade their

units to match the new Finalizer 96K. The upgrade includes a replacement motherboard, I/O connectors, power supply and a one-year parts/labor warranty extension. Upgrade features include 24-bit 96kHz A/D and D/A converters,

support for 44.1/48/88.2/96kHz sampling and real-time sample rate conversion from 32/44.1/

48kHz rates. Also included are Word Clock (BNC) input, ADAT I/O, two dynamic insert points, a new three-band stereo width control, enhanced 120dB dynamic range and several dithering choices: uncorrelated stereo dithering, mono dithering and inverse dither-

ing. Upgrading an original Finalizer costs \$995; a Finalizer Plus upgrade is \$495. (A new Finalizer 96K is \$2,995.)

Circle 329 on Product Info Card

MARTINSOUND SURROUND SOUND MATRIX

Martinsound's (Alhambra, CA) ForMAX surround sound monitoring formatter eases the task of switching among multiple monitor mix formats. Essentially a 48x8 reassignment matrix, the For-

MAX accepts existing mix-to-recorder assignments and re-formats them to various multichannel monitoring standards. Providing 24 mix bus inputs and 24 recorder return inputs, the ForMAX offers individual Direct/Playback selection for each input. Up to five ForMAX units may be controlled via a single Martinsound Multi-MAX for a total of 120 Direct/Playback inputs. An LCD shows all formatting assignments and provides access to setup menus. Price: \$3,500.

Circle 330 on Product Info Card

RANE 2X16 DISTRIBUTION AMPLIFIER

Rane Corporation (Mukilteo, WA) offers the DA 216a distribution amplifier, a single-rackspace unit for assigning two inputs to 16 outputs in any configuration, including summing A and B inputs to any output. Front panel switches control output as-



signments and separate trims on each output. LEDs indicate power on and input overload conditions. I/Os are balanced and may be line or mic level. Price: \$499.

Circle 331 on Product Info Card

ADA DTS DECODER

Audio Design Associates Inc. (ADA) has introduced the DTS-Pro Professional DTS Decoder, which allows mixers and artists to monitor playback of DTS-encoded recordings in real time. Fea-

PREVIEW

turing 24-bit digital-to-analog converters and a 24-bit DSP, the rackmountable DTS-Pro provides AES/EBU, S/PDIF and Toslink inputs, and balanced analog outputs for the six DTS outputs (DTS is a 5.1 monitoring format—Left, Center, Right, Left/Right Surround, Low-Frequency Effects). The six outputs are also available on three AES/EBU balanced outputs, and there are six individual output level trim controls on the unit's front panel. Addi-

and the AZX+ azimuth corrector (\$5,695), are based on 40-bit floating point DSP hardware with true 24-bit AES/EBU and S/PDIF I/O. Designed to eliminate power supply hum and camera noise, the BRX+ debuzzer is also suitable for use in forensic audio. For improving the listenability of surveillance tapes. The AZX+ azimuth corrector offers auto-correction to within 0.25 samples, and a manual mode allows the user to slide channels

puts, 4-band channel EQ plus highpass filter, eight aux sends and 100mm Alps faders. The in-line monitoring section offers high/low shelving EQ, and auxes 3-8 can be shared between channels and monitors. Additional features include optional VCA automation, an integral meter bridge, four dedicated effects return channels, comprehensive mute and AFL facilities, talkback facilities and on-board

flection-free listening space.

Circle 335 on Product Info Card



tional features include a PCM Lock indicator and a DTS Decode LED. Price: \$1,399.

Circle 332 on Product Info Card

CEDAR AUDIO RESTORATION MODULES

Cedar Audio (distributed by Independent Audio, Portland, ME) has introduced two new models in the Series X+ range of affordable audio restoration modules. The two rackmount units, the BRX+ debuzzer (\$6,555)

against each other with 0.01 sample precision.

Circle 333 on Product Info Card

MTA 24-BUS SMALL FORMAT CONSOLE

MTA America (Albion, NY) has introduced the Series 924 24-bus small format analog recording console. An in-line design, the 924 Series is available in 24-, 32- and 40-input frame sizes (the latter handles 84 inputs on mixdown). Features include balanced mic/line in-

oscillator. I/Os are XLR and TRS. Prices range from \$13,999 to \$19,799.

Circle 334 on Product Info Card

ACOUSTICAL INTERIORS ACOUST-A-KIT

Acoustical Interiors, a division of Systems Development Group (Frederick, MD), offers the Acoust-a-Kit, a preselected combination of absorption and diffusion treatments designed to simplify the purchase of a complete

acoustic treatment package. Acoustical Interiors also offers the Model F diffuser designed to eliminate flutter echoes, and the Bass Eraser, a corner low-frequency absorber. A third new product, the Reflektor, is a side wall-mounted device that redirects reflections to evolve a rectangular room into a re-



WHIRLWIND ACTIVE PRESS POOL

Whirlwind (Rochester, NY) has introduced the PRESSPOWER 2 active press pool. The rackmountable unit features two mic/line inputs and 16 outputs, with switched phantom power and a lowcut filter on each output. Individual outputs are selectable to mic or line level, and a tone oscillator and 20-segment LED meter speed accurate setup. The unit will run on any of three power sources (120 220 VAC 50/60 Hz, internal 9V batteries or 12-36 VDC) and automatically switches to battery backup in case of AC power interruption. Additional features include transformer-coupled outputs and integral headphone monitor; active 16 mic/line expander modules are optional. Price is \$1,999, including a padded carrying case.

Circle 336 on Product Info Card



PREVIEW

SHURE LAVALIER MICS

The new WL61 Series lavalier microphones from Shure Brothers (Evanston,

IL) can be mounted in the hairline for theatrical applications or positioned on the

chest in traditional lavalier style. Designed by Danish microphone manufacturer DPA, the WL61 subminiature omnidirectional mic (only ¼ inch in diameter and just over ½ inch long) is available in black or tan. Frequency response is 20-20k Hz, and two interchangeable grilles, easily removed for cleaning, add either a 3dB boost between 8 and 20 kHz (head placement) or a 10dB boost at 12 kHz (chest placement). The WL61 is supplied with a 6-foot cable terminating in a Switchcraft TA4F or LEMO connector. Prices range from \$562 to \$670, depending on color and connector.

Circle 337 on Product Info Card

INNOVASON SENSORY II

French company InnovaSON now offers its digital consoles in the U.S. through Precision Systems Integrated (Tullytown, PA). Designed for broadcasting, theater and live FOH and monitor duties, InnovaSON's Sensory II is a 24-bus console featuring 48 analog inputs and 48 digital channels—all with dynamics and 5-band fully parametric EQ, 20 aux

buses (pre/post switchable) and instant reset with moving faders and snapshot storage of all mix parameters and matrix routings. A simple co-ax cable connects Sensory to its stage box, which doubles as a digital splitter, and the console can be configured with any combination of analog and digital input sources.

Circle 338 on Product Info Card

A-T STEREO BOUNDARY MIC

Audio-Technica (Stow, OH) has introduced the AT849 Stereo Condenser Boundary Microphone, an X/Y surface-mount stereo mic that features two wide-range,



optimally positioned Uni-Point® elements. Designed to provide a natural stereo ambience in a wide array of applications, the AT849 is also mono-compatible, offers a frequency response

from 30 Hz to 20 kHz and can accept a 137 dB SPL maximum input. A built-in switch selects either a flat response or low-frequency roll-off. Additional features include a low-reflective, matte-black, die-cast case and a nonslip rubber bottom pad that minimizes transmission of mechanical vibrations. The AT849 is supplied with a 25-foot shielded cable with one TA5F input connector and two XLR outputs. Price: \$450.

Circle 339 on Product Info Card

HOT OFF THE SHELF

Apogee Electronics' AD-8000 Special Edition A/D converter features specially selected/matched components and costs an additional \$2,000. Existing AD-8000 units can be upgraded. Also offered is the AMBus SDIF-II card and wiring harness to provide 24-bit resolution for DASH-format digital multi-track recorders or as an SSL HiWay interface for SSL digital consoles. Call 310/391-6262 or visit www.apogeedigital.com. ...Aardvark's Aark DIRECT PCI host card and breakout snake offers two mic/line inputs, four outputs, S/PDIF, MIDI and real-time DSP effects, all for \$425. Also, the Aark TDIF card has been reduced from \$599 to \$425. Call 313/665-8899 or visit www.aardvark_pro.com. ...White Instruments' 4856SX dual-channel ½-octave analog

equalizer features gain controls on the outputs, instead of the inputs. White will convert a standard 4856 to include gain controls on the outputs for a flat fee. Call 512/389-3800. ...Valentino Inc. Evergreen Production Music Library is a 113-CD collection of themes, cues, bridges, opening titles, closings, stings, backgrounds, moods and music styles in more than 43 categories. Call 914/347-7878 or visit www.tvmusic.com. ...The Molex 990 full line product catalog is the company's largest to date. The 1,598-page catalog contains details of more than 100,000 Molex products and is available in electronic form at the Molex Web site. Call 630/969-4550 or visit www.molex.com. ...*The LP Is Back!* contains a collection of articles from the pages of *Audio Amateur* and other periodicals. This useful reference for LP fans and audio specialists has a mix of theory, cleaning and maintenance information, plus descriptions of hardware and electronic projects. Call 888/924-9465 or visit www.audioXpress.com. ...The 1999 TECNEC Broadcast Product Catalog features more than 300 new products. TECNEC is a distributor for more than 750 manufacturers, including Kramer, Canare and Shure. Call 800/543-0909 or visit www.tecne.com. ...Labor Saving Devices Inc. offers a comprehensive line of specialty tools for installing wires and cables with maximum ease and efficiency. See the current catalog and share tips and tricks at the LSD Web site at www.lsdinc.com. ■



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New from HHHB (www.hhb.co.uk) is the Genex GX8500 multiformat digital recorder. Designed for multichannel recording and mastering applications, the GX8500 can record in linear and nonlinear modes. Formats support-

per hour. The MS Series support most CD formats (and can automatically detect format), plus CD printers. In addition, a Compare Copy Disc feature lets the user verify data integrity bit to bit. Prices are less than \$3,000.

Circle 341 on Product Info Card



ed include AES/EBU, S/PDIF, SDIF-2 and Direct Stream Digital, as well as the new Super Audio CD standard. Sample rates are user-selectable up to 192 kHz, and bit resolution is to 24-bit. (Optional A/D/A converters enable 24/96 recording.) Storage is to either the built-in 5.2GB MO drive, or via SCSI to remote disk or removable media drive. Cross-platform compatibility is offered, with support of BWF, WAV files and a variety of disk formats.

Circle 340 on Product Info Card

PSG MS-SERIES CD DUPLICATORS

Program Solutions Group (www.programgroup.com) introduces the MS Series of stand-alone CD duplication systems. The MS Series is available with one, two or three 4x-drives, enabling duplication of up to 12 CDs

360 SYSTEMS SHORT/CUT '99

360 Systems (www.360systems.com) released Short/Cut '99, a major upgrade of its Short/Cut Personal Audio Editor. Short/Cut '99 is a 2-track digital audio editor that records to hard disk or optional removable media. The system is self-contained, including waveform display, speakers, scrub wheel and tape transport-style controls. New features include file interchange options, including support of .WAV, BWF and AIFF; in addition, Short/Cut '99 reads and generates sound files that can be transferred over the Internet as e-mail attachments. Other new features include the ability to generate fades and crossfades, sync to external source and support of Jaz and Zip drives.

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NEW WAVES BUNDLES

New software packages from Waves (www.waves.com) include the TDM Bundle II (\$1,000), a volume of DSP plug-ins for Digidesign TDM systems, including the Renaissance Equalizer and Compressor, the DeEsser and MaxxBass; the PS22 Stereo-maker for creating stereo from mono; and MultiRack, a stand-alone application for real-time DSP processing of Waves plug-ins. The \$700 Pro-FX bundle is a suite of classic and new effects (including emulation of vintage analog devices), with the UltraPitch 6-voice, formant-corrected pitch shifter, the SuperTap 6-voice multitap delay, the vintage tape-flanging and phaser emulating MetaFlanger, and MondoMod, a combination of AM, FM and Rotation (panning) modulations. The Gold Native bundle for Mac or PC (\$1,200 each) includes the Pro-FX plug-ins, the Renaissance Equalizer and Compressor, the LI Ultramaximizer and the full C1 set. The Power Pack II native plug-in bundle for either Mac or PC (\$500) includes the Renaissance



Equalizer and Compressor, the DeEsser and MaxxBass.

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LIQUID AUDIO E:CAST

Liquid Audio (www.liquidaudio.com) introduces e:Cast (electronic voice casting), a server-based system for authoring, publishing and delivering broadcast-quality audio over Internet or LAN/WAN intranet networks. The e:Cast Liquifier encoding tool records voice auditions for network distribution using a variety of bit rates to accommodate modem speeds to dual ISDN for "streaming" playback (no downloading necessary). Audition files can be downloaded using AAC or AC-3 compression, or as uncompressed audio. Audition files are linked to 60 files of text, including character, studio and actor information, plus contract status, script window and session notes. These files are published to the e:Cast server, where they are immediately available for streaming or download. The e:Cast system includes a Web application for searching through and rating auditions.

Circle 344 on Product Info Card

DAR RECORDER/PLAYERS

DAR (distributed by Studer, www.studer.ch) introduces three OMR-8 high-resolution digital audio disk recorder/players, each optimized for specific applications. The OMR-8D Dubber/Recorder is



designed as a true digital dubber replacement, offering sample-accurate punch-in/out across 8 tracks, plus sync interface to industry standards, including Bi-phase, timecode and RS-422. With DAR's SAM option, up to 128 machines can be networked. The OMR-8MR Master Recorder includes DAR's new 2x AES/EBU transceiver I/O card, for recording 24-bit/96 kHz audio across eight channels simultaneously. Both destructive and non-destructive recording are provided, and a variety of premastering software features are included. The OMR-8P is designed as a nonlinear alternative to tape-based solutions, with eight tracks of recording (resolution to 24-bit/192 kHz). The unit offers both analog and digital I/O. All OMR-8 systems are modular, offer 24-bit operation at sampling rates to 192 kHz, and feature compatibility with many file formats.

Circle 345 on Product Info Card



SEK'D SAMPLITOOLS DECLICKER

New from SEK'D (www.sekd.com), the Samplitoools Declicker DirectX plug-in removes clicks, crackles and other artifacts from audio files. Declicker is made up of two components: a declacking filter to remove heavy

clicks, and a declacking filter for removing remaining small or dense clicks. Users can monitor noise only, in order to set process faders in real time. Declicker is compatible with Samplitude, Cakewalk, Cubase VST and any other DirectX program; retail is \$199.

Circle 346 on Product Info Card

UPGRADES AND UPDATES

Emagic (www.emagic.de) and Roland (www.roland.us.com) are bundling a customized version of Emagic's Logic Audio, LogicVS, with Roland's VS-880, VS-880EX and VS-1680 hardware units. The AX16AT PCI card from Yamaha (www.yamaha.com) provides two pairs of ADAT-format optical I/O connectors for connection to its DSP Factory system. TimeLine's (www.timelinevista.com) TransAudio PipeLine is a file utility program supporting backup, export and tape mode conversion of most popular digital audio workstation file types. CEDAR Audio (www.cedar-audio.com) offers a Version 2 upgrade of the CEDAR for Windows audio restoration application, which includes a revision to NR-3 Noise Reduction and an improved NRC capture algorithm, plus three user-selectable signal models. Upgrades are free to current users. Synchro Arts (www.synchroarts.co.uk) released VocAlign for Soundscape, Version 2.03. In addition, Synchro Arts' Titan for Pro Tools now fea-

tures the Flash Conform function. Sonic Foundry (www.sonicfoundry.com) introduced its Mastering House bundle, including Sound Forge 4.5, plus XFX-1 and XFX-2 DirectX plug-ins and CD Architect, all for \$749. In other Sonic Foundry news, the company announced strategic agreements for bundling with Pinnacle Systems and Guillemot products. On-Stream offers 30GB desktop storage solutions and 30GB



and 50GB SCSI backup solutions. Check out www.on-stream.com. Steinberg (www.us.steinberg.net) released Cubase VST 4.1 for Mac and VST 3.7 for PC; both incorporate the new VST 2.0 plug-in interface and offer a variety of new features. In addition, Steinberg announced its release of Apogee Electronics' (www.apogeedigital.com) MasterTools mastering software package with UV22 for Digidesign TDM systems. New from BitHeadz is the PC version of its Unity DS-1 sampler; a free demo is available on the BitHeadz Web site, at www.bitheadz.com. Syntrium's Cool Edit Pro Version 1.2 features new full reverb, hard limiter and pitch bender effects, RealMedia G2 support and

more. Get a functional demo version at www.syntrium.com. Arboretum Systems' (www.arboretum.com) new Ionizer noise reduction plug-in is designed for Mark of the Unicorn's Audio System. Digital Audio Labs' (www.digitalaudio.com) Card Deluxe is the latest member of the CardID family, with up to 24-bit/96kHz resolution. Sonic Solutions (www.sonic.com) has introduced eDVD technology for creating Web pages with embedded DVD content. Studer's (www.studer.ch) Version 2.03 software/hardware upgrades for V-Eight recorders offers an RS-422 port. Now shipping, the Magix (www.magix.com) Music Studio Professional Desktop System offers digital audio recording, mixing, editing, sequencing and sampling. TC Tools 3.0 (from TC Works, www.tcworks.de) includes the new Megareverb plug-in, and is compatible with Pro Tools PCI, 24 and 24 MIX. Also new is the TC Native Bundle 2.0, featuring the new TC Native L limiter and maximizing tool, which includes Native Reverb, EQ and DeX plug-ins. Musicam USA (www.musicamusa.com) announced the U.S. release of SendIt 3.1, a hardware-independent software codec for PC. Also available from Musicam is the EditPro MP3 editor. WaveFrame (www.waveframe.com) announces a new sampler engine option for WaveFrame workstations, developed with E-mu/Ensoniq and based on the Post Card. ■

TECHNOLOGY SPOTLIGHT

ALESIS MASTERLINK ML-9600

24-BIT/96KHZ HARD DISK/CD-R MASTERING RECORDER

Alesis is no stranger to breakthrough technologies. Its 1991 debut of the ADAT digital multi-track sparked a revolution that continues to this day. And rather than base that product on esoteric, proprietary media, Alesis designed the ADAT to use low-cost, readily available S-VHS tapes, which made it an instant hit. Now, Alesis is poised to do the same thing for mixdown decks, with the MasterLink ML-9600, a 24-bit/96kHz recorder/editor that stores high-resolution stereo mixes to hard disk or on conventional CD-R blanks.

Although MasterLink retails at \$1,699—comparable to a studio DAT recorder—the unit goes far beyond the capabilities of a typical mixdown deck by combining a hard disk recorder, internal DSP and a CD-R burner in one unit. Its onboard 3.2GB IDE hard drive stores a minimum of 95 minutes of 24/96 stereo audio or a maximum 310 minutes at 16 bits/44.1 kHz. The CD-R burner creates disks in either standard Red Book 16-bit format for playback on any CD player, or as CD24™ 24-bit disks. The CD24 disks are playable on the ML-9600 or readable by any ISO 9600 (Mac/Windows/Unix) CD-ROM drive for transferring its 24/96, .AIFF-format audio files to a high-end workstation.

The front panel has switches for selecting the input source, sample rate, word resolution and CD format, as well as dedicated buttons for playlist edit, track create/delete, track start/end, DSP select, track move, hard disk/CD select and standard tape recorder-type transport controls. A large vacuum fluorescent display provides metering, time displays and status monitoring.

Interfacing is simple: MasterLink's rear panel includes analog stereo I/O on +4dB balanced XLRs and -10dB unbalanced RCAs; and digital I/O in both S/PDIF coaxial and AES formats. The front panel has a stereo headphone jack with volume control. A/D and D/A converters are high-quality, 24-bit 128-times oversampled types.

Housed in a two-rackspace unit, MasterLink seems little more complicated than a DAT machine, but beyond its basic disk recording/CD-R functions, it provides a wide range of mastering features. The unit offers a choice of sample rates (44.1/48/88.2/96 kHz) at 16/20/24-bit resolution. On-board signal processing includes 3-

band parametric EQ, compression, normalization and peak limiting, along with built-in sample rate conversion and noise shaping for creating standard 16-bit CDs from 20/24-bit files.

Editing features include the ability to create, save and recall 16 different playlists, each with up to 99 songs. Also within MasterLink's editing toolbox is a gain control for each track, cropping functions for defining exact start/end points, and Join and Split features for combining or separating song sections. MasterLink's onboard CD-R drive also offers the ability to upload new software, and Alesis plans future updates to expand the system's capabilities.

The CD creation process is straightforward. Once tracks are edited or DSP'd to taste, the user simply selects CD24 or Red Book format, and a single button-push starts the internal Matsushita 4x CD-R, cre-



ating a full CD in about 20 minutes. Standard 16-bit CDs store up to 74 minutes; obviously, with its increased data requirements, a CD24 disc has a maximum capacity of about 26 minutes at 24/96.

One advantage that MasterLink offers over conventional mastering decks—whether DAT or analog 2-track—is the system's ability to create backups of itself. Once recordings are captured to disk, the unit can burn as many CDs (or CD24s) as required, for safeties, archiving or simply having extra copies for the band or for distribution to clients, record labels, radio, etc.

Suited for a variety of applications, ranging from studio recording and mastering, to broadcast, live theater and audio post use, the Alesis MasterLink marks an important step in creating a high-resolution stereo recording solution that's flexible, versatile and based on standard, low-cost media. When it begins shipping (slated for the end of this quarter), at a retail price of \$1,699, the MasterLink ML-9600 will definitely generate a lot of interest from project and professional studio users everywhere.

Alesis, 1633 26th Street, Santa Monica, CA 90404;
310/255-3400; fax 310/255-3401;
www.alesis.com. ■

BY GEORGE PETERSEN

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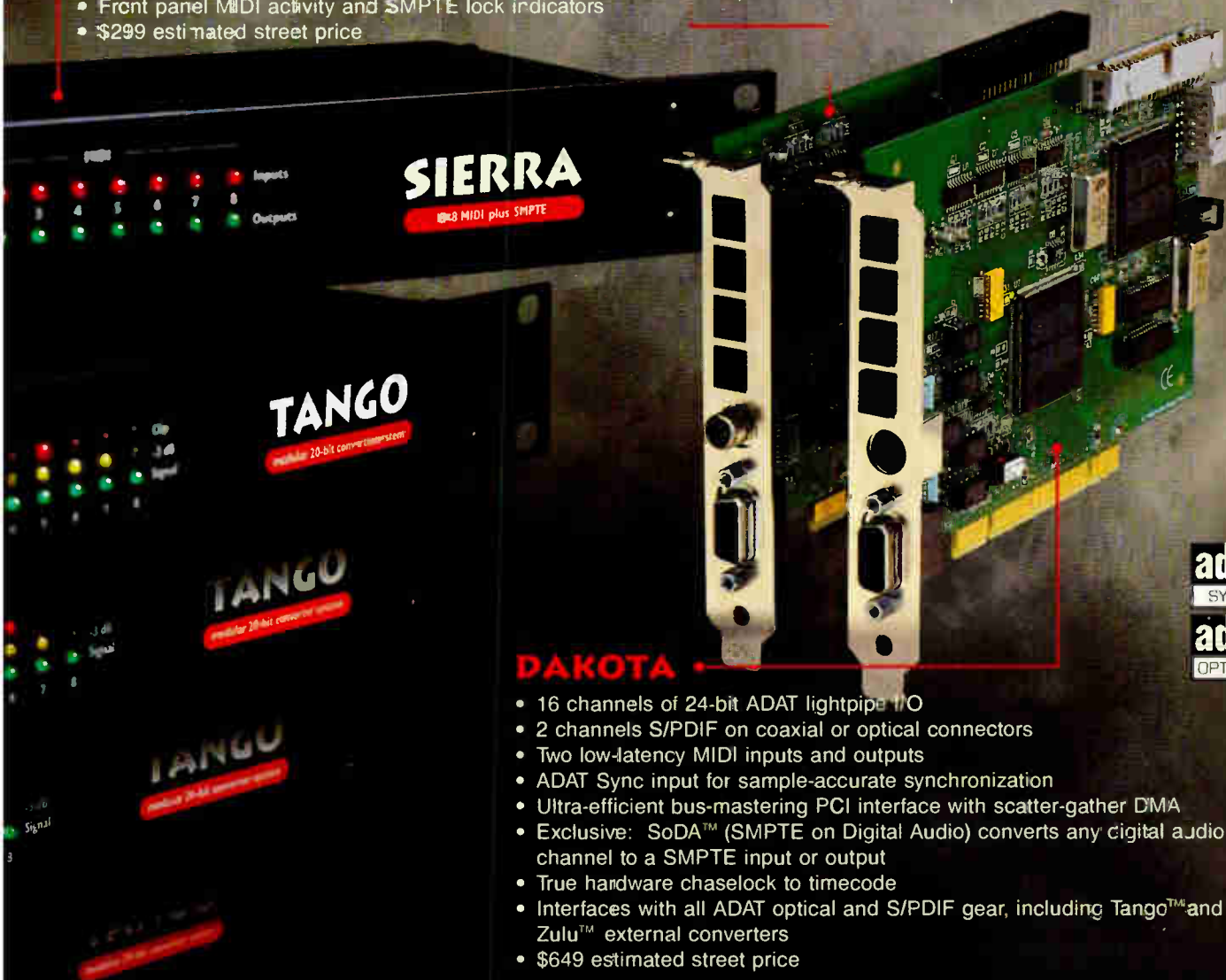
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DIGIDESIGN PRO TOOLS | 24 MIX

CROSS-PLATFORM WORKSTATION

Digidesign's Pro Tools | 24 MIX has arrived, and it will knock your socks off. This newest incarnation of the ever-popular Pro Tools system features a lot more power for a lot less money. Furthermore, this system will work on a PC. That's right, I said a PC. (Incidentally, Digidesign's other Pro Tools | 24 products are all available for both Macintosh and PC now.) No longer are dedicated Pro Tools users obligated to work on Macintosh, nor are PC users forced to switch platforms in order to take advantage of Digi-gear.

Pro Tools | 24 MIX ships in two different configurations, Pro Tools | 24 MIX (\$7,995) and Pro Tools | 24 MIXplus (\$9,995). Both are built around the MIX Core PCI board, a card that can handle up to 64-voice simultaneous playback (with a maximum of 128 tracks) and 16 channels of I/O. Digidesign has managed to cram an amazing six 80MHz 56301 Motorola Onyx DSP chips (including SRAM and DRAM chips suited to specialized processing tasks) onto a single card. The MIXplus system includes the additional MIX Farm card, which has another six DSP chips on it, yielding another 16 channels of I/O and more than double the DSP. You can buy the MIX Farm separately (\$3,995) if you need to add more DSP to the 24 MIX Core system later on. An optional MIX I/O card (\$795 currently only supported on Mac) to the MIX Core gives you another 16 channels of connectivity, for a total of 32, but no additional DSP. Pro Tools | MIX can support up to 72 channels of I/O.

Each system ships with the latest version of Pro Tools (I got Version 4.3) and one install. (When you register your product, you receive another install.) The 888 24 I/O and the new ADAT Bridge are purchased separately (\$3,695 and \$1,245, respectively). Though each card (the Core or Farm) will do 16 channels of I/O, only one single 8-



channel cable comes standard per card. However, a Y-cable is available, for \$100, that lets you attach two of the 8-channel cables to one card (extra 8-channel cables cost \$130). Theoretically, this means a MIXplus system could have two 888 24 I/Os plugged into the Core card and still take advantage of all 16 channels of the ADAT Bridge through the Farm card (or vice versa). (I say theoretically because I had little luck getting the Y-cable scenario to work. Whether it was a software bug or a setup problem I couldn't determine due to time constraints, but I suspect it was a bug—the I/Os on my system were completely confused with the Y-cable plugged in. Without the Y-cable things worked fine, but that only gives you eight channels per port.)

Digidesign gives Pro Tools 24 owners the option of trading in their old system and receiving a discount on the MIX system. (Pro Tools | 24 MIX is \$3,995 with a core card swap, and Pro Tools | 24 MIXplus is \$4,995 in exchange for two d24 cards.) You'll probably want to hold onto at least one of your old Farm cards because they are compatible with the MIX system, the advantage being that the old Farm card lets you use your old plug-ins (i.e., plug-ins that haven't been, or may never be, updated for MIX). I'll cover the plug-in situation in detail below.

To run MIX on a Mac you'll need a Power Mac 8600 or better. The Power Computing Power Tower Pro is also rated as being compatible. (Digidesign posts a continually-updated compatibility chart on its Web site, www.digidesign.com.) I tested the Pro Tools | 24 MIXplus system on a 266MHz G3 desktop. I don't recommend working with anything less than 200 MHz; and though Digidesign does not officially support any third-party CPU upgrades, many folks have had great luck with Newer Technology products. Throughout this field test, Digidesign was having problems getting Pro Tools to run on Apple's new Blue G3 machines; however, hot off the press, Digidesign introduces Version 4.3.1, which supports the new systems.

Operating MIX on a PC requires an Intel Pentium II CPU, 233 MHz or better, running Windows NT Workstation V.4.0 or higher (with service pack 3). Don't mess around with any other CPUs (e.g., Cyrix MIs or AMD K6-2s); processor timing is essential with audio, and they aren't up to snuff. P III machines are not yet compatible. Only uniprocessor computers are recommended; stay away from dual-processor units. Also mandatory are 440 LX or 440 BX chipsets, and the BIOS should be Phoenix or Award. I tested the same Pro Tools | 24 MIXplus system that was in my Mac in my Intel Pentium II 400MHz computer.

BY ERIK HAWKINS



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CIRCLE #067 ON PRODUCT INFO CARD

World Radio History

FIELD TEST

Both Mac and PC require 128 MB of RAM or greater. You must have two consecutive PCI slots available (more if you want to add additional Farm cards) and a slot for a SCSI accelerator card as well. I recommend the Adaptec 2940U2W. A Digidesign-compatible HD must be attached to this card or you can forget about doing any sessions. (I used a Seagate Cheatah.) The Pro Tools software itself can live on your system drive, regardless of whether it's IDE or SCSI. A minimum monitor size of 17 inches is recommended, but I suggest a

19-inch or bigger (or a second monitor) to really work comfortably.

INSTALLATION

Getting MIX up and running on the Mac is the same as usual: Put the PCI boards in their proper slots and install the software. Make sure your interfaces and approved SCSI drive are hooked up and boot up the software—pretty straightforward. Once I got OMS configured (the most recent Version always ships the Pro Tools Mac version), I had MIX synched to ADATs and working seamlessly with Mackie's HUI (Human User Interface) controller in under an hour.

The only annoying problem I ran into was that there wasn't enough room in my G3 desktop machine to get everything in; the PCI boards are huge, spanning the entire length of the computer, along with the Core-to-Farm interconnect cable, with the SCSI cable attached to the accelerator card, I couldn't get the computer's top on and ended up just leaving it ajar. The G3 desktop ran MIX fine, but I'd suggest sticking with a tower, purely for convenience.

Installing MIX on PC is just a little more complicated. Before you can get MIX up and running you'll need to make sure you've got Windows NT working smoothly—not a simple task since you'll probably have to fight with Windows 98 to get NT running. Once you've got the proper OS installed, the rest is pretty much by the numbers. Pop the Pro Tools PCI boards in and make sure your SCSI card is hooked up to a Digidesign-approved HD. Since NT doesn't use OMS you don't have to worry about this setup; your MIDI interface should come with instructions. Overall, Pro Tools looks the same on NT as it does on the Mac. Key commands are a little different and Auto Fade (which is available on Mac) is currently not supported, but that's mostly it. Operations speeds seemed about the same on my 400MHz Pentium as on my 266MHz Mac (which indicates to me that the PC is a bit slower than the Mac).

The look and feel of Pro Tools has not changed markedly since previous versions. However, in general, all operations seemed smoother and faster than the old Pro Tools|24 system (on both Mac and PC), from booting the program to loading a session to calling up plugins. Version 4.3 now supports AIFC (AIFC Compressed) file formats, giving it compatibility with Avid Media Composer. Individual DAC outputs on the 888|24 I/O are now automatically muted when no signal is present. This is excellent for keeping the residual noise floor of the DACs down. If you're using Digidesign's USD, you can now plug it directly into the serial port on the Core card (or the d24 card). This is a wonderful update because it frees up your computer's ports for printers and MIDI interfaces. Extra MMC support has been added in Version 4.3 as well (e.g., track arming directly from the program itself).

The biggest user interface improvement is a new tool called the Smart Tool. You'll find it with the other tools, on the toolbar menu, in the Edit window. This new feature comes as a much needed relief for hard-core Pro



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CIRCLE #068 ON PRODUCT INFO CARD

What's Your Secret Weapon?



*Rob Chiarelli at Enterprise Interactive
The Cabin, Burbank, CA*

Rob Chiarelli has mixed records for Will Smith, Michael Bolton, Janet Jackson, Ray Charles, T.Q. and many others. His secret weapon for reverb and multieffects? The Alesis Q20.

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For more information on the Alesis Q20, visit www.alesis.com or call 800-5-ALESIS.

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CIRCLE #072 ON PRODUCT INFO CARD

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World Radio History

MANLEY LABS MASSIVE PASSIVE

STEREO TUBE EQUALIZER

There are lots of equalizers on the market. So, does the world really need another EQ? Having heard Manley Labs' Massive Passive, I can answer with a resounding "Yes!"

The Massive Passive is a 2-channel, 4-band parametric design with lowpass and highpass filters. I/Os are balanced XLR and TRS operating at +4 dBu, with DIP switches for changing levels to -10 dBv, a first for any Manley product.

Each of the four EQ bands has a ± 20 dB gain range with a switch having illuminated cut/boost indicators and center bypass position, rotary switch with 11 center frequencies, continuously variable bandwidth ("Q") control, and a shelf/bell switch. The front panel also has the six-position (Off plus five switchable frequencies) lowpass and highpass filters, two gain trim pots, illuminated bypass switches for both channels, and a power switch with a 20-second warm-up delay.

The front panel seems simple, with a few caveats: The gain controls are zeroed (flat) at the full CCW position, rather than the "12 o'clock = 0 dB" configuration of a typical EQ. The bypass switches are not true hard-wired bypass, but disengage the filter and tube gain make-up stages while leaving the input amp and output transformer in-circuit. The unit uses true passive equalization and has its bands connected in parallel (rather than the series approach used in nearly all other EQs), so there is a high degree of interaction between the bands, especially in the gain and bandwidth controls. Therefore, a true correlation between the gain control position and any exact number of dB change is unlikely. For example, the full 20dB cut/boost range is only available in Shelf mode at a wide bandwidth; at narrower settings, gain drops to ± 12 dB, and the opposite is true in



the bell curve setting—the ± 20 dB max is only available at the narrow settings.

Fortunately, EQ is more about what sounds best than it is a matter of exact settings. And this is where the Massive Passive really shines. The goal of designer "Hutch" Hutchison was to create a mastering-quality EQ that had the curves of Pultec's EQP-1A and HP LP filters (but offering much wider ranges), with the sound of vintage Neve and API EQs. And in an era when op amp-based equalizers are the norm, the Massive Passive keeps to its name, with true passive equalization, based on huge, real inductors, custom-wound at the Manley factory. The parametric EQ center frequencies were chosen for musicality, rather than numeric ISO centers.

In session, I was tracking drums with a pair of Neumann M147s on overheads, and Audix D4 on kick and electronic snare (fed from an Alesis DM Pro drum module). The M147s provided a punchy, full sound with a nice balance of toms and cymbals—and only needed a little extra top sizzle. A touch of Massive Passive shelving at 18 kHz added the perfect amount of sheen.

Tracking with a CA1D VX2 tube mic on background voices, I was looking for an ethereal quality—lots of air, a huge presence boost and a rolled-off bottom, so the Massive Passive came into use as an effect, with a radical 220Hz highpass filter, a narrow-band

boost at 4.7 kHz and a wide shelf boost at 27 kHz. Here, the EQ's boost/cut/bypass switches on each band were invaluable in getting the right sound fast, while the gain trim pots allow the flat vs. EQ settings to play at exactly the same level for accurate A/B comparisons.

In mixing pop tracks, the Massive Passive was wonderful on all kinds of tracks: horns, acoustic and electric guitar, percussion and, of course, vocals, offering the versatility to be as subtle or as in-your-face as you want. But the unit is equally suitable in mastering applications. Working on a premastering session with British guitarist/songwriter Anthony Hindson, on the title track to his *It's a Curious Life* CD (Wind in Hare Records), a blend of top Western and Indian musicians, we wanted to tweak up some Shankar violin fills (without becoming shrill or stepping on Jack Bruce's vocals), and a narrow 2.2kHz bump did the trick. At the same time, we added a 68Hz shelf boost for more fullness to Jack's bass, slipped in a narrow 390Hz cut to reduce mush and added a bit of 27kHz shelving for the "ahh!" factor.

With its innovative circuit design, feature set, stunning audio clarity and its sound, the Massive Passive is clearly in a league of its own. Retailing at \$4,800, it ain't exactly pocket change, though, so refinance your house, and get several for your rack. You won't regret it.

Manley Laboratories, 13880 Magnolia Ave, Chino, CA 91710; 909/627-4256; fax: 909/628/2482; www.manleylabs.com. ■

GEORGE PETERSEN

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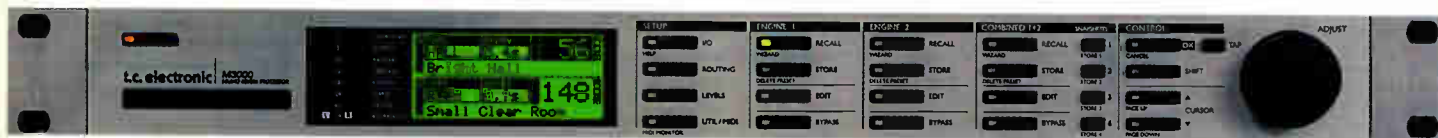
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TC ELECTRONIC M3000

STUDIO REVERB PROCESSOR



Sometimes reverb is used to enhance reality—applied, as if with an artist's paintbrush, to color, fatten, soften, smear or gel. Other times, reverb is used to emulate reality, to transport a performance from one place to another, making audio recorded in a sound booth, for instance, sound as if it were recorded in a concert hall. TC Electronic's M3000 Studio Reverb Processor can handle the former, but its *raison d'être* is to tackle the latter.

Reality is a complicated thing, and producing a reverb unit that will convince our brains that its algorithms reconstruct real spaces is a daunting, processor-hungry task. Mainly through a new algorithm, what TC Electronic calls VSS-3 (Virtual Space Simulator), the M3000 attempts to trick the listener into believing that the audio passing through its circuitry is actually traveling through a real space, with real walls, floors and ceilings.

The M3000 includes delay, pitch shifting, EQ, expansion, compression, chorusing, flanging, phasing, de-essing and a tremolo/panner. But the heart and soul of the M3000 are its elegant 24-bit reverbs, most notably those based on VSS-3. While the M3000 includes reverb algorithms from other TC Electronic products, such as the "C.O.R.E." algorithm from the M2000 and the "REV3" algorithm from the M5000, the VSS-3 algorithm represents the company's most ambitious, complex and flexible to date.

VSS-3 organizes reverb into a series of early reflections followed by a tail. Because the early reflections define a room's "personality," VSS-3 patches include between 40 and 100 early reflections. And be-

cause a high-quality tail is necessary to sustain a credible illusion, the designers labored to ensure that the .01 to 20 seconds allotted for VSS-3 tails maintain high fidelity throughout their decay.

ROBUST PALETTE OF OPTIONS

Both the early reflections and the tail can be independently modified via numerous parameters. For instance, the VSS-3 algorithm includes flexible filters that can make rooms seem darker, brighter, softer, etc. Filters can also be applied to diminish frequencies in the reverb that compete with the source audio. A robust palette of gating and modulation options provides further ways to alter the effect. And the duration between the dry sound and the onset of early reflections, as well as the duration between the early reflections and the tail, can be independently changed.

The M3000's dual-processing architecture makes it powerful and easy to use. With two processing engines, it is essentially two machines in one. While a Dual Mono mode splits the unit into two separate mono processors, there are a number of routing options that permit the processors, each of which can output a stereo pair, to be combined in a variety of ways.

For example, in Serial mode, the outputs from one engine are sent to the inputs of the other. This setting is particularly useful for compressing a drum track or de-essing a vocal in one engine before sending it to the other for reverb. Parallel, Dual Input and Linked modes can be used for combinations of stereo effects, and a Preset Glide mode allows a current effect to crossfade

smoothly into a new preset.

One of the M3000's most creative effects is called Dynamic Morphing. Despite a name that sounds like an exciting new opiate derivative, Dynamic Morphing actually links the level at the main input to the levels of each engine's output, switching between them with respect to a user-defined threshold. Depending on the loudness of the source audio, the M3000 will output more or less of the effect generated by either engine. This can be used, for instance, during a song in which loud, belted notes yield one effect that gracefully changes into another effect as the singer simmers down.

SIMPLE INTERFACE

Controlling the M3000 is a breeze, thanks to a simple interface that belies the power and flexibility under the hood. Buttons, arranged into columns labeled Setup, Engine 1, Engine 2, Combined 1+2, Snapshots and Control, dominate the anodized aluminum face. A slot for a PCMCIA card, an LCD screen and an adjust knob surround the columns. Pressing a button retrieves the associated menus, which can be navigated by using cursor keys in the control column in tandem with the adjust knob. A Tap key for controlling the speed of delays, decays, tremolos, phasers, flangers and chorusing, and an on/off button with a protective delay, complete the front controls.

Much as I hate plodding through manuals, I usually have little choice. Not so with the M3000. I found that I could easily navigate and edit patches without consulting the preliminary manual that came with the unit.

Patches can be chosen through scrolling or with the help of the "Reverb Wizard." With the Wizard,

BY ARTHUR BLOOM



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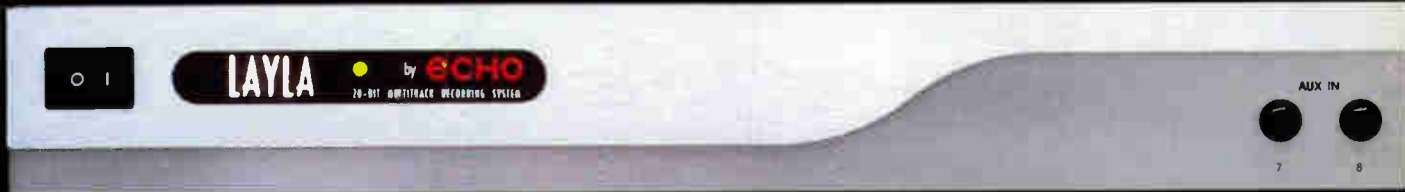


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FIELD TEST

responding to queries yields a menu of suggested patches. Alternatively, pressing the Recall button in either engine's (or the combination) column, scrolling through 250 single or 50 combined presets and pressing OK selects a patch. Another 250 single and 50 combination user-created (or future company-created) patches can be stored in internal RAM, which can be recalled from and stored on PCMCIA cards.

Patches can be edited through either a "User" mode (limited generalized variables) or an "Expert" mode (many specific variables). MIDI implementation is thorough, and includes a cool MIDI monitor screen that displays MIDI activity and related information.

Using the M3000 reminded me of the way in which I use samples of acoustic instruments. First I formed a mental "image" of a real room, and then I attempted to replicate its character and idiosyncrasies via the electronic surrogate. I experimented with a grand piano I had recorded dry, using patches called "Concert Piano" and "Piano Hall, First Row." The reverb not only sounded gorgeous and subtle, but it also seemed to have an organic relationship with its audio source. Applying Stereo Large Hall to dry tracks of orchestral instruments, from double reeds to strings, also yielded excellent results.

LUSH AND DENSE STEREO

With pop-oriented material, it did not take long to discover that vocals love the M3000. One of my favorite setups involved sending vocals through a "40x40ft Studio" patch in one engine, and a Large Warm Hall patch in the other. With routing set to parallel, the M3000 mixed the stereo output of each engine into a wonderfully lush and dense master stereo out.

On one fantasy-indulging occasion, with curtains drawn and door shut, I used the Vocal Deep Male patch on myself to turn *Take 6* into *Take 7*. Sometimes less is definitely more. I also had fun using the In the Clouds patch to transform carnivorous rock into vegan new age.

The back of the unit includes a generous array of connection options. Analog connections are made through balanced XLRs. Digital connections include AES/EBU (24-bit), S/PDIF (20-bit). Optical Toslink and ADAT. There are also ports for digital wordclock, MIDI In, Thru and Out, and External Control Input.

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NFL Films of Mount Laurel, NJ, has an ever increasing workload. With over 300 hours of programming annually for ABC, CBS, Fox, HBO, Turner and ESPN - and the additional worldwide distribution of home videos and international programmes - NFL is relocating to a new fully-digital complex.

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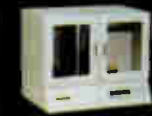
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Because signals are present on all outputs, as is the case with my Tascam DA-30 MkII DAT machine, the M3000 can be put to work as either a format converter, or an A/D or D/A converter. Another cool trick is to input two ADAT channels into the M3000, process them and output the result to two different ADAT channels without ever leaving the land of zeros and ones.

The M3000 includes many other useful digital bells and whistles. For instance, a digital gain section, separate from the analog input gain, can add up to +6 dB for increasing the signal of lightly-recorded digital material prior to processing. Dithering (type HP-TDF) can also be added from 8-bit through 22-bit resolution to off. Finally, while the M3000 can recognize word clock from 32 kHz to 48 kHz, it can also use its own internal clock, making it an available master clock in a digital environment.

EXEMPLARY TECHNICAL SUPPORT

Should you need it, by the way, I have found TC Electronic's tech help to be exemplary. In my experience—and I purposely did not reveal that I was reviewing the product—TC Electronic's technicians have always been personable, responsive and knowledgeable.

Sure, I could nit-pick. A blinking light that engages on this and other TC Electronic devices after they are turned off, is, in my opinion, more distracting than helpful. And patches sound like they were named in an afternoon. For instance, there's Real Room, not to be confused with A Real Room, and another one, if you can believe it, called Kinky Chinks. However, these are criticisms of presentation, not operation.

Regarding operation, while the M3000 may not represent the final step in digital reverb's march up the mountain to audio perfection, it represents a legitimate step closer to the summit. For sheer variety of effects, TC Electronic's Fireworx or Lexicon's PCM 81 may be a better bet. But the M3000 is among the highest-quality reverbs available today and, at a reasonable \$2,499, deserves a serious look.

TC Electronic, 790-H Hampshire Road, Westlake Village, CA 91361; 805/373-1828; fax 805/379-2648.

Arthur Bloom is a composer, producer, studio owner and, from time to time, doctoral candidate at Yale University. He can be spammed at ArthurBloom@compuserve.com.

AKG C 4000B

MULTIPATTERN CONDENSER MICROPHONE

Since the dawn of magnets, engineers and musicians alike have searched for warm-sounding, durable and affordable microphone technologies. Well, search no longer—the AKG C 4000B has arrived.

Priced at \$848 (including AKG H 100 spider-type shock mount and W 4000 wind/pop screen), the C 4000B is an electret condenser design offering switchable omnidirectional, cardioid and hypercardioid patterns to handle various recording/sound reinforcement applications.

The C 4000B has a 1-inch double diaphragm pressure gradient system with a 6-micron-thick, gold-sputtered mylar membrane for optimum transient response. The capsule is placed in an internal suspension cradle to provide shock isolation and damping of low resonant frequencies caused by structural-borne noises. A heavy wire grille, a second sheath of fine wire mesh and internal 3mm-thick screen protect the capsule from subtle wind and breath-generated "pops" without undesirable high-frequency attenuation.

All high-impedance circuitry is polyurethane-coated and placed underneath the capsule to allow for the highest tolerance to humidity. All electrical contacts within the C 4000B (including the XLR connector) are hard gold-plated for resistance to corrosion. A -10dB pad switch increases the undistorted maximum sound pressure level handling to 155 dB. The C 4000B also offers switchable bass-cut (highpass) filtering providing 12dB-per-octave roll-off below 100 Hz.

The C 4000B's specifications indicate that AKG has not compromised quality to make the microphone affordable and acoustically exceptional. Stated frequency response is 20 to 20k Hz ± 2 dB. Dynamic range is spec'd at 137 dB (A-weighted) with a signal to noise ratio of 86 dBA referenced to 1 Pa.

The mic's self-noise is 8 dBA when compared to the DIN 45 412 scale.

IN SESSION

For my critical listening and evaluation, I designed a set of simple parameters. Using a matched pair of mic preamps and a multitude of different "control" microphones, all tracks were recorded to discrete channels completely dry and then combined with the final mixed music tracks for vocal comparisons. Recordings were made simultaneously across two microphones. I used three different microphones of different manufacture and caliber, from large-diaphragm studio condensers to shotguns, as well as the old standby AKG C 414. A variety of different styles of musical instruments as well as spoken dialog were recorded in an attempt to cover as broad a range of recording scenarios as possible.

The first thing that I noticed was the C 4000B's overall transparency when compared to the other microphones. When recording close proximity voice-over against a small shotgun-style condenser microphone, the C 4000B showed just the slightest increases or highlight of high/mid-frequency boost somewhere around 3 kHz, with little to no audible difference or coloration within the low frequencies.

Scrutinizing the mic under the conditions of vocal recording—comparing the C 4000B against the AKG C 414—I found that the C 4000B provided a much fuller-sounding and warmer capture of the performance with an extremely well-rounded low end and a more contoured high-frequency response, whereas the 414 left my ears feeling a little bit crisp and less rounded. Working the C 4000B's \$848 price tag into the equation, I was convinced that the C 4000B is an excellent value.

In another recording situation,



the C 4000B was used to mike acoustic bass. The recording was made with a completely dry print to tape, and only minor compression was applied to the playback, producing an extremely detailed presence as well as a considerable amount of punchiness and character. When this recording was compared to a recording made simultaneously with an \$1,800 studio mic, the result was astounding. The C 4000B provided an almost identical acoustic footprint to the much more expensive mic.

The AKG C 4000B is both an exceptionally detailed and affordable microphone with amazingly true sonic clarity, rugged construction and almost no coloration of sound (except for a slight amount of sheen in the high end), capable of capturing a very broad range of acoustic and electric signals. If you have the means, I highly recommend adding a pair to your ensemble.

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Hunter Pipes is a sound designer at Dubeys Times, a post-production facility in San Francisco. He recently worked on the Nickelodeon series Life With Loopy.

BY HUNTER PIPES

MACKIE REAL TIME OS VERSION 2.0

SOFTWARE UPGRADE FOR THE DIGITAL 8•BUS CONSOLE

Mackie Designs has been shipping hundreds of its \$9,995 Digital 8•Bus (D8B) Consoles for more than a year. Now the Mackie D8B has a new look, but owners of existing D8Bs are unlikely to suffer buyer's remorse—Real Time OS V. 2.0 is a software upgrade, and, best of all, users can download the new software for free from www.mackie.com.

Based on the proprietary Mackie console operating system, OS V. 2.0 retains its logical and intuitive look, so anyone familiar with Windows or Mac OS can figure it out in minutes. And although the D8B mixer can be used by itself, adding an inexpensive S-VGA monitor (up to 21 inches), keyboard and mouse really opens up the possibilities of the console.

OS V. 2.0 adds more than 25 features and updates another dozen or so functions. However, many of

MIX EDITOR

Among the most important new features of OS V. 2.0 is the Graphic Automation Editor, which provides a workstation-style interface screen for observing and graphically tweaking all automation parameters over time, with frame-accurate control. Provided on a resizable window, the Mix Editor (I really like the name of this feature!) works in conjunction with the Event List Editor, so changes on either screen are updated instantaneously on the other. Automation changes are shown in a manner that's simple to understand and actually fun to use.

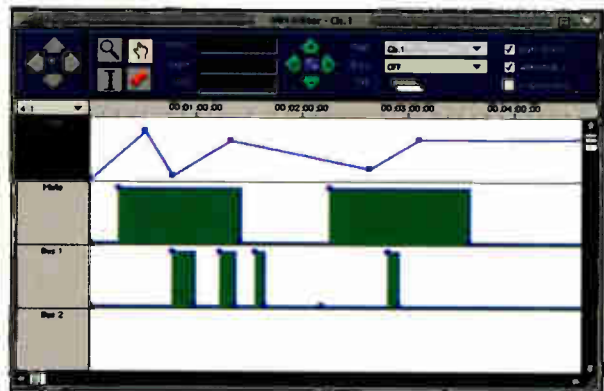
Within the Mix Editor, the automation moves (fades, gain changes, mutes, etc.) for each track/bus/aux are displayed as a simple timeline, with all points where moves are made indicated with small markers. The screen visually indicates the relative levels of

ideal for comparing front-back against left-right pans in surround mode. Zoom controls allow the user to magnify any area or track for creating more precise moves.

In addition, the Mix Editor offers the capability to edit individual EQ parameters dynamically (gain, frequency, Q) or dynamics data (gain/attack/release/threshold/ratio/etc.) as quickly and easily as tweaking a fader move. Here, the menu's ease of operation really encourages the user to try various parameter changes for creative effect. Very cool.

NEW FAT CHANNEL

The most visually striking aspect of the OS V. 2.0 software is the greatly improved Fat Channel display, which graphically shows the data for any one console channel in a large, easy-to-access, appealing display on your monitor. The overall look of the Fat Channel is inten-



The analog-looking Fat Channel screen (left) and the Mix Editor screen

the updates such as mouse speed adjustment and fader touch—a feature that allows for modifying a mix in Auto Touch mode by moving a fader on-the-fly—are really features that were lacking in earlier incarnations, rather than new breakthroughs. Nevertheless, OS V. 2.0 offers a number of truly new, powerful features that bring the console up to the next level of performance.

each channel and making changes is as simple as clicking on the display line and pulling it up, down or out to move a mute point, lengthen/shorten a fade or adjust gain. Pull-down menus can display editable foreground data vs. background data (such as pan, EQ, dynamics, auxes, etc.), which is

tionally analog in appearance, and it makes changes in EQ, auxes, main fader, bus/tape routing assignments, pan, phase, compression, gating, solo and muting all instantly accessible and fast.

Navigating within the console from the Fat Channel is done simply by clicking on any of the buttons along the bottom of the Screen display to bring up the

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FIELD TEST

Setup, Snapshot, Locator (transport), Surround, Event List, Mix Editor or hardware card menu overlays instantly. And if you have too many menus active at one time and need to get back to a clean Fat Channel display, a useful Close All button handles the task. But more often than not, most operations can be handled with only a couple of active windows, perhaps for transport control or surround panning, and all the menus can be moved (and sometimes resized) to fit your particular needs at any time.

The mixer channel assigned to the Fat Channel can be assigned via the (hardware) select buttons above the fader on the mixer surface, or selected with a simple mouse click. And as with the Mix Editor display, the visual appeal of the Fat Channel actually encourages the user to experiment.

One of the things I found lacking in the early Mackie D8B software was that there was only one EQ. Within the Fat Channel, OS 2.0 provides a palette of four equalizers: British H/P combines a highpass filter, two parametric mid bands and high shelving; British EQ offers low shelving, two parametric mid bands and high shelving; 4-Band Parametric has four parametric bands with traditional overlapping as found in analog EQs; and 20/20 EQ features four parametric bands with full 20 to 20k Hz overlapping. Any number of EQ presets can be saved and recalled for later use, and the selected EQ curve is shown on an X-Y gain vs. frequency color display. Changes can be entered via tweaking the analog-appearing onscreen "knobs," by typing in numerical values, or via mouse clicks.

The EQ sounds very good—smooth and musical—and all EQ parameters can be adjusted in real time, without glitching or artifacts. But the hippest thing about the EQ is its Morph function, where the EQ can automatically fade from one preset to another with the touch of a button. The morph time is adjustable from 0.1 to 10.1 seconds, for smooth transitions or on the beat changes; this is another feature that brings up numerous creative or technical possibilities, ranging from a simple tone-shaping change on an instrument or voice as a solo, bridge or chorus comes up, to neat tricks like adding a gradual bass boost during a fade out, to compensate for Fletcher-Munson effects as volume decreases with the fade.

It's impossible to open the Fat Channel display without noticing the two large, vintage-looking meter displays

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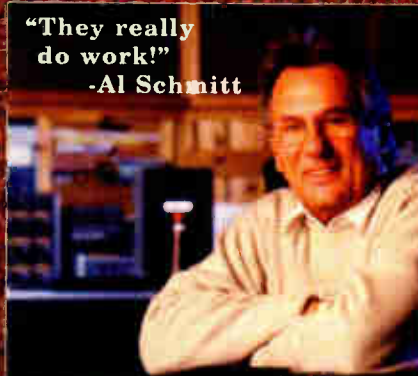
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that indicate compressor action or input/output/gain reduction (switchable) action of the noise gate. (Though VU-looking in appearance, the meters don't have true-VU ballistics but instead display an averaging response.) Here again the compressor and gate parameters are easily adjustable and include two memory settings (and bypass) for quick A/B comparisons.

AND THE REST

With all the new features and functions offered in the OS V. 2.0 software, it would take a book to detail them all; in fact, the manual addendum (available for download from Mackie's Web site in PDF format) is 60 pages long. However, numerous functions are worth mentioning here. For one, Mackie is now offering a new PDI•8 digital interface card that provides eight channels of AES/EBU I/O; clicking on the card setup from the Fat Channel display brings up a window that allows users to customize the I/O. For example, real-time sample rate conversion can be rendered on any input pair, or Apogee UV-22™ output encoding can be applied, or Pro or Consumer status bits can be selected. Setup is fast and painless.

Other new touches in OS V. 2.0 include a choice of latching or one-at-a-time (radio button-style) operation for solo selection, solo isolate for making certain channels continue even when another channel is soloed (a similar feature is also offered for the surround buses), the ability to cascade or remotely access multiple D8B consoles via Ethernet, and a global record safe command sent via MIDI Machine Control.

As with any software-based product, the Mackie D8B continues to evolve, and it's not completed yet. For example, a wider selection of dynamics presets would be nice, while some hardware items—such as a SMPTE sync card for post applications—are yet to materialize. Currently, synching the D8B to SMPTE requires using an external SMPTE-to-MIDI Time Code converter, but in the meantime, OS V.2.0 offers a host of new features and updated functions. Best of all, this software update is free for the download. With that in mind, I'd have to give this upgrade a "10" on the price/performance scale. Definitely.

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World Radio History

GT ELECTRONICS AM52 AND AM62

ALESIS ENTERS THE MICROPHONE MARKET

Alesis has successfully made its mark in signal processors, drum machines, sequencers, synthesizers, tape recorders (and what a mark that is) and studio monitors, as well as introduced several mixers. It was inevitable that the company would some day tackle microphones. In 1998, Alesis acquired the Groove Tubes line of electronics, securing the talents of their designer, Aspen Pittman, and founding a new division, GT Electronics.

The first offering from GT, the AM Series of microphones, consists of four models of large-diaphragm condensers situated right in the middle of one of the hottest and most competitive regions of the microphone market: the mid-priced condenser. The AM61 (\$999) and 62 (\$1,299) are built around a mil-spec Groove Tubes GT5840M tube, a subminiature pentode wired as a triode to yield softer overload characteristics. The GT5840M was also chosen for its suitability in implementing a circuit with low microphonics. The AM61 and AM62 employ a nickel-core output transformer from Cinemag, a small manufacturer of high-quality transformers. The AM51 (\$549) and AM52 (\$699) are a Class A FET design and use more standard ferrite core transformers.

Each design features a flagship multipattern model (the AM52 and 62) and a less expensive cardioid-only model (the AM51 and 61). The 52 and 62 have two-sided diaphragms to allow multiple patterns (cardioid, bidirectional, omni and, on the 62, supercardioid), while the single-pattern 51 and 61 employ single-sided diaphragms.

All of the AM Series models feature a brass capsule with a diameter of more than an inch, a 3-micron gold-evaporated-on-mylar diaphragm, and a gold-plated center element, which works like the



Alesis' GT AM62 multipattern tube condenser

old "whizzer cone" speaker designs to enhance high-frequency and transient response by creating a very small acoustical resonance circuit. Each mic also offers a 10dB pad and 75Hz highpass filter with a 12dB/octave slope. It is nice to find the pad and filter even on the 51/61; many competitive mics do not include those. The 52 and 62 also have pattern selector switches, and the 62 has an additional cardioid/supercardioid switch.

The FET mics require 48V phantom power to operate, while the tube models come with a power supply and special cable. (The cable runs from the mic to the power supply; a standard XLR connector on the power supply con-

nects to the rest of the world.)

The AM Series mics come in heavy-duty, hard cases and include slipcover "socks" to protect the bodies when not in use or when left set up on stands overnight. The tube mic cases are particularly nice, including spots for carrying the power supply and cable, along with a shock-mount. (Swivel mounts are standard with all AM models.) The mounts have a full range of motion, which is very useful in obtaining proper placement with large microphones. All in all, the accessories are luxurious for microphones in this price range.

THE VOCAL SESSIONS

For my review, GT supplied a pair of AM62s and a pair of 52s. The AM Series is heavily touted for vocal applications, but I did try them on instruments, too.

I first tested the AM Series on a touring singing group of ten Tibetan nuns. The group was recorded at two San Francisco studios: Outpost and D'Cuckoo Soundware Farms, home of producer Candice Pacheco. At the first session, at Outpost, the nuns were sitting on the floor in two rows facing each other. A number of mics were used, including the AM52s and 62s, AKG 414, Neumann U67, and AKG 3000. The mics were placed between the rows of nuns, faced alternately such that each nun had a mic facing her.

Outpost engineer David Nelson said his first impression of the AM52 was that it was "crispy," which he feared would make the tracks sound "artificial." However, as he soloed the various mics to adjust for the best blend, he looked up several times when he liked the sound of a soloed mic and found it was the 52. Over the course of the session, Nelson became increasingly enamored of both the 52 and the 62, also citing

BY LARRY THE O

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their off-axis rejection, which was vital in such a setup.

Pacheco, too, liked the GT mics, using them again at the session in her studio, which she also engineered. To allow the greatest flexibility in mixing, she wanted the nuns miked individually. That session started with the same mic setup as at Outpost, but a series of solo and duo prayers was also recorded with the 52 set to the bidirectional pattern, a nun on either side of it.

"The nuns voices were really a challenge," Pacheco said. "They all had a very pronounced resonance at 4 kHz, since they barely move their mouths and mostly sing through their noses. Another challenge in the recording is that they not only chanted but played instruments, which bled through on their vocal tracks.

"Both the GT mics handled these problems better than the other microphones we used. There was noticeably less bleedthrough, especially on AM62s, than the other microphones. The AM62 handled the 4kHz resonance much better and had a more warm sound while still retaining the crispness. The AM52 also had very nice response, and for the price I think they are good microphones if you are on a budget. I was really impressed with the AM62 and am planning on purchasing one."

I set up my own comparison test for vocal recording, pitting the 52 and 62 against an AKG 414B/ULS, which is in roughly the same price class, and a Neumann TLM103, which costs three to four times as much. The mics were fed through an Earthworks Lab102 mic pre-amp, converted to 48kHz/24-bit digital by a Panasonic DA7 mixer, and recorded at the full 24-bit resolution by a Mark of the Unicorn 2408 running AudioDesk software. Playback was monitored through Genelec 1031A loudspeakers.

I recorded myself and singer Dian Langlois so that I had both male and female voices to compare. The most important performance aspect of vocal microphones is not usually accurate, transparent pickup, but a good match between the character of the mic and the sound of the particular voice. Thus, it is no slight to say that the frequency responses of the AM52 and 62 are not flat.

Not surprisingly, there was greater clarity and evenness in the TLM103 than any of the other three, but the differences between the 414 and the GT mics were mostly in their character. The sound of the AM62 had some high-end

roll-off and low-end boost, which is typical of many tube microphones I've heard. This tended to nicely soften my voice, which has a somewhat harsh nasal quality that is exacerbated by most vocal mics. Dian's voice sounded great through the 62 when she was belting it out, though I did detect a bit of splatter in the high-mids when she hit strong notes.



The AM52 Class A FET

In contrast, the AM52 has a prominent rising response, which sounded wonderful and breathy when Dian sang a soft ballad but produced a good deal of sibilance on my voice. In fact, I found that I had to sing off-axis to the 52 to avoid the headphone feed singeing my ears. By way of comparison, the 414 landed squarely between the 52 and 62, with a flatter high and low end, but a bit of boxiness in the mids. My little test served mostly to reinforce the notion that few vocal mics are suited to every need; the 52 and 62 worked great with the right voice match and poorly when the strongest characteristics of the voice played into a weakness of the mic. The 414 came out as the best all-around, but the trade-off was that it was never able to attain the pristine cleanliness of the TLM103, the rich warmth of the AM62, or the airiness of the AM52. After doing the bulk of the comparison with all of

the mics set to cardioid, I tried some of the other patterns, starting with supercardioid. The 52 does not have hypercardioid or supercardioid patterns, but the 62 offers a supercardioid pattern. The off-axis response of the 62 in this pattern fell off more smoothly than some hyper- or supercardioids I've tried. This means that there was less tonal change when Dian or I moved around while we sang, but the rejection was not as tight as some other mics.

When I experimented with the bidirectional setting, I was surprised to find that the rear pickup of both the 52 and 62 sounded noticeably different than the front, with less low frequencies and a bit more high-mids. I did not find anything as noticeable between the front and rear of the 414 or TLM103 when set to bidirectional pickup. Although this could be beneficial if you are using the pattern to pick up ambience from the rear, it would be problematic if you were using it to record two vocalists singing together while standing on opposite sides of the mic.

I also tried the GT mics for speech, reading from a little-known book by Robert Louis Stevenson. In this application, the 62 was the clear winner, as the 52 created a sibilance problem. Again, a different voice could produce another result. The 62, however, produced a rich, articulate sound that was quite satisfying.

RECORDING INSTRUMENTS

Having put the mics through their vocal paces, I set them to work on instruments. The results were exactly what I predicted from the outcome of the vocal tests. For drum overheads, the 62s worked well with jazz playing and yielded a sort of rolled-off, British sound for rock. The 52s were a little too aggressive for me as drum overheads; both they and the 62 presented some distortion on the cymbals (which I hear from almost all mics I use for drum overheads except DPA/B&K and Earthworks). However, that same bite proved advantageous when I put the 52 on snare. I also liked the 52 quite a bit on dumbek, as I like to hear the sound of my hands on the head very clearly articulated—the 52's rising high end accomplished that nicely.

At composer/keyboardist Peter Drescher's Twittering Machine studio, I tried both GT mics on his 1927 Steinway baby grand piano, feeding the mics through a Studio Technologies preamp into a Panasonic SV-3800 DAT. The 52's high end was too strident for Drescher's

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FIELD TEST

mellow piano, but the 62 was lush and full, producing the most pleasing sound Drescher has gotten recording that instrument. In this trial, the mics were placed inside the piano, but the same brightness that made the 52 unsuitable in this situation could make it ideal for a mid- to far-field miking approach, providing compensation for the air absorption of high frequencies.

The 52 proved to be a better performer when we recorded some of Drescher's bells and ethnic percussion; however, close-miking loud instruments like agogos sometimes resulted in a bit of "splatter" (sounding like slight high-mid- to high-frequency distortion) in the high end.

The most interesting instrumental test, however, was when I put the GT mics on my vibraphone and compared them to a pair of Earthworks ZX30 small-diaphragm condensers, which are squarely in the same price class. Although I have yet to find anything that tops the ZX30 for this sort of acoustic recording, the AM52 did better than I expected in producing a sound that was bright but did not overly accentuate the transient of the mallet hitting the bar. The 62, predictably, produced a softer, mellower tone, which would be great for ballads. However, neither produced the pristine clarity and pinpoint imaging of the ZX30.

The GT Electronics AM Series microphones are solid all-around performers and a very good value. As with most Alesis products, they are excellent for their intended applications and serviceable for a number of others. The AM52 is quite bright and seemed to work best when not very tight on the source, while the AM62 had exceptional warmth but less "air" in the very high frequencies.

It is important to have a variety of microphones in one's cabinet, even if only for voices, but that quickly becomes an expensive proposition. The GT AM Series mics provide a means of broadening the mic selection to match a given vocalist or ensemble without breaking the bank. At these prices, one could easily end up buying one of each.

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Larry the O has been a contributor to Mix for 15 years. He's hoping to get some sleep soon.

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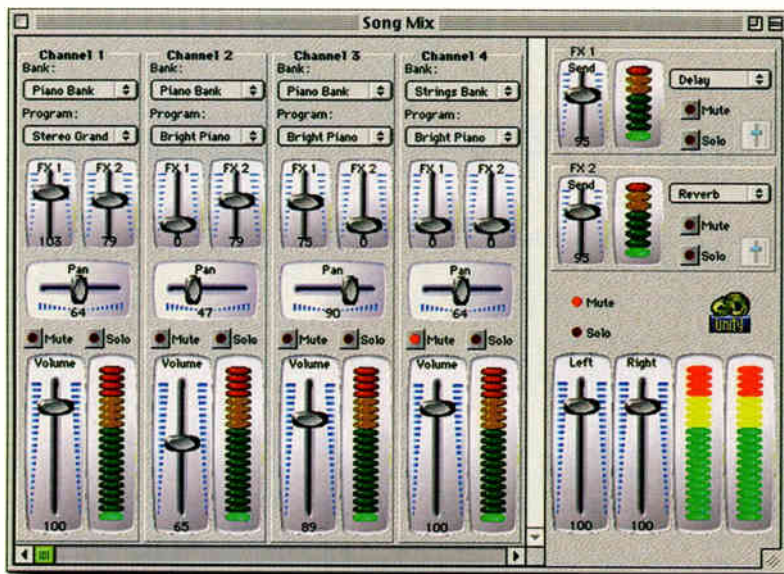
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Unity's mixer features mute/solo, panning and effects send functions.

There's no better illustration of the past, present and future of synthesis than the comparison of two booths spotted at the last Winter NAMM show in Los Angeles. The majority of Monster Cable's floor space was devoted to Keith Emerson's towering Moog modular, a 15-foot analog shrine, while nearby BitHeadz was running its powerful synth and sampler software on a tiny Mac laptop. There's no purpose here in comparing the sonics of the two installations, but suffice it to say the BitHeadz Unity DS-1, at \$449, is an economical and expressive computer-based synth and sampling solution that's about 14 feet shorter than the Moog, while sporting some features the revered rack doesn't offer.

Incorporating the same software synth engine found in the Retro AS-1 program (\$259), Unity DS-1 runs sampled sounds through subtractive (analog) synthesis oscillators, filters and envelopes to create one very expressive package. There are a number of memory management controls to harness (unless one just buys lots of RAM and CPU to feed the energy-hungry

Unity), but both endeavors are well worth it to build a software synth and sampler desktop this powerful.

POWERFUL, FLEXIBLE FEATURE SET

Unity DS-1 is a host processor-based sampling solution for Macintosh and PC offering what hardware-based samplers do and then some, sans the hardware. An ultimate scenario is to have lots of expensive, dedicated RAM and CPUs that hardware samplers provide, but Unity's tools for portioning out and handling memory resources in sufficiently amped host computers provide an economical and memory-bendable solution. Compared to limited keyboard samplers, Digi-design's \$1,295 SampleCell II card or the estimated \$700 price tag of a new hardware/software sampler package BitHeadz is planning to co-release with E-mu later this year, \$550 for Unity and some more RAM is an attractive sampling option.

Sampler, synthesizer, MIDI sound module and sound design tool are all name tags that apply to

Unity. The powerful sampler engine can import all major formats, record mono and stereo samples direct to disk and load new samples without interrupting current play. SoundFonts, Downloadable Samples (DLS), Akai S1000 and SampleCell II instruments are automatically mapped when imported to Unity, and if up to 128 samples stacked up per MIDI note isn't enough room to express yourself, then maybe you should seek audio counseling. Drag-and-drop importing and exporting are supported—each sample assignable with its own volume, tuning, pan, start/stop point, effects send, envelope and mute settings—and Unity's sample-linking mode provides a memory-savvy way to share multisamples within banks to maximize RAM and hard drive space.

The synth engine in Unity turns multisamples into oscillators and runs them all through a deep selection of Retro filters, modulation routings and envelopes to create some very expressive sounds. There are 13 great-sounding filter types to choose from, including 1, 2 and 4-pole lowpass and highpass, resonant and state-variable notch filters. MIDI clock-lockable LFOs, four continuous MIDI controllers per program and an arpeggiator also make this a very versatile music and audio environment.

As a flexible multitimbral module, Unity can work seamlessly with many integrated MIDI/audio programs, like Steinberg Cubase VST/24 and Digital Performer from Mark of the Unicorn. Layers, splits and real-time control of all Unity parameters are possible via MIDI commands, and now all Unity outputs can feed directly into Cubase and Digital Performer to be mixed and effected directly within a master mix. Sharing the new ReWire technology that connects Steinberg ReBirth's individual audio tracks to Cubase, individual Unity tracks can now also show up as digital mixer tracks available for VST plug-ins.

BY RANDY ALBERTS

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Similarly, Digital Performer users can now split up to 34 audio tracks from Unity with the MAS 2.0 plug-in, and Unity's included OMS, FreeMIDI and ASIO drivers allow users to control Unity directly from within programs like Cubase, Performer and Opcode Studio-Vision Pro.

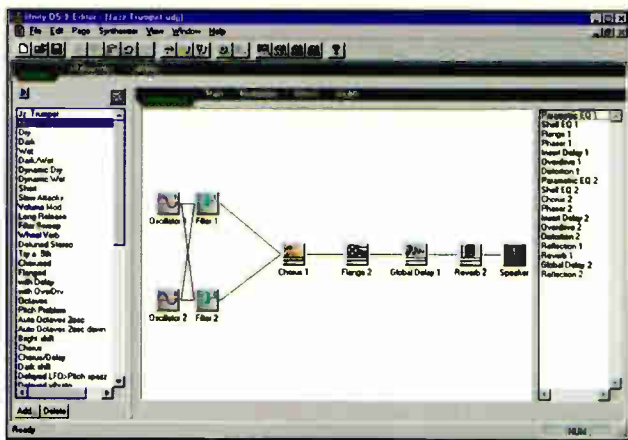
Unity's included digital audio recorder and editor interface provide a host of useful sampling and sound design features, though not as extensive as those found in programs like BIAS Peak or Sonic Foundry's Sound Forge. The easy-to-use sample-edit tools do make slicing, looping and dicing up new sounds a snap, though, and the ability to keep everything in the digital domain when recording and creating AIFF samples directly to hard drive within the computer is good for bypassing even the nastiest SCSI chain or format conversion bottleneck.

UP AND RUNNING

Unity installs quickly and includes up to 250 MB of good built-in sound banks that range from very useful to repetitive, though the long pull-down list of banks

and programs provides a fast way to audition sounds and is a good starting point for beginning new sample libraries. Unity's various applications can be opened and closed individually to maximize system resources, and though this modular approach has its strong points, having to open and quit so many programs and change memory allocation for each tends to get cumbersome when operating near a host computer's memory limitations and sharing the CPU with other music and audio applications. Running Unity and Steinberg Cubase VST/24 on the same 350MHz Macintosh G3 with 64 MB of RAM worked well enough with only occasional performance lags or MIDI latencies, and, of course, both programs performed much better after doubling the G3's RAM to 128 MB. Of course, BitHeadz encourages even higher RAM amounts for prime performance.

Dialing through Unity's sound banks



Unity's visual routing display allows drag-and-drop editing of synth and sample routings.

and programs is a breeze, as is moving to and from the various component modules within Unity DS-1. I found it simple to import, load and trigger sounds quickly with either a MIDI keyboard or using Unity's onscreen keyboard and arpeggiator section, and recording, editing and saving samples directly into the Mac couldn't be simpler. Imported files supported are AIFF, WAV, SoundFont 2.0, DLS, Sound Designer I/II, Digidesign SampleCell I/II, Akai S1000, S1100 and S3000 disc formats; and grabbing sections of wave-

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FIELD TEST

form displays and quickly creating new loops is easy. AIFF, SDII, WAV and the native DS-1 output formats make Unity a good sampling platform for integrating with other audio and music programs.

Understanding and then creating DS-1 samples, multisamples, programs and banks takes no time, especially for those accustomed to the same nomenclature from Korg and other earlier synth families (samples, multisamples, programs, banks, etc.). Numerous enhancements have been introduced up to and including Unity Version 1.2.1, such as full ReWire support for Cubase, expanded Akai sample disc support and a new selectable Output Attenuation control. Full ASIO support has been added; there's a new drum mode; and an Envelope Complete control allows envelopes to complete regardless of how long a note is held down—great for expanding drum parts.

I used Unity as a responsive, non-MIDI-latent live sample and synth instrument, a waveform importer/editor/exporter, a multitimbral MIDI module and an effects processor, and I found good results in all of these applica-

tions—provided memory resources were under control. Having to monitor CPU and RAM performance constantly to ensure 32, 16 or even 12-voice polyphony and audio integrity with Unity gets old after a while; purchasing additional RAM may cost extra effort and/or money, but it's well worth it. To be able to open up as many filters, modulator routings, effects and oscillators as is possible and needed per program without worrying about memory is a good thing.

MODS TO THE MAX

Each of Unity's applications works stand-alone or combined with others, and each shares resources when two or more are used together. The Keyboard is handy for triggering chord clusters when tweaking sounds without a MIDI controller around, and creating intricate arpeggios, dense MIDI layers and snapshot mixer scenes is a snap with the MIDI Processor and Mixer, respectively. There's also a handy Status window that visually displays host CPU and RAM vital signs, and a nifty Effects interface, but the Unity Editor module is where most of Unity's sampling action happens.


The Editor includes all of Unity's

sample importing and editing tools, and provides the ability to record digital samples directly to hard disk. Basic cut, copy and paste tools intuitively slice and dice up the sample waveform display, and a decent list of sample effects—fittingly called Munge—offers up normalize, gain change, EQ, reverse, distortion and other mungies that process even large sections of audio pretty quickly. The Editor's key and velocity map interface is quite easy to navigate when experimenting with sample layers, splits and velocities, and looping and manipulating sounds with Unity's auto-start/stop looping tools makes it easy to come up with something new each time.

Though Unity's MIDI data is not available at the MIDI through/out port, its MIDI Processor offers plenty of interesting things to do internally with MIDI. A visual routing display provides a handy drag-and-drop way to build complex synth and sample routings quickly, with colorful icons for oscillators, filters, effects, etc., as well as the connection routing lines between them. The MIDI Processor responds to MIDI program change commands to call up wildly different setups on a dime for live playing, and up to four real-time MIDI continu-

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ous controllers can be assigned alongside an FM oscillator source menu per program. There are 13 filter types (up to two per program), and up to 52 modulation routing destinations per program can be memorized. The arpeggiator section of the MIDI Processor program is a simple yet creative interface that encourages experimentation with its live note interpretation controls and ability to lock arpeggiator tempo to external MIDI sync.

The Keyboard interface is simple enough, with its easy pull-down menu access to the built-in sound libraries, and a 9-octave range and ability to trigger all 12 standard chord voicings from the mouse or QWERTY keys make the onscreen keyboard a good temporary replacement when a MIDI controller is inconvenient, such as when using Unity on a laptop. The size of the onscreen keys can be dragged to most any onscreen scale or dimension, and clicking from front to back of each key controls velocity.

The Mixer is a straightforward layout that provides volume, pan, mute, solo and global effects controls over 16 MIDI channels, though only being able to display ten mixer channels horizontally makes for some monotonous scrolling when the user is jumping frantically between more than ten dense MIDI tracks at a time. Mixer scene snapshots in Unity can instantly recall setups, and the Mixer levels reflect incoming MIDI track levels from sequencers in real time.

The Effects module is a dual stereo effects processor, and stereo and mono digital recorder, that handles two stereo insert and two stereo global effects processor effects per voice. It also provides control over multiple EQs, stereo reverb and reflection algorithms, choruses, flanges, phasers, distortion, and stereo and mono delay lines, the latter being synchronizable to external MIDI clock. All of the various Unity interfaces are consistently designed and a pleasure to "touch," with no onscreen fader or button latency following the mouse.

IN CONCLUSION

BitHeadz's Retro AS-1 has been around long enough to benefit from a few more upgrades than its new sample sibling, and the Unity DS-1 is new enough to offer advanced features while still smoothing out a rough edge or two. For instance, the program's filters can powerfully route one or both oscillators' outputs through one or both self-resonating filters per program, but pushing the host computer's memory limits quickly chokes polyphony down

into the low double-digits. The number of modulation routings and self-oscillating resonant filters available is limited only by host CPU and RAM, yet Akai and SampleCell instruments and programs import without envelope or filter settings intact (BitHeadz promises a fix for this in the near future). It's an easy-to-use sample- and waveform-editing tool that provides an all-digital signal path when recording AIFF files direct to disk, yet there's no support of third-party audio plug-ins.

All things considered, at \$449, Unity DS-1 deserves very high marks for being a viable, powerful, intuitive and economical alternative to investing \$1,000 to

\$2,000 or more for a keyboard or desktop-based hardware solution. With enough RAM and speedy computers, Unity and its Retro synth engine (\$259) can effectively replace a sampler while saving the user enough money to buy a bunch of sample CD collections, a new mic or more RAM.

BitHeadz Inc.: 4400 Capitola Rd., Suite 202, Capitola, CA 95010; 831/465-9898, fax 831/465-9899; www.bit-headz.com. ■

Randy Alberts is a musician, engineer and writer who has previously been on staff with Mix, Electronic Musician, Keyboard, EQ and Radio & Records.

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POWER TECHNOLOGY DSP•FX VIRTUAL PACK

SIGNAL PROCESSING PLUG-INS FOR DIRECTX

Although it's true that there's no such thing as a free lunch, the DSP•FX Virtual Pack from Power Technology provides a hearty smorgasbord of tasty effects for a modest price. This varied package of 11 plug-ins includes versions for SAW32, SAW32 Plus and SAW32 Pro, as well as DirectX versions that run under Sound Forge, Cakewalk, Cubase-VST, WaveConvert Pro, Ensoniq PARIS, WaveLab, Cool Edit Pro, Samplitude 2496, Samplitude Pro, Logic Audio, SEK'D Red Roaster and Sonic Foundry's ACID.

Along with the usual delay, chorus, reverbs and EQ, DSP•FX packs in some tools that usually reside in the high-end sound designer's kit: pitch-shift, autopan, analog tape flange, tremolo and the Aural Activator (an Aphex-style enhancer). Finally, there's a tool called the Optimizer, a dithering tool with a noise-shaping op-

can be easily configured by mapping controller values to DSP•FX parameters. You can use an external hardware controller or send commands from a software sequencer using the DSP•FX MIDI Patcher, which is supplied as part of the Virtual Pack.

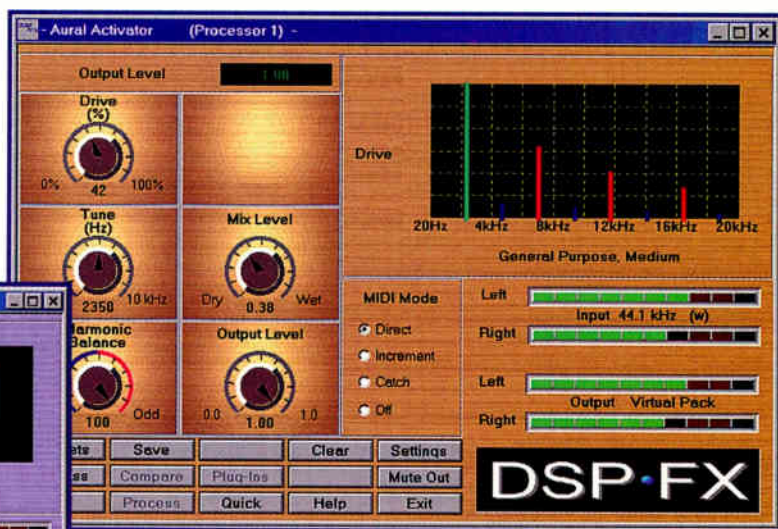
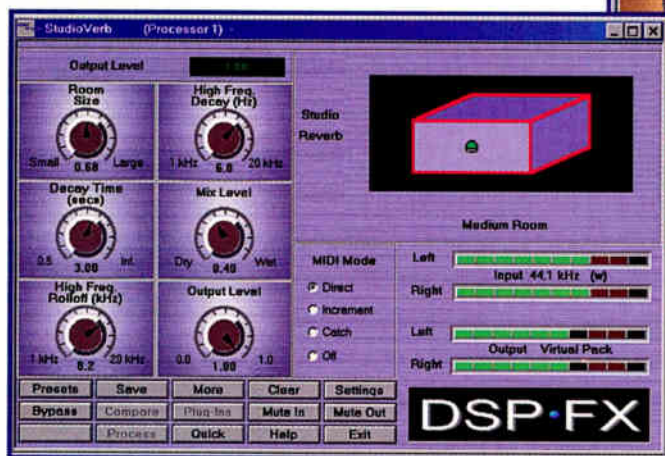
DSP•FX Virtual Pack ships in the usual "cardboard box with a four-color sleeve," but the only thing inside is a CD-ROM in a cardboard sleeve that's attached to the back of the box. And rather than glossy printing on the disc, there's a rubber-stamped title—an amusing commentary on the emerging irrelevance of packaging in information transfer. The real stuff, the manual and data, is on the

seven days with all features intact; no demo mode here.

SETTING UP THE LABORATORY

DSP•FX requires a fairly meager system to run. Minimum is a 80486 running Windows 95 or NT, about 10 MB of drive space, a mouse, VGA with at least 640 x 480 resolution, and a Windows professional audio card or multimedia sound card. You'll need a MIDI card if you want to use MIDI controllers.

For this review, I used a customized Pentium II, 300 MHz with 128 megs of RAM. This machine had a Lexicon System 12t as well as a Digital Audio Labs Digital I/O



The StudioVerb (left) and Aural Activator are two of the plug-ins included in the DSP•FX Virtual Pack.

tion—not the usual fare for inexpensive plug-ins, but an essential element for accurate audio editing.

There's also a stand-alone version that allows you to process and re-record .WAV files directly. If you like to use MIDI controllers, DSP•FX

threats about reduced tech support if you don't send in your registration, either. Just install and send your info via e-mail to register and get a password. In the meantime, the plugs run for

disk. No odd-sized pieces of paper with

card. For my digital-to-analog converters, I routed the digital outs of both cards through a Lexicon PCM 80. That made it easy to check reverbs; I would just put the PCM 80 in Bypass mode when I wanted to hear the DSP•FX reverbs. Monitors were Genelec 1030As in the early stages of listening, but later on, I sent a digital feed to our control room switcher so I could listen through the Apogee AD-8000 and

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check comparisons with Pro Tools plug-ins. This gave the added advantage of listening in a very quiet space, since we have no tape machines, fans or hard drives in our control room. I also stuffed a MIDMan Winman 4 x 4/s in the box.

Since we had Cakewalk Pro Audio 8, Sound Forge 4.0, SAWPlus32 and Cubase VST on the machine, it was easy to check for compatibility across environments. The DSP•FX plug-ins have a similar look and feel running in those four packages, but due to variations in the host implementation, accessing the plugs can be confusing. (This is true for all DirectX plugs, not just DSP•FX.)

There's a quirkiness to the interface for first-time users. For instance, in Sound Forge, selecting a plug in the DirectX menu causes the full-screen inter-

sources started to run low. It also varied with the programs themselves, although, since I wasn't working with the very latest revisions of all host programs, making strict comparisons among them in this regard would not be useful data. On the whole, though, the graphic stability of Cakewalk Pro Audio 8 with DSP•FX plugs was the best of the bunch.

RUNNING DSP•FX

Reverb is the most hotly debated topic on audio e-mail lists (after dither, copy protection, and of course, the eternal platform wars). DSP•FX has two reverb plug-ins, an older one called AcousticVerb and a more recent offering named StudioVerb. They're quite different sounding: StudioVerb is reminiscent of some of the presets for the Pro Tools LexiVerb plug-in, while AcousticVerb is a bit more transparent.

You'll find a useful tutorial in the manual concerning the AcousticVerb

tion. Make it a simple "click on the knob; drag right and/or up to increase and drag left and/or down to decrease." Repeated circular motions with the mouse or trackball are contributing factors to tennis elbow, or as we call it, "trackball elbow."

Like most of the other plug-ins, the primary graphic window shows common parameters such as room size, mix level and output level, while a secondary window appears when you click on "more," showing more esoteric functions including density and early and late reflection intensity for the AcousticVerb plug.

Still other plugs use coarse "factor" parameters in the primary window that turn into finer adjustments in a secondary window when a fader is pushed or a button is clicked. It's an intuitive approach and one that makes quick work of the learning curve for the DSP•FX Virtual Pack.

Another innovative element is the Quick Pick button. It's useful for grouping subtle variations so you can easily compare them when, for example, lis-



DSP•FX's Chorus plug-in (above), and the Optimizer, a look-ahead peak limiter with dithering.



face to flash momentarily, then minimize itself as an icon on the taskbar, leaving yet another window open with Preview and DSP•FX Up buttons. If you want to hear the effect, you'll need to select Preview, and to bring up the interface window, click on the toolbar icon or hit DSP•FX up. It's confusing at first, but Paul Titchener of Power Technology explains that DSP•FX uses dual-threaded processing. This dedicates the effects processing to one thread and the user interface to another, offering more efficient handling, especially in dual-processor environments. On our machine, I did find that the graphics would sometimes jump about in preview mode and that playback would slow down and loop the selection more slowly if system re-

plug-in and unless you read it, you'll probably wonder why there's a box with colored bars and varied patterns expanding and contracting as you change the settings. For the visually-oriented novice, it's probably a good thing to know that early reflection intensity is depicted as a blue bar on the front of the red box, while late reflection intensity shows up as a blue bar toward the back. For more experienced users with eye fatigue, the parameter knobs should prove more than sufficient. Unlike similar programs with circular knobs for parameter control, you'll need to move the mouse in an arc to increase or decrease the values. The one strong user interface suggestion I'd make is to change the way these func-

tening to the 8-band Parametric EQ. Just beware of looping in this mode—I switched from a nice vocal boost preset on a sax riff to a 15 dB, 60-cycle cut and for a moment, I thought someone had set off blasting caps at the other end of Music Row.

PROCESSING:

.WAV FILES AND LIVE MODE

You don't have to use DSP•FX Virtual Pack via DirectX or SAW-format plug-ins. There's also a stand-alone program included that allows you to import a .WAV file for processing. It doesn't loop, so you'll need to click "start" again and again for short files, but it's a quick

—CONTINUED ON PAGE 224

MIX[®] MAGAZINE PRESENTS

MASTERING'S FINEST STUDIOS

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World Radio History

MASTERING'S FINEST

GEARING UP FOR A MULTIFORMAT FUTURE



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BY DAN DALEY

ous and elite of professional
audio's arts, mastering is in the
midst of massive change on

several fronts. In terms of technology, a multiformat future is already here and promises to become even more complex, requiring constant evaluation and re-education on the part of facility owners and engineers. DVD-Audio will now compete with SuperAudio CD and proprietary formats for stereo and multichannel audio, not to mention having to fight it out with Web-based formats like MP3 or Flash memory-based formats on the horizon. Mastering engineers will have to make choices carefully based on which way the markets move and on their own gut instincts, knowing that not every new idea will go the distance (remember DCC?). And the black boxes—the hardware tools of the trade—continue to proliferate as quickly as the formats they serve. They will never replace the golden ears (the real software of mastering) that set mastering engineers apart, but they are making mastering facilities resemble aircraft cockpits as much as studios.

But nowhere is the change more ap-
parent—and more difficult to assimi-

late—than on the business side of the equation. There are simply more mastering facilities now than ever before. This growth has been driven by a number of factors, most notably the dramatic expansion of the independent record label market, which in turn was boosted by the proliferation of cost-effective personal recording technology. With an estimated 30,000 new album releases annually in the United States alone—and over half of them released on independent labels—mastering has followed the growth pattern of the recording market. But with that growth came new economies of scale. Recording budgets began shrinking, and mastering's own economics headed the same way, with new facilities based around new, lower-cost yet still-powerful engines accommodating the reconfigured record business.

The response to the altered business climate has been as diverse as the technologies that are driving it. Some mastering facilities have created tiered rate structures for different types of projects and budgets. Others have moved into new creative areas, such as

authoring for DVD and new media. Then there are those that are carefully blending expensive technologies with the new generation of more affordable systems, creating hybrids that are complex but which add an even wider variety of possibilities to the sonic stew.

While there may be more facilities than ever before, the top end of the market has seen consolidation, a trend that all industries in and out of pro audio have been affected by in recent years. In the last year alone, Metropolis of London acquired New York's Sterling Mastering, and, in a move involving considerably less distance but with equal significance, Emerald Entertainment in Nashville bought nearby Masterfonics, a two-location recording complex whose foundation was the mastering business built by former owner (and still the facility's chief mastering engineer) Glenn Meadows.

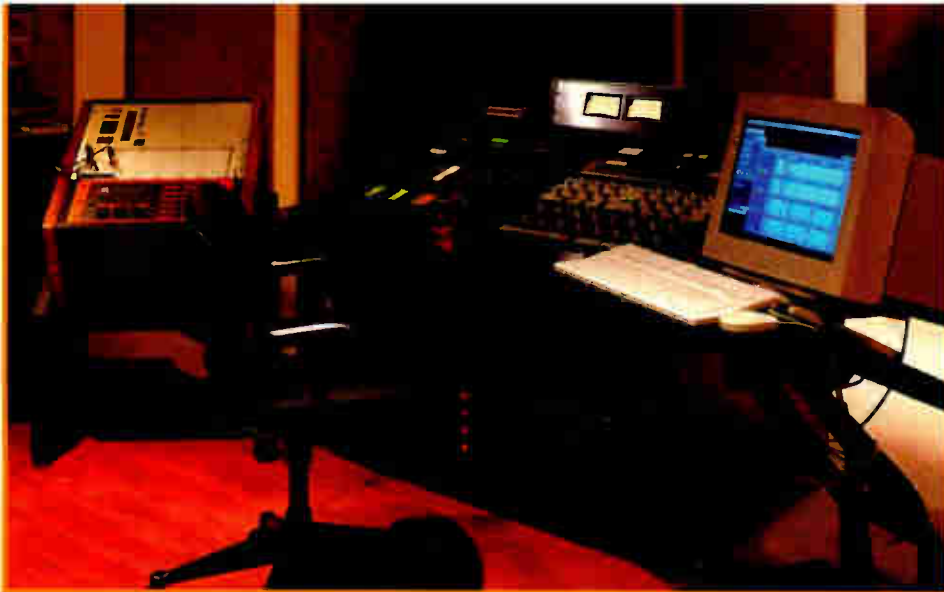
With the various technological and economic issues simultaneously affecting mastering, it's not unreasonable to predict that the discipline will experience fundamental operational changes in the coming years. But what almost certainly will not change is the indefinable magic that is such an integral part of the mastering engineer's domain. Mastering engineers are the finishers, the fixers, the tweakers of last resort. They can take a project and define its sound, sometimes even find an identity in a work of art that may have eluded those who spent a year or more of their lives creating it. Getting a record on radio is often as much the work of a mastering engineer as it is the promotion departments. In the future, mas-

tering will no doubt also involve making it sound good on the Internet.

This supplement to *Mix* spotlights many of the finest facilities that the art and science of mastering has to offer as the professional audio industry heads into the 21st century. They are a diverse group, as befits the way in which the mastering niche itself has evolved in the last several years. We hope it will prove to be a valuable resource for choosing a mastering facility.

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Absolute Audio Inc.

Absolute Audio was founded in 1991 by brothers Jim and Tom Brick, who have spent their entire adult lives in the professional audio industry. Both worked their way up through the ranks, so to speak, with stints at several major New York City recording and mastering facilities. Their cumulative experience and acumen resulted in the creation of Absolute Audio, one of the leading mastering studios in the U.S., with a credit list that belies its relative youth. The Absolute Audio team, along with mastering engineer Leon Zervos, has done exceptional work for clients such as Aerosmith, 'N Sync, INXS, Eddie Palmieri, Plácido Domingo, Whitney Houston, KRS-One, Francis Dunnery, Ace Frehley, Big Punisher and the Black Crowes.

The facility's reception area is warm and modern. Down the hallway lined with Gold and Platinum albums are two mastering suites. Both rooms are trimmed with rosewood, as are the mastering consoles themselves. The place, simply put, has style. But here, personal style merges harmoniously with client preferences, says Zervos, whose broad and varied career as a mastering engineer in his native Australia has continued to expand since he joined the company in 1991.

"The philosophy has always been to have the best gear possible, whether it's analog or digital," he explains, noting some of the more exotic pieces on hand, including NTP 179-170 comp/limiters, Manley Variable-MU comp/limiter, Z-Systems MEQ-1 equalizer and Sontec

MFES-432C/6 with ½dB steps. "You want to have the best of the old and the new—to meet the tastes of our many clients, whether for CD or vinyl, which is still in high demand. Keeping that kind of balance in our technology has been critical to our success over the years."

The same sort of balance exists in the facility's overall operations, says manager Melissa van Twest. "We do a lot of crossover work here; a single day can go from Aerosmith to 'N Sync to Big Punisher," she says. "From dance to rock to rap and back again. So we have to be flexible and make the clients as comfortable as possible. At the same time, there are schedules to be met, and we pride ourselves on keeping the company running very efficiently."

Absolute Audio's chosen approach to technology means they are watching the emerging DVD-Audio situation closely, and mastering for that format, with attendant 5.1 monitoring capability, is planned for the near future. In addition, the studio's Prism converters have been upgraded to 96kHz capability, and its three Sonic Solutions workstations are 24-bit capable.

"There's a big difference between being cutting-edge and being trendy," observes Zervos. "We definitely feel as though we've been able to stay on the leading edge of technology, yet stay focused on what we know works. As a result, our clients keep coming back. When the industry undergoes major shifts, we'll be ready for that, too."

Facility Specs

Owners: Jim Brick, Tom Brick. **Manager:** Melissa van Twest. **Engineers:** Jim Brick, Tom Brick, Leon Zervos, Brad Johnson (technical and mastering). **Mastering Consoles:** Custom-designed mastering consoles (2). **Media Systems:** Sonic Solutions 24-bit workstations (3), Ampex ATR w/solid-state and tube electronics (2). **Formats Serviced:** CD, analog cassette, vinyl. **Signal Processing:** Avalon 2077, Sontec MFES 432-C, Maselec MEA-2, Manley Variable-MU, Z-Systems MEQ-1, Weiss, Prism and Apogee converters, Neve 32254e. **Monitoring:** Dunlavy SC IV. **Amplification:** Crown Reference 1. **Other Services:** Neumann VMS 70 disk cutting lathe



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PHOTO: PETER FIGEN

Capitol Mastering

Capitol Mastering shares the 40-plus-year heritage of one of the most American of pro audio success stories: Capitol Records. The Capitol complex opened in a futuristic new building in the heart of Hollywood in 1956, and has since hosted some of the most treasured recordings in music history, from Frank Sinatra to the Beastie Boys. Through the years, the facility has made good on Capitol Studios' commitment to remain on top of current technology.

Under the direction of noted engineer and vice president of Capitol Studios Michael Frondelli, and mastering manager Pete Papageorges, Capitol Mastering installed what has become a networked web of Sonic Solutions systems. The network connects all four mastering suites and two production rooms (and a CD-R/cassette dupe room); fiber-optic lines link the studios, and acoustics have been upgraded throughout. Part of Capitol Mastering's ongoing technology upgrades in the past decade include being one of the first mastering facilities to implement ISDN transmission capability with EDNet, initially used on the Sinatra *Duels* recordings.

More recently, the studio added mastering engineer Robert Vosgien (Bush, No Doubt, Phil Collins) to the staff and has constructed two new mastering suites, as well as a 5.1-capable surround suite, conceived of by Frondelli and designed by Vincent Van Haaff and the Capitol Studios Design Engineering Team. There is also a new stereo mastering suite that is expand-

able to 5.1. The rooms are outfitted with custom consoles incorporating discrete Jensen 990 technology and Sontec EQs, linked to the facility's Sonic network. Capitol Mastering is prepared for DVD-Audio projects, and the massive Capitol catalog is in the process of being digitized, making it immediately accessible to reissue in the new format. Capitol Mastering continues to provide services for a wide range of contemporary artists, including Everclear, Phil Collins, Tony Bennett, Big Bad Voodoo Daddy and No Doubt.

"As part of the EMI family, we share a history of advanced recording technology with great studios like Abbey Road, Olympic, the Manor and the Townhouse," explains Papageorges. "The mission has always been to be on the cutting edge of technology and to vertically integrate that capability back to the family of record labels and to all our clients."

Currently, Capitol Mastering is in the process of testing and developing compression algorithms for data transmission and watermarking technology, which will form the future of online audio. "It's more than just a matter of history—it's a matter of diversified experience," says Papageorges. "Our staff comprises a unique combination of veteran recording engineers capable of preserving, mastering and converting audio to all digital formats. Our goal is to provide our clients with the latest technological advances, with a quality of service reflecting over 50 years of combined experience. With one of the best technical staffs in the field of mastering, no project is beyond our reach."

Facility Specs

Owner: Capitol Records. **Manager:** Pete Papageorges. **Engineers:** Ron McMaster, Robert Vosgien, Bob Norberg, Matt Chalecki. **Production Engineers:** Evren Gokner, Dave McEwen, Odea Murphy, Jay Ranellucci, Kevin Bartley, Kevin Hayanga. **Mastering Consoles:** all custom w/discrete electronics. **Media Systems:** Sonic Solutions (six w/networking), PCM-9000, Neumann lathes (2), ISDN (w/EDNet and aptX systems). **Formats Serviced:** analog, vinyl, CD, CD-R, DVD, Enhanced-CD. **Signal Processing:** Sontec, Neve, Waves, Tube Tech, dB Technologies. **Monitoring:** Genelec, Hafler, Capitol custom w/JBL components. **Amplification:** Hafler. **Other Services:** Capitol echo chambers (designed by Les Paul), DVD authoring, CD/cassette duplication.



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PHOTO: ROBERTO MAIA

Fullersound

Fullersound was founded in Miami in 1986 by Michael Fuller, and in a few short years established itself as South Florida's leading mastering facility. Both Michael and his brother Rod, who joined him in the business a year later, had spent years as engineers in the area, and their first facility was located on-site at Criteria Studios, where much of what passed through that fabled facility was mastered by the Fullers.

This year, Fullersound moved to a new, dedicated space. The company offers a comprehensive range of mastering, editing, sequencing and processing services, including analog and digital processing for CD, cassette and vinyl mastering; PQ and ISRC coding for all formats including 1630, DDP Exabyte and PMCD; sound restoration with Sonic Solutions' NoNoise system; and CD, CD-R and cassette replication.

The facility's client list goes a long way in explaining its success, says Michael Fuller. It's become a home to a wide variety of musical cultures and genres—from rock to hip hop to dance to Latin to country—and over the years Michael has mastered hits for Rod Stewart (including the classic single "Do Ya Think I'm Sexy"), the Bee Gees, Eric Clapton, Andy Gibb, Seven Mary Three and Julio Iglesias. Rod has worked with an equally diverse array, including Yngwie Malmsteen, INOJ, 2 Live Crew, 69 Boyz, Frankie Negron, Salsa Kids and Roberto Carlos.

In addition, Fullersound's South

Florida location has been at the center of the explosion of music coming from Latin America and the Caribbean.

Artists such as Ivy Queen, Strings, Sergio Vargas, Noelia, Chayanne, Shakira, MDO, Christian Castro and Disque Debs (Guadeloupe label) have kept the studio involved with this fast-growing area, even as work continues with a broad range of other acts, including Florida-based artists like Trick Daddy, Crease, Sister Hazel, the Bellamy Brothers and others. Fullersound also recently remastered the re-release of the classic *Dirty Dancing* soundtrack, which Michael Fuller first mastered in 1987.

Fullersound's facility is comfortable, intimate and completely state-of-the-art, with a diverse collection of high-end digital and analog signal processors, Neve digital DTC mastering and Cybersonics analog MC-2000E consoles, and Dynaudio Acoustics M-3 monitors. The studio also boasts a private lounge and dining area for clients.

Mastering is as much a passion as a profession at Fullersound. "Collectively, we have over 32 years at the art of mastering records between us," says Michael Fuller. "This has never been a part-time job for us. This is all we do. Sometimes mastering is a gentle enhancement of what clients bring us; sometimes it is a major improvement. And sometimes it is major surgery. Whatever the need is, we do our best to make it all it can be. The bottom line is, we put our name on it every day."

Facility Specs

Owner: Michael Fuller. **Manager:** Margie Curry. **Engineers:** Michael Fuller, Rod Fuller. **Mastering Consoles:** Neve DTC digital, Cybersonics MC-2000E analog. **Media Systems:** Sonic Solutions w/NoNoise, Studer and MCI analog, Scully LS-76 Cutting Lathe w/Ortofon DSS-821 and 732 cutter heads and Ortofon GO 741 cutter amps. **Formats Serviced:** CD, CD-R, analog, 24-bit DAT, 1630, DDP Exabyte, PMCD, Mitsubishi X-80. **Signal Processing:** Weiss EQ-1, Weiss DS-1, Valley Dynamap 730 Dynamics Z Systems Z-1SRC Sample Rate Converter, Aardvark House Sync, Lexicon LFI-10, Lexicon 20/20 A/D, Apogee DA-1000E-20 D/A, Sontec MES 432C, Sontec DRC-200, Ortofon CPS-741 EQ, Ortofon STL-85Z, TC M5000, Bobby SR/A, dx. **Monitoring:** Dynaudio Acoustics M-3 mains, UREI 812-A, Yamaha NS-10M and NS-1000. **Amplification:** Beyer, KE, Axi Amp. **Other Services:** CD-R, CD and cassette replication.



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World Radio History



PHOTO: ED FREEMAN

Future Disc Systems

With seven mastering, cutting and production suites, Future Disc Systems is one of the largest mastering facilities in the U.S. Founded in 1981, the company has built a reputation based on its staff of mastering, production and editing personnel and their dedication to highly integrated mastering systems based on proven leading-edge technologies. They work regularly in a wide range of media, including vinyl, CD and DVD.

All the suites are networked via a Sonic Solutions server system. "The significance of this to our clients is that the central production studio can offload projects from each of the main mastering studios' hard drives," explains Gary Rice, president and operations manager for Future Disc. "This capability ensures that the integrity and purity of each client's project will be maintained throughout every process step for the entire time it's in the facility."

Working with a customized Class-A discrete analog console and a combination of analog and digital signal processing gear, mastering engineer Steve Hall has attracted such clients as Alanis Morissette, Chris Isaak, George Harrison, Goo Goo Dolls, Jane's Addiction, Madonna, Rod Stewart, The Pretenders and Tom Petty. "The technology and the tools required for mastering today's music are a challenge to keep up with," says Hall. "But the music still needs a human

Facility Specs

Owners: Gary Rice, president and operations manager; Steve Hall, vice president and chief engineer.
Managers: Laura Hall, traffic/production manager; Renee Goodwin, production coordinator. **Engineers:** Steve Hall, chief mastering engineer; Kris Solem; Kevin Gray; Pete Thomas; Egan Rive (digital design engineer). **Mastering Consoles:** Custom Class-A, Weiss digital 24/96k. **Media Systems:** Pacific Microsonics HDCD, Sonic Solutions (HDSP+), Sony PCM 1630, Sony PCM2800 and PCM500 DAT, Foster D-10 DAT, Parasonic 3700 DAT, custom Class-A Neumann Zuma disc cutting system, Sony DMR4000, DAE 2000 editor, custom Arjes ATB and Steer tape transports. **Format Services:** CD, vinyl, DVD. **Signal Processing:** Various tube and state-state EQ and compression, Weiss processing, TC Electronic M5000, Pacific Microsonics Model 1, dB Technologies 122 A/D converters and dB 3000 sample rate converters, Wadia WA4000 A/D converter, Focusrite converters, Summit compression and EQ. **Mastering:** custom mastering with JE, RCA, Altec, Tannoy components; Coherent Audio custom masters in vinyl mastering suite; Amplifier, Monitor, Chain, Haller Turntable, Audio Ober and Boulder Gear Services; CD-R and DDP mastering.



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World Radio History

touch, and my goal has always been to keep the emotion and the excitement in the music."

Mastering engineer Kris Solem uses a Weiss digital console in a custom desk with onboard analog and digital processing. His talents have graced recordings for Master P, Motley Crue, Spice Girls, Jennifer Paige, Snoop Dogg, Sneaker Pimps and Silk the Shocker. "I try to learn a little something new every day," says Solem. "My work mixes traditional methods with pushing the limits of the technology. That little 'something extra' is often found where you'd least expect it. You have to understand the medium and be willing to experiment."

Cutting engineer Kevin Gray has become known as one of the most highly regarded vinyl mastering engineers in the U.S. Working with a customized Class-A Neumann/Zuma disc cutting system, Gray has mastered key club remixes for Madonna, the B-52's, BT and Cornershop, as well as a long and growing list of major vinyl reissues, including records for Al Green, The Cars, Deep Purple, the Doobie Brothers, The Doors, The Eagles, Paul Simon and Elvis Presley. "It seems as though the obituary for the phonograph record was written a bit prematurely," quips Gray. "Rap, dance and the audiophile markets are keeping me really busy cutting lacquers. Who could have predicted that?"



PHOTO: CRAIG CALIN

Georgetown Masters

Georgetown Masters has truly attained legendary status within professional audio's mastering community. Since its founding in 1985, company president and chief mastering engineer Denny Purcell has mastered over 500 Gold and Platinum recordings, and it's been estimated that at any given time, half the records on the country music charts, 60% of the inspirational charts and one-fifth of the pop chart recordings were mastered at Georgetown. In 1997 and 1998 Georgetown mastered 49 Number One singles on the *Billboard* charts, and in 1998 Georgetown had more records at Number One than any other facility of any type, earning it *Billboard's* Mastering Facility of the Year award.

The facility is visually stunning (the studio walls are lined with vintage and rare guitars and amplifiers) and reflects Purcell's own heritage as a former musician who entered pro audio as a protégé to producer Norbert Putnam, working at Putnam's Quadafonic Sound Studios in Nashville in the 1970s. Purcell has always seemed to have an uncanny ability to adopt future formats ahead of the curve, and he is a regular contributor to industry panels and papers that help shape the evolution of mastering and pro audio (Purcell and Georgetown introduced the HDCD format in 1995). Small wonder that the client list includes artists such as Chet Atkins, Mark Knopfler, Garth Brooks, Mary Chapin

Carpenter, Vince Gill, Donna Summer, Neil Young, Trisha Yearwood, Tom Petty, Paul Simon, Phish, Yo-Yo Ma and Keith Richards, many of whom have returned repeatedly to Georgetown. In addition, Purcell is one of the founders and a prime motivating force behind the Mastering Engineers Guild of the Americas (MEGA), which was formed in 1998 to assist artists, producers, engineers, record labels and manufacturers sort through technology issues; and deliver a better, more accurate product.

Georgetown offers a range of services in its two mastering suites and two digital editing rooms, including CD mastering and premastering, analog and CD-R duplication, digital format conversions, archiving and offline services such as digital editing and sequencing.

Georgetown also has a unique and sumptuous THX-certified nine-seat screening room on site, equipped with an Improved Definition Television projector, a wide-screen aspect ratio controller and, of course, a popcorn and candy counter. The theater has hosted numerous music video premieres and adds an element of show business to the facility. But, as Purcell also notes, "It's just part of the philosophy here that ours is a multimedia industry now, and you have to respect and address the fact that sound is part of so many things in entertainment and in life."

Facility Specs

Owner: Denny Purcell, president. **Manager:** Don Cobb; Cassandra Strahan, asst. manager. **Engineers:** Denny Purcell, Jonathan Russell, Carlos Grier, Eric Conn. **Mastering Consoles:** custom analog and digital for 2-channel and 5.1. **Media Systems:** Sonic Solutions, SADiE. **Formats Serviced:** all formats and media are accepted and produced. **Signal Processing:** Pacific Microsonics HDCD, GML, Fairchild, Avalon. **Monitoring:** Duntech Sovereigns 2001. **Amplification:** Pass X-1000. **Other Services:** HDCD masters, paper hot lava, groove personnel, guitarorama, whatever you want.



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PHOTO: TOSHI YOSHIMI

Bernie Grundman Mastering

Bernie Grundman—the engineer and the facility—has been synonymous with quality mastering for more than 30 years. Avuncular and quietly authoritative about so many aspects of sound, Grundman cut his mastering teeth during the 15 years he ran the mastering department at A&M Records, Los Angeles. He has become an icon in the industry since opening his own facility in 1983, and with current mastering associates Chris Bellman and Brian Gardner, he has built up a client list that includes many of the music industry's elite, such as Michael Jackson, Janet Jackson, Ry Cooder, Quincy Jones, Kenny G, Ani DiFranco, Dr. Dre, Alanis Morissette, Heavy D and Joni Mitchell. A number of producers and engineers—including Quincy Jones, Bruce Swedien and Glen Ballard, to name but a few—have come to regard Grundman and his associates as critical to their record-making process.

Grundman respects the way in which the professional audio industry has evolved and progressed but has never found off-the-shelf technology solutions satisfactory. The three consoles are all custom-designed, single-ended discrete pieces of equipment with no active or passive isolation devices—a simple and direct signal path is the operative philosophy, and that extends to the custom-built signal processing and custom-configured Tannoy components in the monitoring systems in the four mastering suites.

"The whole point is to put as little

in the way of electronics into the sound as possible," explains Grundman, who began his career with the jazz label Contemporary Records after arriving in Los Angeles from Phoenix in the 1960s. The same goes for his aesthetic approach: "We don't try to impose our musical sensibilities on the client. But we do try to use our musical experience to get inside the client's dreams."

In May 1997, Grundman opened a mastering studio in Tokyo based around the talents of engineer Yazuman Maeda. It seems to be working—last year the facility was represented on 22% of all records on the Japanese charts. And both the Hollywood and Tokyo locations will be undergoing significant expansions this year: Designed by Grundman with partner Karl Bischof and with additional input from fellow technical wizard Beno May, each of the facilities will be adding a 5.1 surround-capable room, with a 6-bus custom console and 24-bit/96kHz capability for DVD-Audio recordings.

At the same time, however, the Hollywood facility's Scully lathes remain quite active, continuing Grundman's tradition of covering all the major formats with the same degree of quality and attention to detail. "The trick is to give the client the highest degree of quality but to do so with a minimum of processing and a minimum of artistic coloration," says Grundman. "We accomplish that with a combination of clean electronics and an open mind."

Facility Specs

Owners: Bernie Grundman, Karl Bischof. **Managers:** Claire Chene, Nickie Walters. **Engineers:** Bernie Grundman, Chris Bellman, Brian Gardner. **Mastering Consoles:** All custom-built discrete Class-A with custom electronics, wiring and processing. **Media Systems:** Studer Dynavis, Sony PCM 1630, Panasonic 3709, 3800 DAT, Alesis ADAT, Studer A80 analog 2-track, Scully vinyl lathes (2). **Formats Serviced:** Analog, CD, DAT. **Signal Processing:** All custom or highly modified analog and digital processing, including Waves digital signal processing. **Monitoring:** Tannoy components with custom-designed enclosures and crossovers. **Amplification:** Crown GC703. **Other Services Offered:** Archiving and mastering for DVD-Audioed multichannel mastering will be in place by mid-1999.

Bernie Grundman
MASTERING HOLLYWOOD • TOKYO

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PHOTO: ERIC STERN

The Kitchen Mastering

The Kitchen Mastering is thriving in one of the country's most eclectic music centers. Located near Chapel Hill, N.C., which gave the music world some of its earliest alternative artists, writers and producers, including Mitch Easter, Don Dixon and, more recently, Squirrel Nut Zippers and Ben Folds Five, The Kitchen maintains the family values implied in its name. The facility is owned by couple Brent and Kirsten Lambert, who divide engineering and management duties. Brent attended the University of Miami's pioneering music production and engineering program in the early 1980s and moved to Chapel Hill shortly thereafter. During stints as a session musician and assistant engineer, Lambert was exposed to mastering as an art, a science and a business when he followed some of the records he played on or engineered through that process in L.A. and New York. He realized that mastering was a missing link in Chapel Hill's own development as a recording center.

The Lamberts began The Kitchen in 1991 at home, literally in the kitchen. But the business has grown rapidly and the facility is now located in a 2,000-square-foot building in the suburb of Carrboro. Designed by John Arthur Design Group, the studio features bass trapping and optimized speaker placement, as well as a mixture of RPG treatments: Abffusors in the front wall, ceiling and side walls to eliminate early reflections; diffractals along the rear wall;

and Flutterfree on the rear side walls to provide even energy distribution around the main listening and client reference position. The combination of the custom trapping and diffusion provides the room with complete sonic accuracy.

The interior design also reflects an eye for detail—described as “comfortable yet modern, like a cool living room.” The studio has touches like Tibetan rugs and original artwork and photography on its walls. Brent Lambert’s mastering suite is warm and intimate, with red floors setting off the custom-made cabinetry.

“The location is fantastic in terms of its comfort and climate, and its proximity to one of the world’s most interesting musical communities,” says Kirsten Lambert. “But mastering isn’t as location-intensive as recording, and we’ve been getting mastering projects in from all over.” Those projects include mastering for a wide range of current hit artists and up-and-comers, including Squirrel Nut Zippers, Juliana Hatfield, Southern Culture on the Skids, Athenaeum, Cravin’ Melon and Whiskeytown.

The Kitchen holds its own in the upper tier of the mastering market, but it also represents the shifting geographic and cultural emphasis that’s been taking place in the music industry over the last decade. “We have a real affinity for all kinds of music and musicians,” says Brent Lambert. “And this area truly fosters an ability to bring the best out in all of us.”

Facility Specs

Owners: Brent and Kirsten Lambert. **Manager:** Kirsten Lambert. **Office Manager:** Chris Stephenson. **Engineer:** Brent Lambert. **Mastering Console:** Focusrite 300. **Media Systems:** SADIE 24-bit workstation, Studer 1/2-inch analog, Ampex ATR102 1/2-inch analog, Exabyte DDP, Alaris M-20. **Formats Serviced:** CD, analog, CD-R, 1630, DAT, 24/96 Encoded ADAT. **Signal Processing:** Pacific Microsonics converter, Apogee and Prism 24-bit converters, Lexicon 300, TC Electronic M5000, Millennia, Avalon, Focusrite, Aphtron custom high-resolution digital clock. **Monitoring:** Datttech Sovereign 2001, Amplitude Control.



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CIRCLE #096 ON PRODUCT INFO CARD



PHOTO: YUKIO G

Masterdisk

Masterdisk is one of the most enduring mastering facilities in the world. Founded in 1973 as a division of PolyGram, the company was soon acquired by current owner, president and CEO Doug Levine, who over three decades has built it into a mastering powerhouse. The formula is simple: a combination of classic and new technology, with a staff of veteran mastering engineers. The result is an enviable roster featuring a broad array of artists, including DMX, the Beastie Boys, Monica, Ben Folds Five, Whitney Houston, Garbage, Shawn Mullins, Luscious Jackson, Mariah Carey and Slayer, to name just a few.

"One way that you can service such a wide variety of artists and types of music is to have the kind of people whose experience covers an equally wide spectrum," Levine explains. He notes that several of Masterdisk's staff engineers have nearly as many years in the industry as the facility itself. For instance, Tony Dawsey has been with Masterdisk for 21 years, and engineer Howie Weinberg has been there for 22. Along with engineers Andy van Dette, Roger Lian and surround engineer Drew Anderson, Masterdisk has nearly a century's worth of experience to offer clients.

The six-room facility includes a recently completed dedicated 5.1 surround mastering suite and a DVD authoring suite. The overall effect points to

efficiency, leading-edge technology and ergonomics, yet with a homey ambience, which Levine says is an important part of the entire experience at Masterdisk. "Compared to what it takes to record and mix a record, people aren't going to be spending the same amount of time at a mastering facility," he says. "But you want to be able to extend the same kind of familiar, at-home experience that they had when they were recording. You want people to be comfortable when they're here, because mastering is just as critical a stage of an entire project as are any of the others." In fact, one of Masterdisk's three lounge areas is probably as large and spacious as many recording studios, complete with its own pool table and Internet access.

Comfort and attention to amenities work hand in hand with the facility's technical capability. In addition to highly modified vintage Neumann mastering consoles, the seven networked Sonic Solutions workstations and a large array of analog and digital signal processing gear, there is the recently implemented Daikin Scenarist and Sonic Solutions DVD Creator authoring and graphics systems, positioning Masterdisk for work in new formats. "It's that combination of technology, our efforts to keep the studio at the edge of the industry, and our experienced staff that have contributed to our success for so many years," says Levine.

Facility Specs

Owner: Doug Levine. **Manager:** Stephanie Goldberg. **Engineers:** Tony Dawsey, Howie Weinberg, Andy VanDette, Roger Lian, Drew Anderson. **Mastering Consoles:** Neumann (3), Yamaha 02R (for 5.1). **Media Systems:** Sonic Solutions (7 w/Media-Net), PCM 9000, Ampex and Studio analog 2-track, Neumann lacquer (2) and copper cutting lathe. **Formats Serviced:** analog, PCM 9000, 1630, CD, CD-R, DVD, DTS, vinyl. **Signal Processing:** Avalon EQ, Z Systems, Neumann, Harmonia Munch, wide range of D/A/D converters. **Monitoring:** various, including Dornach Sovereigns, KRK. **Amplification:** various, including Cells Performance. **Other Services:** DVD authoring, compression, navigation and graphics.



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PHOTO: RON NELSON

Masterfonics

Masterfonics, a well-known recording studio, started as one of the most well-known and well-regarded mastering facilities in the world over the past two-and-a-half decades. Founded in 1973, Masterfonics introduced to the Nashville market the first Neumann SAL-74 cutter control rack, the first Ampex ADD-1 digital cutting delay and the first Zumaudio cutting control computer, as well as Nashville's first Ampex ATR-102 ½-inch analog deck. In 1981, Masterfonics brought in the first JVC DAS, with the first JVC digital mastering console following two years later. Staying on top of technology has remained a constant at Masterfonics, right through the introduction of the CEDAR system for restoration of archived recordings.

The first two mastering suites at the facility were designed by Tom Hidley and are mirror images of each other acoustically; the third mastering studio, added in 1996, was designed by Michael Cronin. Under the guidance of engineer Glenn Meadows (a two-time Grammy winner and multi TEC Award nominee who owned the facility from the 1970s through its acquisition in 1999 by Emerald Entertainment), Masterfonics gained a global reputation, working on scores of Gold and Platinum records for a diverse array of artists, including Shania Twain, LeAnn Rimes, Randy Travis, Delbert McClinton, Widespread Panic and Bananarama, as well as for producers and engineers

such as Tony Brown, Jimmy Bowen, Roger Nichols and Tim DuBois.

"Technologically, this has always been an evolving facility, and it continues to be," observes Meadows. "We've been doing a lot of high-end restoration work on archived masters and some pretty leading-edge rock and techno records, as well as country and jazz, all of which are pushing the edges of digital audio. But we're also still one of the only houses in Nashville that regularly cuts vinyl recordings, for dance mixes, radio and for jukeboxes. You can really see the scope of our capabilities in both our technologies and our client base."

Meadows is particularly vocal about the benefits of large monitoring environments, as reflected in two of the suites' monitoring systems: Hidley-Kinoshita speakers powered by Cello and FM Acoustics amplifiers; the rooms are virtually flat with no tuning. Still, Meadows attributes Masterfonics' continued success to an emphasis on talent and a staff who have over 50 years of combined experience in both the field and at Masterfonics.

"What we've learned during that time is how to walk the increasingly fine tightrope-line between providing the artist with all the room possible for artistic integrity on the one hand, and providing those artists with the kind of guidance that will give them a competitive record," Meadows states. "And that's really the thing that makes a mastering facility great."

Facility Specs

Owner: Emerald Entertainment. **Manager:** Lois Walker. **Engineers:** Glenn Meadows, Benny Quinn, Tommy Dorsey. **Mastering Consoles:** custom. **Media Systems:** SADiE workstation, PCM 9000, CEDAR, Studer ATR ½-inch, etc. **Formats Serviced:** analog vinyl, CD, CD-R, Enhanced CD, HDCD. **Signal Processing:** Soeris, Aphogee, Drake, CG-LC900 parametric controller. **Monitoring:** Hidley-Kinoshita. **Amplification:** Cello, FM Acoustics



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PHOTO: JAMES F. WILSON

MasterMix/MasterVision

MasterMix opened its doors just off Nashville's Music Row in 1983. Last year, after mastering hundreds of Gold and Platinum records for a wide range of artists and producers (including Alan Jackson, Sarah Evans, Lucinda Williams, The Mavericks, Allison Moorer and D.C. Talk), MasterMix unveiled a brand-new, \$2 million-plus facility a few doors down from its original location. MasterMix's new incarnation, which is sure to keep the company at the forefront of the industry, encompasses traditional mastering and much more: A sister business, MasterVision, specializes in authoring, MPEG-2 compression and encoding, and other mastering and premastering services for the burgeoning DVD format.

The new MasterMix/MasterVision facility, which opened in September 1998, was designed by Russ Berger Design Group and houses two mastering suites, two production studios and the DVD mastering/authoring room. The two audio mastering suites are equipped with custom mastering consoles designed by MasterMix engineer Ken Love and Grant Carpenter of Gordon Instruments. Fourteen months in design and development, they incorporate a Class-A, high-current preamplifier. Monitoring is by huge PMC BB-5 speakers in MasterMix founder and owner Hank Williams' suite, with Ed Long CMF-100 speakers in Love's suite. Digital authoring and post-production specialists Tracy Martinson and Mike

Poston are already servicing a wide range of DVD and other new audio formats in their suite, which is equipped with a Panasonic DA7 console and Sonic Solutions' DVD Creator.

MasterMix is now using Prism Sound AD-2 and DA-2 96kHz/24-bit converters, as well as Daniel Weiss digital EQ, level control and dynamics systems. Four of Williams' six Sonic Solutions workstations can also handle 96kHz digital audio and will be used for archiving incoming projects, including those that are still intended for the CD standard of 44.1kHz/16-bit for their initial release. "The record labels are becoming aware of what's going on with the technology," says Williams. "We want to have high-resolution master versions of projects ready for them when they decide to release in other formats."

MasterMix and MasterVision are emblematic of the way in which the mastering market is changing and adapting to new formats, many of which cross multimedia lines. For that reason, the facility also includes a DVD-Video playback theater. "The line between audio and video is blurring with DVD," Williams observes. "DVD is going to be the likely platform for the immediate future, so we have to address the fact that mastering houses are going to be home to video and graphics people in the future, along with audio engineers. We started with music and we'll always be about music, but we're also staying on the edge of new technologies, too."

Facility Specs

Owner: Trio Entertainment. **Traffic Manager:** Sandy Lee. **Engineers:** Hank Williams, Ken Love, Ronnie Thomas, Donnie Bott, Al Willis, Tracy Martinson (DVD), Mike Poston (DVD). **Mastering Consoles:** custom design w/Class-A, high-current preamplifiers; Panasonic DA7 (DVD). **Media Systems:** Sonic Solutions (four of six operating at 96 kHz/24-bit). **Formats Serviced:** analog, CD-R, DAT, PMCD, DVD-Audio, DVD-Video. **Signal Processing:** Weiss Avalon, Manley, Sontec, API. **Monitoring:** PMC BB-5, PMC BB-1, Ed Long CMF-100. **Amplification:** Briston, Crown. **Other Services:** DVD authoring, Nonstop, MPEG-2 video encoding, DVD project consultation.



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PHOTO: ALAN MCLAUGHLIN/IRHA

Music Annex Mastering

Music Annex Mastering is part of one of the Bay Area's most venerable professional audio institutions. Over the past 26 years, Music Annex has covered all bases in music recording, post-production, tape duplication and, now, DVD authoring. Mastering at Music Annex was transformed six years ago at the company's Menlo Park location (south of San Francisco) by senior engineer Tom Carr, renowned in the Bay Area for his tracking and mixing skills, as well as his mastering finesse.

The octagonal mastering suite at Music Annex is based on a Michael Blackmer acoustical design. It is large and spacious, with a purposely wide sweet spot between the room's soffit-mounted JBL 4430 bi-radial speakers and the Audix Nile 10 midfield monitors, which Carr uses primarily. Based around a custom console, a 24-bit Sonic Solutions workstation and some select signal processing gear, the suite's technical philosophy is "less is more."

"We tend to be very minimalistic in our approach to mastering," Carr explains. "We have some extremely high-end processing gear, including Massenburg EQ and a Summit 2-channel tube compressor, as well as Apogee A-to-D/D-to-A converters. But the point is to limit the signal run to the shortest it can be and still accomplish the goal. Often we're not even running the signal through a patchbay. Cable runs are just long enough to get from point to point.

The result is that minimal equals musical—there's very little interference with the audio that comes in the door."

Carr says that the mastering division's location within the main Music Annex complex of studios has significant benefits for clients. "It's not unusual for some clients to decide to track, mix and master all within the same facility, often with me as the engineer at all stages of the project. That brings a certain kind of consistency and familiarity to the production, which you can't get elsewhere. The client gets a tremendous amount more control over a project, and they really like the idea of being able to complete a project start to finish under one roof."

Of course, many clients come to Music Annex just for the mastering. Over the years they've worked on many releases for Windham Hill/BMG, including the Windham Hill 20th Anniversary two-CD set, *Sanctuary*; as well as recordings by Nightnoise, Paul Hanson, Tracy Silverman, Pearl Jam, Steven Halpern, Ronnie Montrose, Doc Kupka and the Strokeland Super Band, Louie Belson, and many other releases covering all musical genres.

The bottom line, says Carr, is that Music Annex Mastering has achieved the ability to give the client *options*: "Whether you've recorded all or part of your project here," he says, "or if you've just come for mastering, this is a room that translates extremely well to the outside world."

Facility Specs

Owner: David Porter. **Contact:** Debra Haney, Janice Iraci, Tim duFour. **Engineer:** Tom Carr. **Mastering Console:** custom—Mogami-wired. **Media Systems:** Sonic Solutions, Panasonic DAT, Otari MTR-15, Sony CD-R, Sonic Solutions DVD authoring system, Avid Express. **Formats Serviced:** analog, CD, CD-R, DVD DLT. **Signal Processing:** Massenburg, Summit, Apogee. **Monitoring:** JBL 4430 bi-radial Audix Nile 10. **Amplification:** Hafler, Yamaha.



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PHOTO: JOHN SOARES

Northeastern Digital Recording

Celebrating its 15th anniversary next year, Northeastern Digital Recording (NDR) has maintained a unique status in both the pro audio and music industries, consistently remaining on the cutting edge of technology. Before major labels had committed to the compact disc format, NDR was one of the first facilities in the world to offer digital mastering and editing using the Sony PCM-1610 30 system. As the rise in catalog sales drove the pop music market, the facility started remastering a huge array of artists, including Frank Zappa, David Bowie, Bob Marley, Arlo Guthrie, Bruce Cockburn, NRBQ and Joan Jett, among many others. At the same time, NDR worked with an equally wide and impressive collection of contemporary and upcoming artists, including Alison Krauss, Richard Thompson, Morphine, Burning Spear, Kate and Anna McGarrigle, Bob Mould, Paul Winter, Medeski Martin & Wood, J. Geils and Magic Dick, Bill Morrissey, and Susan Tedeschi.

Historically, the company has been closely aligned with independent labels, which have fueled much of the music industry's growth in the last two decades. Through the mid-'80s, NDR helped pioneering labels like Rounder and Rykodisc launch their innovative CD catalogs. The critical importance of NDR's contribution to this market is underscored by Don Rose, president of Rykodisc, when he says, "Audio mastering by Northeastern Digital Record-

ing is the foundation upon which our reputation for high quality is built."

NDR has never been afraid to invest in new and innovative technologies. Recognizing the increasing role of computers in digital audio and multimedia, NDR was among the first to bring in the Sonic Solutions system in 1989. Armed with Sonic's NoNoise system and 24-bit conversion, NDR has created several historic CD retrospectives, such as Rounder's Jelly Roll Morton anthology and MGM's many feature film soundtracks.

NDR has also paced the industry's growth of hybrid formats. In 1991 NDR began offering PC and Macintosh write-once CD-ROM services. Several hundred CD-ROM projects later, NDR's services now include a wide variety of CD and DVD formats, including Hybrid, Mixed Mode and Enhanced. To complement its audio mastering, the facility also offers video, graphics and multimedia services.

What changes will the 21st century bring to NDR? "Our focus will always be audio, but now we have the expertise to put together all the pieces of a multimedia package," says owner/engineer Toby Mountain. "That means offering newer technologies like DVD, surround sound, Web streaming and MP3."

Each member of NDR's staff, led by Mountain, has the musical training and production experience to provide an aesthetic as well as a technical advantage.

Facility Specs

Owner: Dr. Toby Mountain. **Manager:** Anne Shepard. **Engineers:** Dr. Toby Mountain, Laurie Flannery. **Media Systems:** SonicStudio w/NoNoise (2), Sony PCM-1630, DMR-4000, Sony CDW-900E CD Writer, Tascam DA 45HR 24-bit DAT, Ampex ATR-102, Sony APR-5000 2-inch and 4-inch analog. **Formats Served:** analog, DAT, CD-R, Enhanced CD, DVD. **Signal Processing:** Dolby SR, Dolby A, dbx Types I and II, Neve 33609-c stereo limiter/compressor, Lexicon 990, TC Electronics, Jünger 401, Waves EQ, Traxx 8024 A/D converters. **Monitoring:** Genesys 10373, Avid. **Amplification:** Bryson 4B. **Other Services:** full CD and DVD replication packages.



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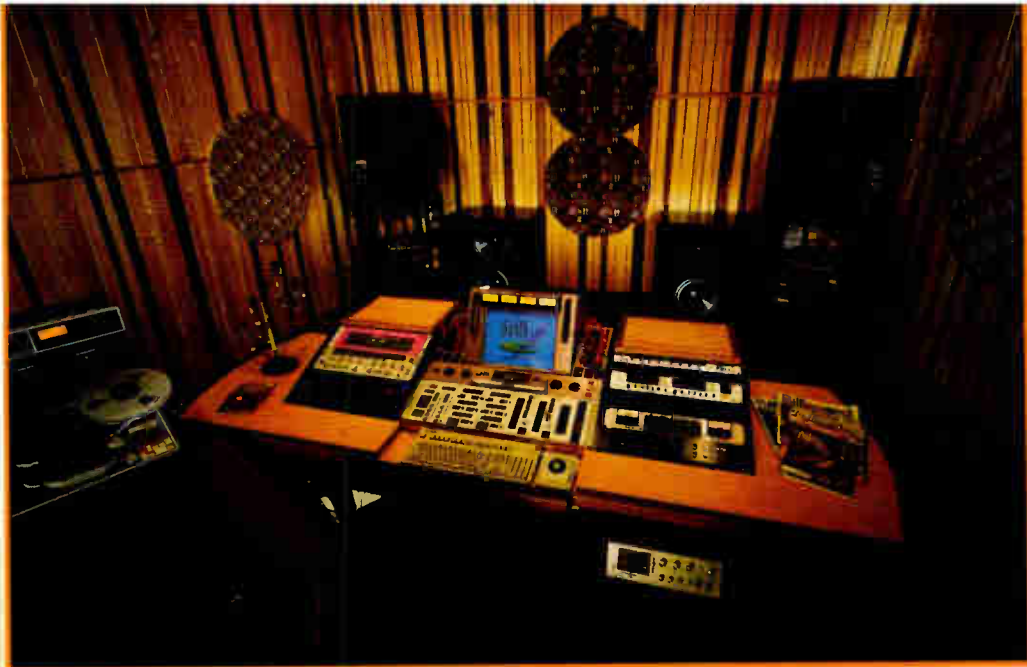


PHOTO: MITCH TOBIAS

Oasis Mastering

Founded in 1996 by veteran mastering engineer Eddy Schreyer, Oasis Mastering has quickly become known as one of the best in the business, amassing an impressive client list that includes Eric Clapton, Offspring, Pennywise, Korn, Tupac, Dave Hollister, XZIBIT and Jesse Powell.

Featuring two 18x24-foot mastering suites plus a production room, Oasis was designed by Schreyer and audio technology pioneer David Manley. Influenced by his former stints at such well-known mastering facilities as MCA, Capitol Mastering and Futuredisc, Schreyer set Oasis' focus on creating as precise a mastering and monitoring environment as possible, while maintaining a comfortable place to work.

As a result, each suite has an extremely high-resolution main monitor system consisting of Tannoy Dual-15s coupled with custom Aria dual subs, all powered by Hot House amplifiers. The suites, based around networked 24-bit Sonic Solutions workstations, feature mastering consoles designed by Schreyer and fabricated by Manley Labs. The desks feature a Weiss 88.2kHz digital workstation, state-of-the-art Avalon and Manley EQs and Weiss 96kHz 24-bit digital processing, along with Apogee, Manley and Stud-

Facility Specs

Chief Engineer: Eddy Schreyer. **Engineer:** Gene Grimaldi. **Manager:** Stephen Baerwitz. **Mastering Consoles:** Custom design w/Manley and Weiss electronics. **Media Systems:** Networked Sonic Solutions. **Formats Serviced:** Analog, digital, CD-R, DVD. **Signal Processing:** Manley, Tube-Tech, Weiss, Avalon. **Monitoring:** Custom, utilizing Tannoy dual-15s w/Aria dual-15 subwoofer system. **Amplification:** Hot House Mosfet. **Other Services:** CD, lacquer cutting, 5.1 surround mastering, complete DVD package.



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er converters.

Oasis recently made a major commitment to surround sound, upgrading both mastering suites to full 5.1 capability and partnering with DVD authoring giant AIX Media Group and producer/engineer Bobby Owsinski to form Surround Associates. The new company specializes in repurposing back catalog as well as current projects for release on DVD, and it allows Oasis to provide complete surround services to its clients. The partnership provides a solid, experienced production team that offers mastering, mixing and authoring to create the ultimate DVD package.

Schreyer looks philosophically at being at the forefront of technological change. "Professional audio is a lot more complicated today than it was back in the days of lacquer masters, when I first started my career," he observes. "But one thing that hasn't changed is the skill and talent that it takes to make a proper master. Oasis is not only the culmination of my many years of experience in the mastering field, it's also the result of just as many years learning what the clients want to achieve and then helping them achieve it. That's really what Oasis is all about—sonic quality and client service."



PHOTO: JOE GASTWIRT

Oceanview Mastering

Oceanview Mastering was born ten years ago, but that provides few clues to the depth of professional experience that resides within this two-suite facility in Los Angeles. Founder Joe Gastwirt is well-known throughout the professional audio industry from more than two decades of mastering work at such noteworthy facilities as Media Sound, Masterdisk, JVC and CBS/Sony.

Today, Oceanview Mastering offers the expertise of Gastwirt and his talented protégé Ramón Bretón, who have collectively worked on hundreds of Gold- and Platinum-selling masters for a diverse array of artists, including Neil Young, Pearl Jam, the Grateful Dead, Keb' Mo', Daniel Lanois, Bob Dylan's 1998 Grammy winner *Time Out of Mind*, 311, Phil Collins and Yes. "We have two or three Grammy winners pass through here every year," says Gastwirt, who, with producer Mark Linett, was nominated for a Grammy for the Beach Boys' *Pet Sounds* box set.

Designed by Gastwirt, Oceanview Mastering has two very comfortable and ergonomically efficient mastering suites outfitted with a large selection of choice analog and digital signal processing gear. The custom consoles are a pair of heavily modified Neumann SP-77/75s, which Gastwirt and noted electronics designers Todd Wilson and Pat Schneider re-engineered and built. The facility reflects Gastwirt's own approach to mastering: simple, precise and flexible.

"We configure our choice of technologies and creative approaches to the type of work that comes in from each project," Gastwirt explains. Decisions about digital and analog signal

processing and A/D conversion are based on what the individual project requires. But everything that passes through Oceanview Mastering goes by the simplest and most direct route, with a minimum of signal path to traverse and only through the highest-quality cabling available.

The mastering suites are fitted with an array of custom monitors and amplifiers, including ATC 100 speakers with custom 45Hz crossovers and 24-inch subwoofers, Martin Logan electrostatic speakers, and custom-modified Times One amplifiers. The studios are modeled on classic music recording rooms, incorporating slatted wood diffusors that

help re-create the recording studio atmosphere and contribute to a sense of creative continuity between the recording and the mastering processes. This is a philosophy that underscores Gastwirt's approach to the business: keeping the focus on the client and the project. "The technology is always subordinate to the vision that the client has for the music," Gastwirt says.

Oceanview Mastering intends to maintain its one-on-one feel into the future, even as the company looks to expand into a new facility sometime later this year. The next generation of Oceanview will also incorporate new technologies such as DVD-Audio and MPEG-2 encoding and compression, as well as 5.1 surround mastering capability. "The emphasis will be on maintaining a leading-edge capability but never losing the intimate connection we try to establish between ourselves and the client," says Gastwirt. "You don't want to change a way of working that's worked so well for so long."

Facility Specs

Owners: Joe and Ira Gastwirt. **Managers:** Ira Gastwirt/Mara Bushansky. **Engineers:** Joe Gastwirt, Ramón Bretón. **Mastering Consoles:** Neumann w/custom discrete electronics. **Media Systems:** Sonic Solutions, 1630, HDCD. **Formats Serviced:** vinyl, analog, CD, CD-R. **Signal Processing:** Sontec, NTP, EAR, Neumann, Weiss and Inore. **Monitoring:** ATC, Tannoy, Martin Logan. **Amplification:** Times One. **Other Services:** CD manufacture, mastering.



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PHOTO: RONNIE WRIGHT

Powers House of Sound

Powers House of Sound, which opened in 1997, is the product of Herb Powers' three decades of experience in mastering, including stints as an engineer at Frankford/Wayne Mastering and Hit Factory Mastering (where he also served as chief engineer for nine years). During that time, Powers built up a formidable clientele that in many instances dates back to his work as a DJ in several pioneering Manhattan dance clubs. It was there that he laid the foundation for a mastering philosophy that aims to make records "sound as good as they can in the real world, on the kinds of playback systems that people actually use, not only what you see in the audiophile magazines," Powers says. Powers' clients include Lauryn Hill, TLC, Mase, Puff Daddy, Babyface, Jay Z, Usher, Mariah Carey, Boyz II Men, Mary J. Blige, Brian McKnight, Will Smith, Jennifer Lopez, Toni Braxton, Notorious B.I.G., Kirk Franklin and Vanessa Williams.

Powers' mastering suite is equipped with a custom Neve DTC console modified with Prism equalization. Monitoring is via custom Richard Alderson Acoustics speakers and B&W speakers. A production/editing suite is equipped with a Sonic Solutions workstation, which is run by second mastering engineer Dave Kutch, who uses both JBL L7 monitors and a pair of near-field speakers of his own design. The mastering room was designed by Frank Commentale and Herb Powers.

While Powers has an extensive discography in R&B, hip hop, rap and urban, he stresses that he masters for the music, not for the genres, citing work on numerous film soundtracks—including *Men In Black*, *Dangerous Minds*, *South Park*, *Soul Food*, *How Stella Got Her Groove Back*—and the growing stream of independent rock records that are coming in to the facility.

"I have done a lot of work in R&B, which I happen to love," he says. "But what you want to achieve as a mastering engineer is to make whatever the music is sound the way it's supposed to, to both the artist and to the listener, which is why I put so much emphasis on mastering for the real world." As an example, he notes that his experience in dance clubs has taught him not to overemphasize lower frequencies on dance tracks. "What you have to understand is that clubs tend to boost bass frequencies to start with," he explains. "What you need to do in mastering for that kind of music is to make the bottom end as clear and definitive as possible, not louder. The club takes care of that."

The design of the facility combines mahogany and cherry wood paneling alternating with absorptive materials to create a comfortable and sonically accurate environment. "You're going to spend some intense and serious time in the mastering suite, and it's going to have a major effect on your record," he says. "You want to be comfortable, and we want you to be comfortable, too."

Facility Specs

Owner: Herb Powers., Robert Clivilles. **Managers:** Larry Lachmann, Angela Powers. **Engineers:** Herb Powers, Dave Kutch, Larry Lachmann. **Other Staffers:** T.J. Rogers, Steve Pekarik, Ackbar Buckley and Doris Garcia. **Mastering Consoles:** Neve DTC w/two digital, one analog inputs and Prism onboard EQ. **Media Systems:** Sonic Solutions, Sony DAE3000, Sony PCM-1630, Sony 7010 DAT, Sony PCM-R500 DAT, Panasonic 3800 DAT, Studer A820 2-track analog (2) CD-R. **Formats Served:** CD, CD-R, analog. **Signal Processing:** Massenburg and Prism EQ, dbx de-esser, Dolby Spectral Processing, Manly compressor/limiter, Boby multi-effects system. **Monitoring:** custom Richard Alderson Acoustics w/four bass drivers, four mid-bass drivers, four mid-range domed drivers and four domed tweeters per speaker, and B&W DM1200 near field monitors, white speakers. **Amplification:** Shure Work 2.1 (10), mixing 20,000 watts.

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PHOTO: PETER BARKER

Sony Music Mastering

Sony Music Mastering is part of the technologically and creatively diverse entity of Sony Music Studios-Santa Monica. The facility is as aesthetically eye-catching as it is capable, with a chic lobby and reception area that is usually a beehive of activity around the clock. Light wood decor and skylights—actually a mural of a skylight which includes the visages of several employees cleverly worked in—give the facility a sense of spaciousness that extends to the main mastering suite itself.

The suite's dimensions are large enough to comfortably hold the unique Dunlavy SC-V main monitor system. Coupled with the equally accurate custom Dunlavy subwoofers, the room yields a completely flat frequency response (without room EQ) using Mark Levinson and Pacific Innovative Electronics amplifiers and a Bryston crossover. The Vincent Van Haaff-designed mastering suite allows for both personal and acoustical intimacy and accuracy. Other features of the suite, which opened in 1992, include a fully loaded Sonic Solutions 24-bit workstation with full NoNoise features, along with top-shelf analog and digital signal processing equipment. In addition, all digital equipment is clocked to an NVision Universal Sync generator with NVision distribution amplifier, allowing for the absolute lowest-possible digital jitter.

The studio's technology complement is diverse and comprehensive,

and includes the ability to restore vintage masters for re-release. Sony Music Mastering has managed to strike a careful balance between implementing crucial technolo-

gies and maintaining a comfortable, personalized atmosphere at its Santa Monica facility. For instance, the EDNet long-distance transmission system is in place, allowing producers, engineers and artists to stay on top of mastering sessions even when they're half a world away. At the same time, those who are on-site enjoy perks like Sony's on-premises cafe and valet parking. In addition, all clients can elect to use the adjacent audio facilities that are part of the larger Sony Music family, including state-of-the-art recording studios, a MIDI facility, Avid-based video editing capabilities and audio-video duplication services. In short, an extremely comprehensive package of services is available under a single umbrella.

But the best in equipment and services is only as good as the engineers behind the board. David Mitson, the talented and experienced Chief Mastering Engineer, is responsible for pristine productions for such artists as Neil Diamond, Kenny Loggins, Carlos Santana, Social Distortion, Willie Nelson, Boom Boom Satellites, Robert Johnson, Taj Mahal, Bessie Smith, Pete Seeger, Johnny Winter, Len, The Chieftains, and dozens of other top recording artists from Sony Records and other labels.

Facility Specs

Owner: Sony Music Entertainment Inc. **Managers:** Phil Kaye, senior director of studio operations; David Mitson, associate director. **Engineers:** David Mitson, Stephen Marsh. **Mastering Consoles:** Sonic Solutions workstation. **Media Systems:** Sony PCM-9000, PCM-1630, Ampex ATR-100 2-, 3-, 4-track, Studer A820 1/4-inch or 1/2-inch. **Formats Serviced:** CD, CD-R, cassette, vinyl. **Signal Processing:** GML 9500, Sontec MES-430B and DRC-202, Tube Tech LCA-2B, Maselec MLA-2, Weiss EQ-1 DS and DS-1 (both 24-bit), Prism and Apogee converters, Z Systems Z2SRC sample rate converter, Dolby SR. **Monitoring:** Dunlavy SC-V main monitor system w/custom Dunlavy subwoofers. **Amplification:** Mark Levinson and Pacific Innovative Electronics. **Other Services:** custom Rok-O Cut reverse turntable with reverse styl for playback of 33, 45, 78 rpm metal stampers.

Sony Music Studios



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World Radio History



PHOTO: A. MICHAEL HILLAND

Sony Mastering

Sony Mastering, one of the departments that make up the comprehensive but user-friendly Sony Music Studios in New York, is integral to the complete chain of the facility's audio services yet is felt by many of its clients to be uniquely personal, high-tech and creative stand-alone entity. The five staff mastering engineers—Vlado Mellor, Mark Wilder, Vic Anesini, Joe Palmaccio and Darcy Proper—each bring a perspective that covers the entire spectrum of music. Averaging 20 years of mastering experience each, they have provided award-winning mastering services for a wide range of recording artists, including Celine Dion, Savage Garden, Pras, Red Hot Chili Peppers, Ol' Skool, Prince, Barbra Streisand, Herbie Hancock, C-Note, Carole King, Da Brat, Chris Webber, Jean-Luc Ponty and Miles Davis.

The five-room mastering department features mastering consoles custom-designed and built by David Smith, vice president of engineering for Sony Music. The boards incorporate ultra-quiet proprietary and GML components, and all operations are 24-bit-capable, allowing Sony Music Mastering to operate in any existing or future digital audio domain. The mastering suites were designed by George Augspurger and Neil Grant.

Sony Music Studios, founded in 1993, has grown to encompass a plethora of services. The facility houses 45 world-class production studios, including its 95x75-foot shooting stage and state-of-the-art audio recording

and video editing studios. The most recent addition at Sony Mastering is DVD authoring and production capability, which will combine with the facility's 5.1 and 7.1 mixing and mastering capability to allow clients access to the newly established DVD-Audio platform.

All of the departments at Sony Music Studios operate as an integrated team, making for fluid transitions of talent and technology. "The studios' ability to accommodate every step of a project is constantly put to the test," according to Ian Huckabee, vice president of audio operations and marketing. "The Herbie Hancock project, for instance, was mixed in Studio D and edited and mastered by Mark Wilder. Because Mark was present at the mixing, he was able to provide insights to the producer in the mastering process that helped unify the overall vision of the entire project."

That kind of service parallels the facility's technological base. Adds Brian McKenna, associate director of audio operations, "Our mastering engineers are fully prepared for the onslaught of new technologies like SACD, DVD and DVD-Audio. We have already begun mastering SACD titles for Japan, and our engineering staff is looking forward to other new challenges like upcoming DVD-Audio titles. Between the talents of our exceptional mastering staff and the facility's dedication to developing and providing the most cutting-edge technology, there are simply no limits to what our mastering department can achieve for our clients."

Facility Specs

Owner: Sony Music Entertainment Inc. **Managers:** Ian Huckabee and Brian McKenna. **Engineers:** Vlado Mellor, Mark Wilder, Vic Anesini, Joe Palmaccio and Darcy Proper. **Mastering Consoles:** custom Sony-GML, Muth monitoring system. **Media Systems:** Sonic Solutions, PCM-9000, PCM-1630, Genex, DAT. **Formats Serviced:** analog vinyl, CD, CD-R, DVD. **Signal Processing:** Focusrite GML, Weiss, Prism, Tube-Tech, Harmonia Mund, Fairman, Sonic, Z Systems. **Monitoring:** Dantech, Dantale, Lesimon. **Amplification:** Cello/Lesimon, Shurewood Sax. **Other Services:** DVD authoring, EDNet/ISDN capability.

Sony Music Studios



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World Radio History



Sterling Sound

Sterling Sound may be a name with an illustrious reputation in the mastering world, but the next generation of the company is hardly resting on its laurels. In fact, the new Sterling Sound is at the vanguard of the future wave of mastering, in terms of both technology and art.

Now operating as a joint venture with London's renowned Metropolis Studios, Sterling is home to an unprecedented partnership of mastering professionals: Greg Calbi, Tom Coyne, Ted Jensen and George Marino. For more than two decades, these four engineers have put the finishing touches to Grammy-winning, Platinum albums by the world's top recording artists in nearly every genre—rock, pop, jazz, R&B and hip hop. With Murat Aktar as its president, Sterling is devoted to fostering an environment where new technology meets vintage creativity.

Currently located in midtown Manhattan, Sterling will be moving downtown early next year to grand new quarters in The Chelsea Market. The state-of-the-art, 25,000-square-foot facility will eventually comprise seven mastering rooms, with separate production/editing suites, fully equipped listening lounges, and various features designed to make the mastering experience as interactive, exciting and comfortable as possible for artists, producers, recording engineers and A&R executives alike. The mastering rooms will be surround sound-compatible and outfitted with a host of proprietary gear—in-

cluding custom analog transfer consoles and custom Sonic Solutions networking, designed by Sterling chief technical engineers Chris Muth and Bob Tis, respectively.

Sterling has always exploited current media to its utmost, from LP to CD. So with the changes now taking place in the music industry, Sterling is developing partnerships to take advantage of new sound carriers and delivery systems. For example, the company is exploring avenues for the secure, high-quality delivery of music over the Internet with Liquid Audio. Sterling has also taken a proactive stance with DVD, founding a firm with Metropolis London called Metropolis DVD, led by Zuma Digital cofounder David Anthony.

Of course, mastering is not only a science but an art, which is where Sterling's most innovative concept comes into play. Calbi, Coyne, Jensen and Marino are developing protégés in order to foster the next generation of mastering engineers. Learning the tricks of the trade in this internal guild are engineers Paul Angelli, Chris Athens, Steven Fallon and Eugene Nastasi. The separate rooms for mastering and production and the division of labor between the up-and-coming engineers and senior mastering engineers mean that Sterling will be able to offer more competitive rates for world-class work than perhaps ever before. In sum, the Sterling/Metropolis partnership is about new blood and new ideas, taking the mastery of mastering into the next century.

Facility Specs

President: Murat Aktar. **Chief Engineer:** Ted Jensen. **Senior Mastering Engineers:** Greg Calbi, Tom Coyne, George Marino. **Mastering Engineers:** Paul Angelli, Chris Athens, Steve Fallon, Eugene "UE" Nastasi. **Mastering Consoles:** analog transfer by Neve, Neumann and Muth Audio Design; digital by AMS Neve. **Media Systems:** Sonic Solutions SonicStudio (8), networked by MediaNet; DVD Creator (4), Studer A-820 (Stock/Callo); Ampex ATR (stock ATR valve electronics). **Formats Serviced:** 4-inch/2-inch analog, CD-R, DAT, PCM-9000, Pro Tools, DA-88 (Pacrat, Prism), DVD. **Signal Processing:** Ferrante, Avion, Z-Systems, Weiss, dB Technologies AD12216, Prism, GML, JVC, Studer and Apogee converters. **Monitoring:** S&W 801 and 802 Neutrik Series, Energy Vector, Avision, Pro-Ac, Velodyne subwoofers. **Amplification:** Krell, MDA Series, Classe Reference Series, Audio Research. **Other Services:** Neumann UMS-70 and -80 cutting lathe.



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CIRCLE #098 ON PRODUCT INFO CARD

BY ALEX ARTAUD

Launching a new trade show is complicated and risky, and it poses special challenges when the target audience speaks predominantly Spanish and Portuguese. But when more than 2,000 participants from 28 countries showed up at the Miami Convention Center on the first day of ExpoLatina '99, it was clear that the organizers had done their homework—and that the gamble had paid off.

From May 5 to 7, ExpoLatina attendees were able to visit more than 200 exhibitor booths, which covered a range of professional audio, lighting, broadcast and special effects products. Pro audio exhibitors included Apogee Sound, Crest Audio, D.A.S., EAW, Euphonix, Gemini, Hermes Music and Meyer Sound, to name just a few. For the three days, the mood on the floor was

expectant and, for the most part, positive. By the convention's end, many exhibitors felt that ExpoLatina had made its mark and that, with fine-tuning, it would become an invaluable show to attend.

Off the floor, several conferences and seminars were in progress. High-profile presentations by companies including Apogee Sound, D.A.S., Digidesign, JBL Professional and Meyer Sound gave visitors a chance to learn about computer control, acoustic enclosure design, se-

lecting DAWs, club system design, as well as polarity and phase in sound reinforcement systems.

Three audio seminars sponsored by *Mix-Edición en Español* were particularly well-attended. The first day featured a microphone symposium moderated by Estudio 19's Francisco Miranda of Mexico City, assisted by engineer Intel Alonso. Miranda's panelists included Angel Gonzalez of Sennheiser/Neumann in Mexico; engineer/synthesist Jaime Lagueruela of Miami, Fla.; and

NEW TRADE SHOW SERVES SPANISH-SPEAKING AUDIO MARKET

mastering engineer Bob Katz of Digital Domain in Orlando, Fla. This presentation covered everything from microphone basics and techniques—including descriptive sonic examples of classic microphones—to a look at some unorthodox techniques using vacuum cleaner hoses and toy cassette recorders, to a "guess-how-many-microphones?" discussion of Katz's recording of a Paquito

D'Rivera song.

On the second day of seminars, Audiograph International's José "Chilitos" Valenzuela presented "To Use DSP or Not...And How Much?" a hands-on seminar on the art of using DSP. On the last day, studio designer Horacio Malvicino illustrated the step-by-step process of building a world-class recording studio, from bare

ExpoLatina

1999

bones to finish. Another special presentation was given by Julio Rivarola of Mexico on the enormous job of installing and running a sound system for the Pope's recent visit to Mexico City.

One of the highlights of the show proved to be the Music Producers Forum presented by LARAS, the Latin division of NARAS. Hosted by its executive director Sergio Rozenblat and moderated by Valenzuela, the panel included luminaries Emilio Estefan Jr., Rudy Perez and Bebu Silveti discussing their working methods and studio techniques. Punctuated by much laughter, the forum gave a packed room a glimpse behind the scenes of the creative forces behind the hit records.

But what truly made this show different was the language spoken. Whether one was walking along the aisles, or sipping coffee with a colleague in the cafe on the floor, almost all conversations one overheard were in Spanish. This may not have seemed

surprising to those living in Miami, but in an industry dominated by the English language, ExpoLatina offered new possibilities and could signal a momentum that will carry into the next decade. Be there for the next Expo from May 23 to 25, 2000, in Miami, Fla., and see for yourself.

For more information, contact ExpoLatina 2000, 5680 Greenwood Plaza Blvd., Suite 100, Englewood, CO 80111; fax 720/489-3103; www.etcnyc.net/el.html. ■



L to R: José "Chilitos" Valenzuela, Emilio Estefan, Bebu Silveti and Rudy Perez

SOUND FOR FILM

IN THE YEAR 2025

by Larry Blake

One should never underestimate the ability of the film industry to change technical horses quickly, in spite of its renowned change-challenged inertia. The first major transition was in the late '20s, when Hollywood became "okay for sound," and within years it was hard to find a theater that didn't have a speaker behind the screen. The second was in the '50s, when two wide-screen systems, 1.85:1 flat

maintained projector that was manufactured in 1941. (Yes, I know that you need to change lenses and aperture plates, but these modifications take little time and money—the basic projector is the same.) You can even make the same statements for silent films made 30 years before *Kane*.

- Second, the chain from camera to lab to transfer bays to mixing stage to optical sound cameras still handles elements the same way they have been dealt with for the past few decades. You shoot film, make printing negatives on film and release on film. The good news is that you are not prey to software revisions;

Again, I'm talking about comparing films shot decades ago to video photographed today: It's no contest.

The point is, the process is stable and reliable, however photochemical, mechanical and 19th-century it may be. That's the good news. The bad news is that its days may be numbered, and the switch to video projection in theaters looks like it's going to throw the whole system into disarray. The first salvo will be the high-definition video release (planned for June 18) of *Star Wars: Episode I—The Phantom Menace* on two screens each in Los Angeles and New York. The hi-def

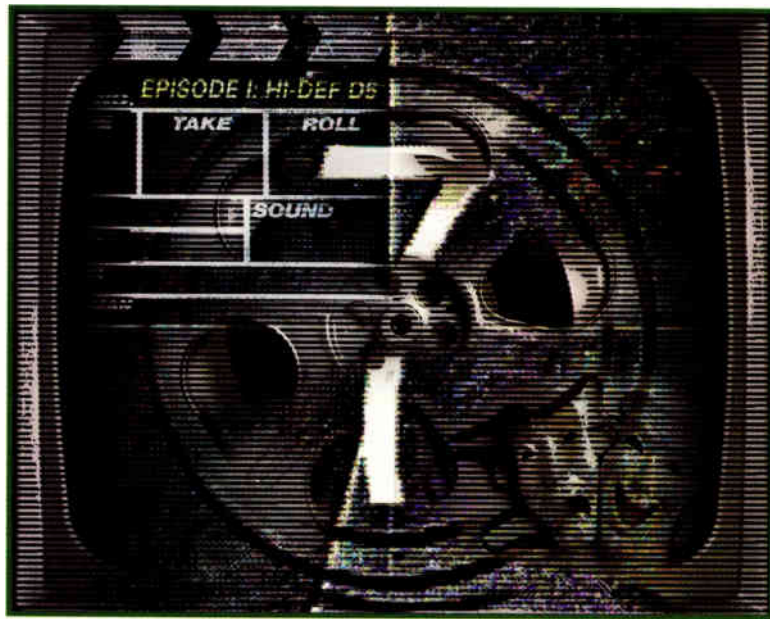
projector(s) to be used, and the playback format(s), are still under discussion as of this writing.

I applaud Lucasfilm for taking this first leap—it's been a long time coming. At the same time, I am worried that the industry is going to jump in way too fast and will introduce video to the exhibition industry long before the equipment has settled into a widely accepted, no-com-

promise standard. There have been tremendous improvements in video projection over the past few years, but the cost per unit is still hovering around \$100,000.

In addition, there is no proven system for playing back hi-def video inexpensively, and every method that you can imagine—on up to satellite transmission—has been discussed. It's likely that at least one of the *Episode I* hi-def theaters will be using professional D5 tape decks costing around

—CONTINUED ON PAGE 172



COMPOSITE IMAGE: TIM GLEASON

and 2.35:1 anamorphic, replaced the old "1.33 Academy" format.

Even inertia can have an up-side, and for Hollywood it's been the standardization of the four-perf 35mm film format. Forget Hollywood—we're talking about the *whole wide world* here, folks. There are four benefits of 35mm that we continue to reap almost a century later:

- First, you can play a print of, say, *Citizen Kane* (made in 1941) in any 35mm projector today. And you can play *Titanic* on a well-

the bad news is that it's hard to automate the process.

- Third, film has proven to be stable for archiving. Of course it will age and fade like any other physical medium if stored improperly. But even given half a chance, the magicians working at film labs can pull incredible prints off of negatives shot 70 years ago.

- And fourth, the image quality of film is still unsurpassed by any real-time video medium, and only recently have high-definition video cameras come close.

FACILITY SPOTLIGHT

LOWER EAST SIDE

by Gary Eskow

The audio post industry is booming right now. Three-room facilities are adding more suites. One-room shops have too much work and are adding pre-production spaces or duplicate rooms. Video houses are putting in full-blown mix stages or DAW-based finishing suites to keep agency work in-house. Nowhere is this more apparent, it seems, than New York City.

In an effort to stay a step ahead of the competition, the New York Media Group recently completed construction on Lower East Side, located on 12th Street in Manhattan. The ad community continues to migrate downtown, and NYMG, whose other facilities include East Side Audio, Superdupe Recording, Mixed Nuts Recording and Post Perfect, is out to make a splash on agency home turf.

Bobby Giammarco's Studio B at Lower East Side, featuring a Soundtracs DPC-II digital console. The room is fitted with the JBL LSR 5.1 monitoring system. Lower East Side is part of The New York Media Group.

Lower East Side, a 5,000-square-foot facility that currently houses two audio post rooms and has space for a third, represents ownership's ambitious attempt to create a new model for the industry, according to Neil Karsh, vice president of audio engineering. "We didn't want the same old studio thing," he says, "with equipment out in the open, dominating the environment. Instead, we were looking to create a living-room feel. Clients in this industry work under a great deal of stress, and creating a warm atmosphere that's friendly to work in was very important to us."

Working with the Carol Maryan architectural firm, NYMG came up with an art deco theme that is extremely soothing: pastel walls, comfortable seating, and plush carpeting make you feel like

—CONTINUED ON PAGE 177



PHOTO: ROBERT MILAZZO

BATTLE OF THE TRAILERS

by David John Farinella

Conventional mixing wisdom states that throwing a bird call in the left surround channel is bound to pull an audience's attention away from the screen. Clearly, then, it's important to have a modicum of surround subtlety while working on a full-length feature, but a handful of film sound mixers and editors had the opportunity to throw that philosophy out the window while working on logo trailers for Dolby Digital. Sony Dynamic Digital Sound (SDDS) and Digital Theater Systems (DTS). In shops like Creative Cafe and MarcoCo., as well as Skywalker Sound, Universal Studios and Dolby Laboratories, teams packed channels with bird calls and swooshed and swirled effects, front to back, for brief logo trailers.

Though the goal of each of these segments was to show off the multichannel format, the creative teams for each format spared no visual expense. Visuals for "Rain," the Dolby spot, were

produced by Garson Yu of Yu & Co. in Los Angeles, the SDDS segment was directed by Barnaby Jackson of Sony Pictures' commercial division, Pavlov Productions. DTS's new spot was produced by Pittard Sullivan's Jennifer Grey and Chuck Carey, who was the creative director on the spot.

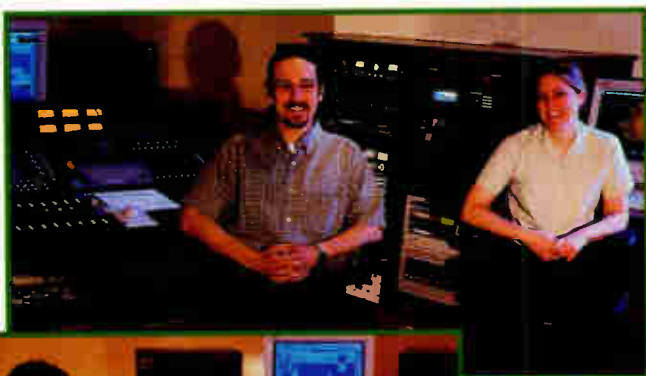
DOLBY DIGITAL EX

Marco d'Ambrosio's involvement in the "Rain" trailer for Dolby's new Surround EX format (see *Mix*, May 1999, for a detailed description of its debut with *Star Wars: Episode I*) started when he was asked to come up with concepts for a corporate sound-mark. He worked on a number of orchestral ideas before coming up with the tuned crystal glass now heard on all of Dolby's trailers. The crystal was rubbed for a distinctive background track and struck for dramatic percussive background notes; each strike was placed in a different channel.

"I wanted to create all the sounds from scratch," d'Ambrosio explains. One of the tools he used to accomplish just that was an instrument called the water-

—CONTINUED ON PAGE 179

Below: mixer Glen Landrum with assistant Cheryl Johnson in Studio A



At Left: Mixer Bobby Giammarco with assistant mixer Cathleen Conte in Lower East Side's Studio B.



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—FROM PAGE 170, IN THE YEAR 2025

\$75,000. While we usually take comfort in the fact that high-tech stuff gets better and cheaper every month, in this instance I'm scared. By way of illustration, let me predict what the situation might be like in 25 years.

First of all, I feel almost certain that the first-generation video projectors installed in your neighborhood Hell Twelveplex will have long since been sold off to sports bars. Improvements in illumination and resolution probably will not be retrofittable.

The same type of changes will be happening to the playback medium. Storage capability will increase while the quality of image compression will improve, leaving behind a sad graveyard of obsolete units whose active life was less than a few years. While I don't know whether we'll be on second- or even fifth-generation units in 2025, I guarantee they won't be compatible with the first.

You might be asking yourself why any theater chain in its right mind would spend so much money upgrading hundreds of theaters only to do it again in a few years. The sarcastic answer is that no one is talking of this; I think everyone is whistling past this video graveyard hoping that the formats won't go bump in the night. The pat answer being given now is that the major studios will have to rebate to theaters a certain amount of money that would be taken from their considerable film print savings. It's estimated that over a billion dollars a year is spent on prints, which cost in the range of \$1,500 each. (There's also the factor of shipping them, which is billed to the theater.)

What worries me even more is that whatever format the movie is physically distributed and exhibited on will change every few years. I will lay a few Franklins right now that whatever hi-def format *Star Wars: Episode II* will be distributed on in 2002 will not still be in wide use three years later when *Episode III* is released. I will bet you any dollar figure you choose that it will be playable, come 2025, in only a handful of Hollywood screening rooms.

So, whereas in the days of film projection one could get David O. Selznick's personal print of *Gone With the Wind* and play it anywhere 60 years after the release, "the print of the future" will, I predict, have a shelf life of a few years if the transition to video projection is as fast as some are claim-

ing. Following this above example, *Episode II* will have to be remastered in the format *du jour* if you want to see it five years after its release. (I mention the *Star Wars* movies only because we can predict their debut.) This is not a very appealing proposition.

All of the above might seem like harsh statements until you look at the sordid history of videotape. Video recording first became practical in 1956 with the introduction of the 2-inch "quad" format, which was the standard for over two decades until it was replaced by 1-inch in the late '70s. (Earlier that decade ¾-inch video started to chip away at the use of 16mm news-film.) In the mid-'80s a rapid succession of digital video formats started coming out of Japan, hand in hand with improvements in video processing and film-to-tape transfer technology.

Still, the visual documentary record of our culture has been in the toilet since the introduction of ¾-inch. Look at gorgeous newsreel footage of JFK in his eponymous film, then look at the best stuff available from the networks on Jimmy Carter. Every year, during the NBA finals, I'm always disgusted at the murky-looking tapes from finals as recent as ten years ago (I have seen *home* movies from the '50s that look better on TV). On the Hollywood front, you would be hard-pressed to find a popular film that hasn't been mastered to video, from scratch, at least three times since the late '70s, so drastic have the improvements been. This will continue to happen every five-to-ten years until real-time-transfer video resolution matches that of film.

The irony in this whole story is that image quality has historically been our biggest worry: "They'll never get video to look as good as film." Now, apparently, they're real close. I say "apparently" because I haven't seen any of the recent film/video demonstrations that my colleagues in Hollywood have been attending. However, a large number of equally film-centric friends of mine, people who would be the first to say, "Wait a minute, this ain't right!" are reporting that the latest generation of video projectors hold their own in side-by-side comparisons to tweaked film projectors. So far so good.

When this can be done on a 60-foot screen, compared against a camera negative print, we'll have reached the next plateau. Also, I want to see how these expensive projectors will hold up to being in hot projection booths for 12 hours a day, 365 days a year. Will they

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world radio history

just simply break even if they don't become obsolete? So much of the talk *assumes* that they will be maintenance-free; I remain skeptical.

You can bet the homestead that films (that term is going to become a confusing quasi-misnomer very rapidly) finished on hi-def video will be archived by the major studios onto venerable 35mm four-perf even when the time comes that movies are indeed only shown electronically. As video compression and storage improves, there will be a highest-resolution master from which to work. To do otherwise would be the same as recording, mixing and mastering a record 24-bit, and then only saving the 16-bit version.

The subject of data compression has different twists for the worlds of picture and sound. (This discussion is made all the more complicated by the security needs of encryption, but I won't get into that important issue here.) Compression is simply mandatory today because there is no way that I know of with current technology to deliver an uncompressed film scanned at 2K resolution. ("2K" is the shorthand for the industry-standard film scanning resolution of 2048x1556 [horizontal/

vertical] lines and 8-bit linear resolution per channel, resulting in a whopping 9.1 MB per frame.) It would take over 1.5 terabytes to store a film in this manner, so it's clear that it's a question of how much compression our picture colleagues will use, not if they will use it.

The story is quite different for sound, since the data rate (24-bit, 48 kHz) is 8.2 MB per track minute, or a measly 8 gbytes for an 8-track feature film. I know what you're thinking: Dude, this is a sound magazine, when are you going to start talking about *sound*? Yeah. I haven't said anything about sound because to me the goal is quite clear: 24-bit linear PCM, 48kHz audio, with no low-bit coding scheme in sight. The industry has been working with 24-bit digital dubbers for over a year now, and there's no looking back as far as I'm concerned.


As for looking ahead, while the production and exhibition industries thrash out a standard for digital projection, here are a few things I would hope they would incorporate with regards to sound from Version 1.

Along with the higher bit rate, we need to look to increasing the number of channels, and the number I keep

coming back to is 12. The layout is simple, and incorporates all existing sound formats: five screen speakers, three surround channels (as in Dolby Surround EX), a screen center top (as in IMAX presentations), plus a screen subwoofer channel. That's 10, and while I know we could stop there, I would want to throw in two others, say, surround subwoofer and center ceiling surround. (It seems strange to me to just add two channels and not go all the way.)

I know that this proposal throws a curveball at the industry, which is all focused on "eight" because it's just such a nice, round number. It fits the recorders, it fits consoles and it fits today's film formats. Note that I said "today's" formats, which have all been limited by the physical film medium. We should design the next generation format so that you can have whatever parts you want *simultaneously*. We can't be blinded by what we're used to, what today's equipment can handle, and what we've been told that we need.

There's one point that we should not bend on: the availability of five screen speakers. All of the boilerplated arguments "against" this format are without any foundation in fact or logic,



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and I really hope that people don't try to go for 5.1 just because it's the most popular.

Another key area that I would like to change is the printmastering process, wherein the dialog, music and effects stems are combined for distribution to the real world outside the re-recording stage. Today there is a whole level of voodoo involved, bringing in external boxes for various and sundry forms of encoding and processing for the four formats, including stereo optical. We live with it because that's what the state of the art demands, but in the future I just want to sum my stems and go home. It will be beautiful when we don't have to devote more than cursory attention to checking the final master of a film. Having one master format will be possible because theaters that are not equipped for the whole enchilada would downmix to their system's capabilities.

There are many other issues to be considered, such as subtitle encoding for the hearing impaired and timecode to lock to the outside world (probably DTS DVDs carrying 24-bit uncompressed mixes of other languages). Maybe we should also consider having a low-bit-rate 2-track Lt-Rt containing a limited dynamic range mix that would feed the headphones for the hearing impaired. (I always do a mix of this nature for airline and broadcast release.)

The B-Chain of theaters are a given, film or video projection, and the whole industry will have converted over to 24-bit digital mixes by the end of next year. The changes that will be occurring for the next 25 years should be more picture-related, and there's no reason we shouldn't do a wholesale upgrading of the theatrical sound formats from the get-go. While I won't say that 24-bit/48kHz and 12-channel mixes are the last word in film sound formats, I feel confident that any further improvements will be incremental.

This is one of those rare columns where I hope I'm wrong. I hope that other companies will take Lucasfilm's lead and continue to experiment with video projection, learning the best ways to implement the technology in the real world. However much the bean counters want to save the cost of shipping prints, we should resist the widespread changeover to video until it not only becomes cheaper and better, but also when it is in something resembling a stable form. This will take a few years, but it will avoid the em-

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barrassment of continually asking theater owners to change their equipment.

One final note, which will also suffice as my Obligatory Beatle Anecdote. (I've only recently found out that my editors are getting wary of so many references to the lads, so you can expect a lot more of them from me.) Those of us who refuse to see the coming of the end of film projection should realize that the Beatles didn't see stereo taking over their industry, either. As late as 1968 (for the White Album), they considered the mono mix to be definitive. A year later, they didn't even bother to mix *Abbey Road* in mono.

Help me set up a 12-step group for film lovers by writing to P.O. Box 24609, New Orleans, LA 70184, fax 504/488-5139, or swelltone@aol.com. ■

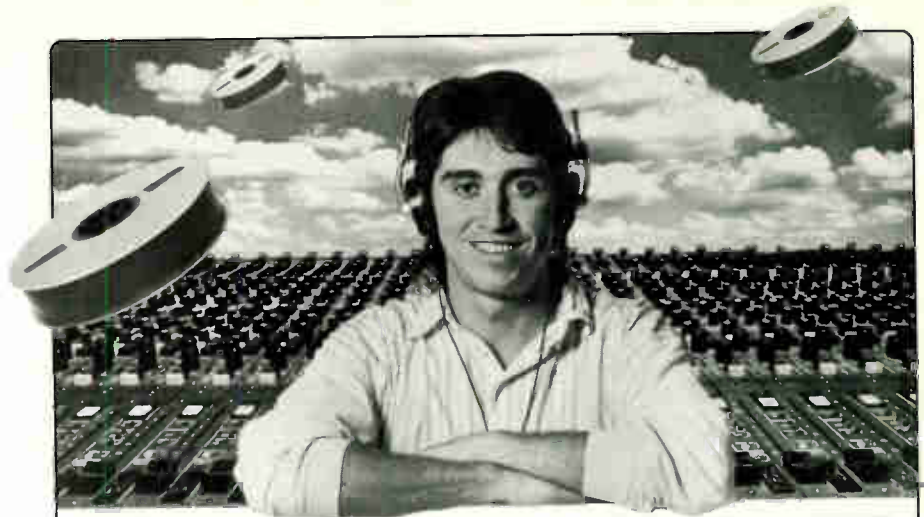
Larry Blake is a sound editor/re-recording mixer who lives in New Orleans for reasons too numerous to mention, although one of them would have to be the fact his home is a 24-minute walk from the Jazz and Heritage Festival.

—FROM PAGE 171, LOWER EAST SIDE

you're walking through a well-appointed 1950s home. The equipment that drives these rooms makes only a subtle impression on the first-time visitor. "That was exactly our intent," Karsh says. "Aesthetic considerations were paramount to us. In fact, we spent six or seven months looking for a space that had enough windows."

The emphasis on decor didn't make facility designer John Storyk's work easy, however. "John and I have known each other for a long time—since my days at New England Digital," Karsh notes, "and we've had some great experiences together, particularly in the design work he did at Superdupe. We looked at a number of people and chose John based on past experience and the fact that he's located in New York. His job was to make sure that the room sounded great and was easy to work in despite the weight we put on the aesthetic aspect of construction. It was a difficult one, but he did a great job."

The New York Media Group has a longstanding relationship with SSL, but after giving the matter serious attention decided to go in a different direction when it came to choosing consoles for the new facility. "When you buy a big-ticket item," Karsh says, "you're buying



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the people who make the product as much as the piece of equipment itself. The support we got from SSL over the years has been outstanding, and that's one of the reasons why it was so hard to go with another company.

"And yet, when we looked at the Soundtracs DPC-II," he adds, "we were really floored. In it we saw a new technology that offered as much—maybe more—at a more competitive price than any other product out there. This company is the new kid on the block with respect to high-end digital consoles, but after some considerable soul searching we decided to go with them. In fact, we bought their first board. After the purchase decision had been made, the coin was in the air. Since I pushed for these consoles, I could have ended up looking like a dolt six months later, or seeming like the smartest guy in the business. Fortunately, the way things have turned out, I don't look like a dolt!" In addition to the two DPC-IIs located at Lower East Side, the NYMG has since purchased another five for their other New York properties.

New-room construction pretty much has to be 5.1-capable, and that can present problems in a market like New York, where space doesn't come cheaply. "Obviously, everyone can't be sitting in the sweet spot," Karsh says. "We had John design the rooms so that the mixer is right in the center of the surround field. Producers can easily move around and listen to the full surround imaging whenever they need to."

The all-new facility also provided the chance to go with an all-new monitoring system. JBL seems to be making a move back toward the top of the speaker market, and Karsh was pleasantly surprised when he demoed the company's new line. "I really only decided to listen to them because I have friends at JBL," he admits. "I didn't expect to hear anything I liked, but the LSR 32s really blew me away: we're using them as our left, center and right speakers. We've also got their LSR 28Ts for the surround information, and an LSR 12P as a sub-woofer. I've got to say that these speakers have turned out to be one of the pleasant surprises we've come across in our shopping spree. They sound amazing, especially when you factor in their physical size and cost."

On my visit to Lower East Side, I ran across mixer Bob Giammarco, and he enthusiastically seconded most of Karsh's comments. "Client comfort was our main concern," he says. "It guided almost all of our architectural

decisions. And the rooms sound great!"

Karsh made special mention of two companies whose work helped Lower East Side turn out exactly as planned. "Taytrix is the wiring company we brought in," he says, "and they did a fantastic job. I put together the electrical design plans, and I'm personally pleased with the way that aspect of the installation turned out. The people from Taytrix were a pleasure to have around. And Chris Bown runs a company called CHBO, and it's one of the greatest construction companies on the planet! They're part of Storyk's team. One of the beauties of hiring John is that Chris' team becomes available to you."

Expansions, additions, upgrades, re-designs—the post market, like the stock market, is truly booming in New York. With the opening of Lower East Side, it appears that NYMG is well-positioned to capitalize on the resurgence—no matter what part of the island you find yourself on. ■

Gary Eskow is a freelance writer, musician and composer based in New Jersey.

—FROM PAGE 171, BATTLE OF THE TRAILERS

phone that had been built by Hawaiian sculptor Richard Waters. The waterphone is a stainless-steel sculpture surrounded by a series of bronze rods; tones are controlled by varying the level of water in the sculpture.

The waterphone, glasses and other sound design elements were recorded in his home studio with Neumann microphones, through a preamp and then into Pro Tools 24 Version 4.3. Though the goal was to work as organically as possible, he found himself using a TC Electronic M5000, Dolby Surround Tools and Hyperprism plugins during the premix.

The orchestral portion of the trailer was recorded in the Dolby screening room, which they had converted to a scoring stage for the day. In order to take advantage of the EX format, ambient mics were placed above the 35-piece orchestra. "We were able to use those mics for the spatial placement and get a good sense of spaciousness for the orchestra," he says. The session was recorded to analog 24-track with Dolby SR and then transferred into Pro Tools 24. d'Ambrosio then added a devil chaser, a Filipino percussion instrument that he pitched way down in

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Pro Tools and used to close the trailer by panning it through each of the channels.

In order to simplify the mixing process d'Ambrosio worked up seven premixes, which he delivered to Gary Rizzo at Skywalker Sound as Pro Tools sessions. Rizzo had visited d'Ambrosio during the recording and premix, and he knew that "this deserved more attention in the mix than the average trailer. You don't want it to be so subtle that people aren't interested in it, but you don't want to pound the audience in the head.

"When you see a big car explosion,

the audience tends to take their forehead and lean it backwards," he adds. "But when you have something that's much more elemental, then it's almost like you're soothing the audience by pushing their shoulders back. So, when you watch the trailer you tend to want to sit back and really look at it. Most of that is the visual, but certainly I wanted to enhance that with the sound effects. It's not that we wanted people on the edge of their seat; we wanted them to be able to have a wonderful sonic experience while sitting back and being engrossed by the beauty of the trailer, sonically and visually."

For the mix, Rizzo and d'Ambrosio went into THX-certified Mix G at Skywalker Sound. They mixed on a Solid State Logic 5000, with joystick panners that have been modified for the EX format. As far as outboard gear, he used GML EQs, a Lexicon 480 and QRS Excels.

SDDS

Just as the "Rain" trailer is an artful video image, the SDDS series of trailers is a gorgeous collection of footage. The three unique trailers—Jungle, Underwater and Volcano—run independently, while the Quest version combines them all into a 1:15 trailer. The film was shot on Hawaii's Big Island; the audio was gathered from around the world by recordist Patricio Liebenson, who was dispatched to the jungles of Brazil and Costa Rica with a 4-channel Nagra D to capture natural ambience and animal sounds.

As sound supervisor Dean Beville explains, "He's able to replicate any environment. It's three-dimensional, and it really places you in the environment you're seeing. The way he employed his mics really helped capture the sounds. It's to the point where you're hearing water flow left to right and it wasn't any sort of psychoacoustics sleight of hand. It was true reproduction in the environment.

"I thought one of the great opportunities the spot presented to us on the sound side was to try to place the viewer in the environment they are seeing," he continues. "Rather than going for over-the-top and large, we were just trying to establish that ambience."

In addition to the 4-channel backgrounds provided by Liebenson, Beville collected over 200 sound design elements—everything from traditional bird calls to jungle brush to underwater noises. Beville took each sound element and pre-panned it to where he believed it should be placed. "We presented editorially with most of the elements pre-panned and with all the movements built into the track to preserve the editorial point of view," he explains. "We worked hard to make sure the elements were placed in a fashion that would play up the format, starting with the bubbling elements in the five speakers in the front, then introducing the additional elements out of the surrounds and bringing those around up to the front and moving the elements that were established in the front away to keep everything clean and unmuddled."



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Beville delivered tracks to the mixing team of Tennyson Sebastian III and Sergio Reyes, who were working on a Harrison MPC at Creative Cafe at the time, on Pro Tools discs with Tascam DA-88 backups. Some of the other effects, like the surf and volcano explosions, were delivered on analog 2-inch, while others were dumped onto Sony 3348. With a small laugh, Sebastian says he wasn't surprised when Beville walked in with the over 200 sound elements on such a wide variety of formats. "I know Dean, and that's how he does things. He likes to build stuff wide, and he does it real tastefully, so it makes it work well."

DTS

The DTS idea was born in the initial meetings between Andrea Nee of DTS and Pittard Sullivan's creative team of Jennifer Grey and Chuck Carey. As Grey explains, "We understood that they wanted to create a trailer that really represented and embodied the quality of their system and helped to open people's ears in a new way." The piece, titled *Sonic Landscape*, combines a macro view of the inside of a piano and a soundtrack that includes a music bed, vocal choirs, church bells, bird wing sounds and children's laughter.

Nee says, "We all agreed we wanted to demonstrate the impact that digital 5.1 audio could have on a digital presentation, but we wanted to somewhat step away from the very loud, abrasive or action-packed sounds that you often associate with that. So, we wanted to go with something that was a bit more subtle but still provided a distinctive sound landscape."

Composer and sound designer Walter Werzowa worked through a number of concepts, including building a track of random piano sounds. "Those ideas sounded great on paper, but not that great in 18 seconds," he explains. So, the team came up with a day-in-the-life-of-a-note theme, where Werzowa combined music and sound elements, beginning with a single piano note. "You see this piano note as a pulse that maybe triggers some other events, like a wind coming into the universe. There's a beautiful low rumble that triggers some choir voices, and it feels like the whole universe is a little in motion," he says. "There are bird wings and church bells and all the realistic sounds, but they are so embedded into the music that you don't really hear them. Then you have a little three-note

—CONTINUED ON PAGE 233

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**TOUR
PROFILE**

HARD KNOCK LIFE

Jay-Z and DMX Energize the Stage



PHOTO © 1999 THOR SWIFT



PHOTO: MARK FRINK

Riding high on Jay-Z's Grammy, and back-to-back Number One albums from DMX, the 1999 Hard Knock Life tour is bringing rock 'n' roll production to live rap—and selling out arenas across the country. Not since Run-DMC's Fresh Fest has a rap tour been this successful. The same night 'N Sync was playing at Portland's Rose Garden Arena to screaming teens, it was a whole other language next door at the Memorial Coliseum. "The crowd is the show," comments Maceo Price, who mixes DMX, as well as opening act Method Man and Redman. "This is like a backyard barbecue for 20,000 friends at 130 dB."

Price shares a Midas XL-4 with Jay-Z's FOH mixer, Tim Colvard. Crew chief Ted Kujawski is assisted by Jeff Sullivan, and sound services are provided by Eighth Day Audio. (Early in the tour a snowstorm stranded the trucks on the Pennsylvania Turnpike, and Eighth Day saved the day by duplicating the audio rig in the shop for the Cleveland show that night, though it ran with a generic par can light show.)

Behind the FOH mix position, DJ Clue spins house music between acts to keep the mood moving, monitoring on a pair of single-15 wedges. Price also has a pair of double-15 wedges for cueing that are delayed to the mains. "I've never liked headphones, because I'm trying to reproduce what's coming out of the P.A.," he says. "It's more realistic to listen to it over the sound of the crowd and the room, since that's the environment I'm mixing in. It gives me a lot more low end if I need to hear what the track and the effects are doing." Price also points out that the bulky monitors help keep posers out of his space on the mix platform.

Both Price and Colvard use a BSS 901 dynamic equalizer, which they call "the glove," on a vocal subgroup in order to



PHOTO: MARK FRINK

Some of the Hard Knock crew (L to R): Monitor mixer Carlton Brown, DMX front-of-house mixer Maceo Price, crew chief Ted Kujawski, Kujawski's assistant, Jeff Sullivan, and monitor tech Aaron Graves at the Memorial Coliseum, Portland, Ore.

smooth out 2.5 kHz. "It helps the lead vocal stand out of the mix without getting harsh," Price says. "For Red and Meth, I've got so many backing vocals that I just put the two of them in there." Inserted on DMX's vocal are a Focusrite VoiceBox and a KT 3600 graphic. "With the stage level so high, I have to pull some of that wash out of his mic," Price adds, "and then the Focusrite adds that nice wide tube feel." Vocal effects for DMX include an H3000 S and a TC Electronic 2290 delay. "The Eventide is either a chorus or a pitch change, and the TC is set at 66 milliseconds to double the vocal in some places, or at 460 for that quick delay," says Price.

Price uses a pair of dbx 120-XP

BY MARK FRINK

—CONTINUED ON PAGE 191

**TOUR
PROFILE**

THE GEORGE STRAIT COUNTRY MUSIC FESTIVAL

Multi-Act Debut For Showco's Analog/Digital Showconsole

In 1998, close to 1 million fans flocked to see the George Strait Country Music Festival, a one-day, seven-act show staged in 18 football stadiums around the U.S. This year's Straitfest '99 again offered concert-goers an alluring lineup of established and fast-rising country stars, a day in the sun and a wide range of associated amusements, including a traveling carnival and "country fair" that set up in the parking lot of each venue. Playing no more than three weekends per month and featuring the same lineup throughout—Asleep at the Wheel, Mark Wills, Jo Dee Messina, Kenny Chesney, the Dixie Chicks, Tim McGraw and George Strait—the tour started in the ASU Sun Devil Stadium in Tempe, Ariz., in March and wound up at Three Rivers Stadium, Pittsburgh, in June. *Mix* caught the Oakland Coliseum show on Sunday, May 9.

Because of the setup time required for a stadium show, Straitfest has been touring with completely separate Saturday and Sunday productions, including two stadium-sized Prism sound systems from Dallas-based Showco. And because of the distances between successive shows, on Sundays show opener Asleep at the Wheel often appears onstage hours before George Strait's band equipment arrives from the Saturday night venue. Without the safety net of a soundcheck, each of the bands' monitor and FOH engineers relies on Saturday's board settings for the start of each Sunday set. Last year, in order to ensure consistency and minimize the surprises that can occur in a multi-act show, each band carried its own monitor and FOH console.

"Carrying seven separate consoles involves enormous expense, and not just in terms of hardware," says Showco vice president Howard Page. "There's truck space and setup time to factor in, too, and you have to build a front-of-house mixing platform large enough for seven mixers and their effects racks."

Showco's solution for Straitfest '99 is the Showconsole, a new digitally controlled analog audio mixing console developed jointly by Showco and Harrison (Nashville). Six different FOH engineers use the Showconsole for six different acts, yet the switchovers are seamless. Every mixer starts out with all of the Showconsole's many control and routing functions exactly recalled to previ-



George Strait



The Dixie Chicks

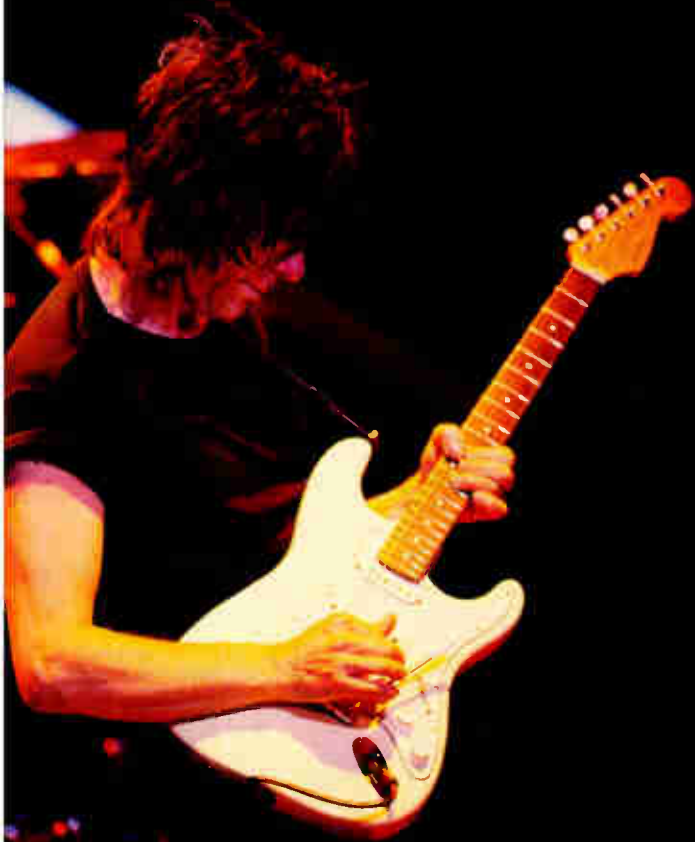
ously stored settings, regardless of any previous engineer's configuration changes and level trims.

"Everything shows up where you want it," says Paul Rogers, headliner George Strait's FOH mixer and tour production manager. "It remembers everybody's settings, and when you go to your icon and click on it, then your settings are there on the console. All of the bus assignments, the auxiliary sends, the EQ—it all shows up exactly the way it was when you walked away from it. We're doing multiple acts all day long, yet we're using just the one console to do it with. I'm incredibly happy with this console—it's made my life very easy."

BY CHRIS MICHIE

—CONTINUED ON PAGE 192

Jeff BECK



Legendary guitarist Jeff Beck is currently out on tour supporting his recent release *Who Else!* Mix caught the show at Oakland, Calif.'s, Paramount Theater, where Beck played the final night of the theater leg of the tour. Next he will head out to Japan, followed by a tour of U.S. sheds. Regaling the crowd of ecstatic fans with material from the new album as well as some older gems, Beck's fingers were on fire.



L to R: Randy Hope-Taylor (bass), Jeff Beck, Jennifer Batten (guitars, keys/nois), Steve Alexander (drums)



"I've been working with Jeff for 28 years," says FOH engineer Chris Hill (R), pictured with system engineer Dave Lester at the Yamaha PM4000 console. "I've only missed one tour in that time. We're using Showco as our P.A. company, and on this leg we've been playing everything from 2,000 to 6,000 seaters, so the Showco system varies in size. Showco's great—configurations are easy to stack, and it's very even; a nice, punchy system." In his rack Hill is carrying three TC Electronic 2290s, with various delays, a Lexicon 480 for reverbs and a PCM 80 for drum reverbs, an Eventide H3000 Harmonizer for chorus effects on one song, and an assortment of gates and compressors. "Because Jeff doesn't use foot pedals, I do all his reverbs and delays. It's a little more modern sound but still Jeff Beck on the new record, which is quite hard to reproduce live. It's okay in clubs where you've got that real small room and you get the air moving without any resonances, but it can become a nightmare if the low end just washes over everything and drowns everything out, with techno loops going and low-end stuff. So in bigger rooms, it's about trying to keep it in control."



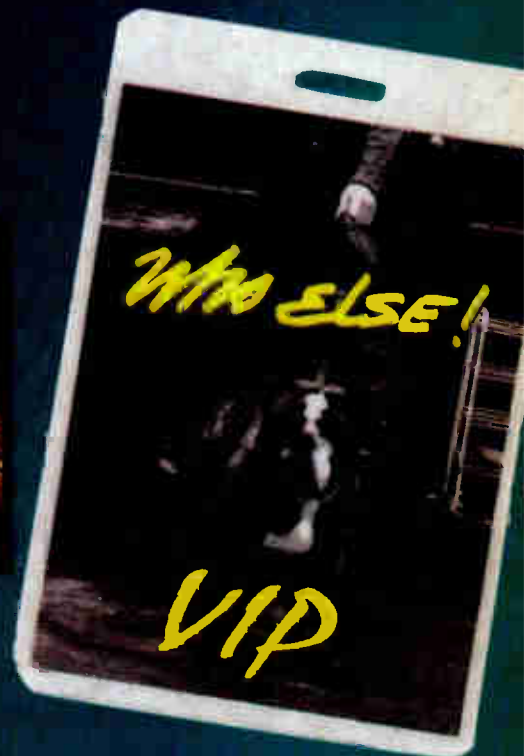
"Basically, I have everyone on the console with the exception of overheads," says monitor engineer Jerrell "Big J" Evans, pictured next to his Harrison console. "There are ten wedges onstage, and everyone has a stereo mix. I have sidefills with subs underneath them. The drummer has two single 18 subs underneath his wedges, and I have a rack of 1,200-watt amps that drives all the monitors. It's very loud onstage, but with a lot of depth and clarity. My rack consists of a Lexicon PCM 80 processor, a TC 2290 delay, plus effects control processor. I've got two Klark Teknik DN504 compressors, three Aphex expander gates, eight Klark Teknik DN360 graphic equalizers—not a lot of gadgets going on there, pretty straightforward. My communication is great with Jeff; we're very open during soundcheck. He likes it very drum-heavy coming off the stage and heavy on some of the keyboard sequences; it's a really rich sound onstage."



"Jeff doesn't really use many effects, or even foot pedals," says guitar tech Dan Dearnley, "just the one flanger there, for some of the older songs. He's really free of all that. It's his fingers that do all the work, getting different tones. Jeff currently has eight guitars with him—Strats for the stage, and he has some Telecasters that he uses in his dressing room to warm up with. The way we have it set up onstage, it's all hands-on for him: He sets his own EQs and everything and has control over his sound. The wedges down in front are run by one of the Marshall heads. It's like having a 4x12 in front of you, so anything he changes in the amp he can really hear it. Before he was having guitar come back in the monitors and he'd EQ the amp to suit those speakers, which didn't work out. Now with the Marshall in front of him he can get true sounds and is helped by the FOH engineer as well; you get a nice guitar sound every time."



"For the three rack toms we have the May System 57s, Shure," says Richard "Ravi" Sharman, drum tech and production hand. "The three floor toms are May System AKG kick mics; the bass drum also has one mounted in, which is a Shure kick mic. Snare top and bottom are 57s, Shure 98s on the baby snare and the infant snare, and for the ride cymbal, an AKG 415 condenser mic. We use Sennheisers as the overheads; for the hi-hats we have AKG 460s and another 415 on the second pair of hi-hats. We have a floor tom used as a bass drum—it's part of a jungle kit that Sonar made specially for drummer Steve Alexander; he liked it and has it as a second sounding kick drum. At various stages of the show Steve uses a lot of electronics. We have an Akai MPC2000 as a drum sampler. He plays sequencer parts and different sounds; that's linked up with a Turbo Cat and trigger pedals, mixed by a Yamaha programmable mixer and other MIDI stuff to link it all together. He has a Zip drive to load it, and a click through a little Fostex-powered amp rather than headphones. It's all a very compact system, and he's really quick at using it—the show is very fast-paced. We also have a little remote volume for the click track."



**TOUR
PROFILE**

THE ALLMAN BROTHERS BAND

The Road Goes on Forever



Dickey Betts



PHOTOS: MAD HE HEINRY

From left: Joe Dan Petty, bassist Oteil Burbridge, Red Dog and FOH engineer Bud Snyder

March 26, 1999, marked the thirtieth anniversary of the first concert by the legendary Allman Brothers Band. The date fell, fittingly enough, during what has become a tradition for the group throughout the past decade—an extended run of performances at New York's historic Beacon Theater.

The Allman Brothers Band is steeped in both musical and even visual tradition—their show includes a recreation of the famous light shows of the '60s, courtesy of the Brotherhood of Light—and the band has earned a reputation for putting on long and varied shows that draw from their roots in Southern blues, rock and jazzy improvisation. During 30 years of playing both together and apart, the Allmans' live setup has grown and changed along with the industry, evolving from primitive beginnings with a Sunn Coliseum P.A. to the unique stage and monitoring system they employ today.

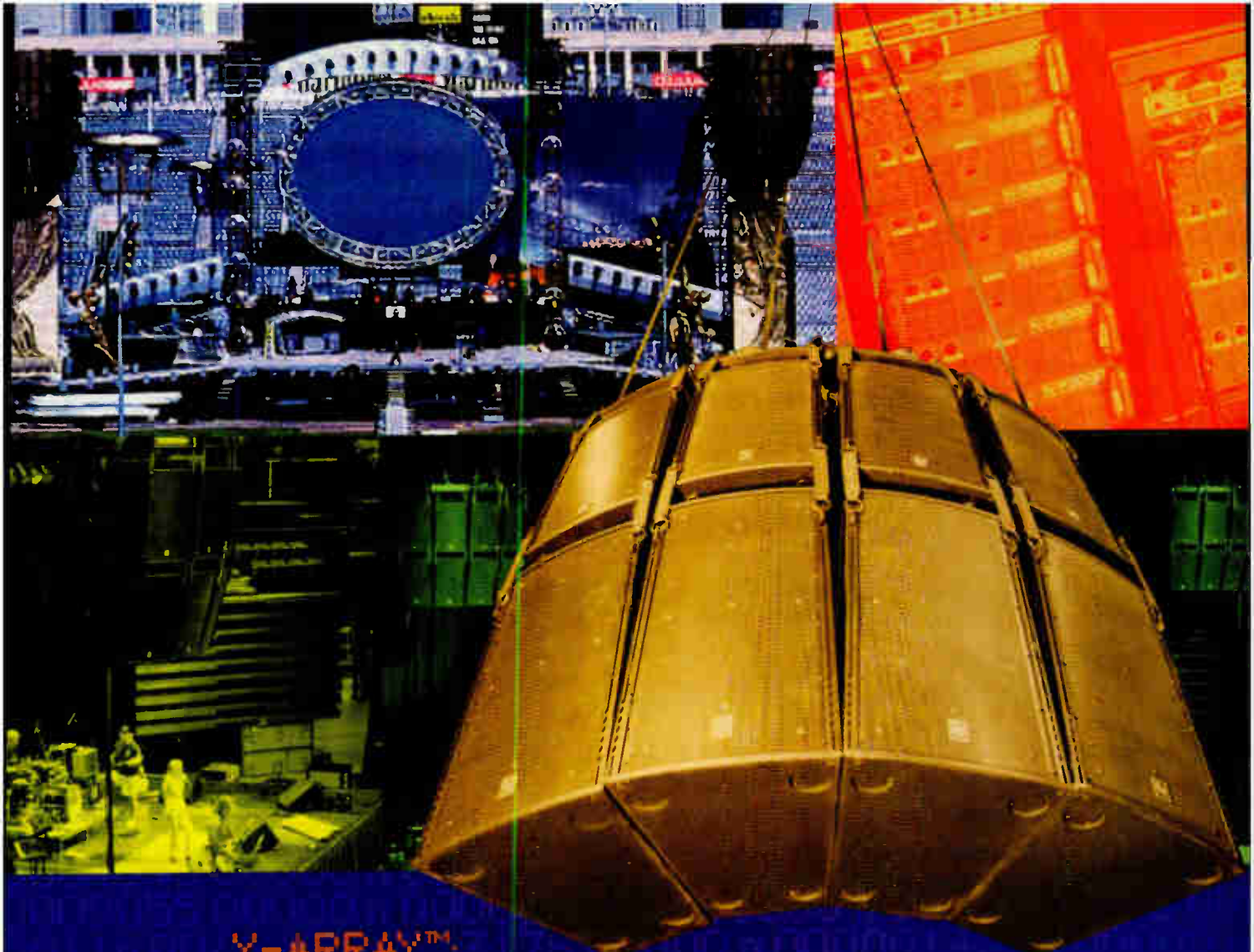
A FIVE-WAY SYSTEM IS HARD TO FIND

Front-of-house engineer Bud Snyder has been with the band since their rejuvenation in 1989 and has mixed every one of their shows at the Beacon. Snyder has continually honed

the band's P.A. setup, which is supplied by db Sound of Des Plaines, Ill. "It's strange that I'm using one of the oldest P.A.s in the world," says Snyder in reference to the mid-'80s system design. "It's just that it's a really good P.A.—a five-way system, which is really hard to find nowadays. It fits what we do, because we are a '60s/'70s rock band that's moved into the '90s. We are using a lot of new stuff, but the basic sound of the Allman Brothers hasn't changed. It still is Marshall amps and the Hammond B-3. We've done some changes in the past ten years; digital crossovers came out, so we've been able to time-align the delay in the crossovers and we sometimes even do offsets between the 18s [in the P.A.] and the bass rig onstage. We couldn't do that ten years ago."

Designed by db Sound's Harry Witz, the Allmans' sound system is made up of db Sound HD series components loaded with JBL drivers and Electro-Voice Manifold Technology system models, all driven by Crest 8001 and Crown

BY RUSSELL H. TICE



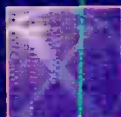
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PSA-2 amplifiers. At the Beacon Theater, the nine cabinets comprising each of the L/R side stacks included two EV MTL-4s, one HD-B, four HD-4s and two HD-3s. (The HD-B is a folded bass, horn-loaded with four 15-inch woofers; the HD-4 is a full-range four-way cabinet containing four 15s, one 12, a 2-inch horn and "bullet" tweeters; the HD-3 is a three-way cabinet featuring two 12s, two 2-inch horns and four bullets.) Additionally, across the front of the stage are four EV DML 1152s, each containing two 15s and a 2-inch horn. "We went in

the first year with just the nine boxes a side," says Snyder. "There were problems downstairs because of the volume that the band plays onstage. I've had people in the first ten rows—and they're right in front of the Marshall rigs—come back during the intermission and say, 'I'm not really hearing the vocals or the B-3 the way I'd like to hear them, and I'm right up front, shouldn't I be able to hear them?' We added the DMLs the following year to try and supplement. The four mono cabinets across the front are fed off a matrix into which I feed vocals, keyboards and drums, no guitars." A center

cluster of six DMLs was added during the second year to aim more top end at the top audience rows.

Walking through the entire venue, it becomes obvious that the best seats in the house are not in those coveted first ten rows. Snyder agrees: "I think the mid-balcony [about 20 rows back and 20 feet above the floor] is probably the prime listening spot. You get a more honest mix of the building."

For his FOH console, Snyder selected a Gamble EX56. "Prior to selecting this system I'd been out touring with the Gregg Allman Band and the Dickey Betts Band," he explains. "I had a lot of opportunity to try out different consoles, pretty much anything and everything that existed. I chose the Gamble EX56 basically because of its preamps. It's the best-sounding board, especially for this band, that you could possibly have."

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TRUE TO THEIR ROOTS

Although the band avails itself of audio advancements of the past three decades, they remain true to their roots, even down to employing roadies Joe Dan Petty and "Red Dog," who have been with the band since the very beginning and are as well-known to hardcore fans as the bandmembers are. Petty concentrates on Dickey Betts' guitars and vintage Marshall amps; Red Dog handles the drums, a job that has expanded to include a three-man rhythm team of original drummers Jaimoe and Butch Trucks, plus percussionist Marc Quinones, who has been with the band since 1991. "When we first started out, we had two sets of drums, Jaimoe had his congas, and that's all we had," recalls Red Dog.

Today, the drum setup is the most complex aspect of the band's stage show and requires nearly 30 microphones. "Jaimoe's kit is a total traditional jazz set," explains Snyder. "Small drums, heavy wood, no hole cut in the kick. The kick is miked from behind and is a snare mic as much as it's a kick mic, and vice-versa with the snare. They both run through the compressors, but the threshold is set way up so they're barely getting any compression. I use a Beyer M88 on the kick and a 57 on his snare. Then I use a Sennheiser 504; now it's called a 604. It's a cheap version of the 421, but because of its size and your ability to move it around the drum, I actually like it better than using the 421. The rack and floor toms are all 504s. The overheads are AKG 414s.

"Butch's set is just a straight-ahead late-'60s/early-'70s rock drum kit—

Shure SM91 on the kick, Beta 56 on the snare, 504s on the two racks, 504s on the two floors, two 414s on the overheads. For the timpani, I use an RE20 on the bottom end and two Shure SM81s Y-ed. Which takes us to percussion, Marc Quinones. We start with a timpani bottom mic which usually is a 421. The overhead on the right is an AKG 414. A Beta 57 is split between the two bongos. The two congas are Beta 57s. He has a cowbell that he plays with his foot and a cowbell that he plays with his hand. Those two are Y-ed and miked with 57s. Then we go to the toys [various percussion pieces]—the stage left overhead is the AKG 414. Then we move to his gong. The bottom input is an SM58. The top end of the gong is an SM81 condenser.”

The guitar amps of Betts and Jack Pearson [who has since been replaced by Butch Trucks' nephew Derek Trucks] are miked using standard mic choices: an SM57 and a 421. Rather than EQ'ing the channels, Snyder gets the desired guitar tonality by blending the two mics. Acoustic guitars go into DIs. The bass guitar, played by the phenomenal newcomer Oteil Burbridge, goes through an SVT with two 15s and eight 10s using a

combination of DI and a Beyer 88.

“I prefer a Shure Beta 57A for vocals,” Snyder continues. “I go straight through one of the channels, no EQ except for a little highpass to get rid of some of the bottom and give it a little separation in the mix. There are no limiters on any of the vocals.” Although an incredible singer like Gregg Allman needs no help to make his voice sound great, Snyder has a Drawmer 1960 stereo tube compressor strapped across the vocal subgroup. “The thresholds actually run at about +5, +10,” he notes. “I very seldom touch the compression—maybe where five of them are singing. I just play right around the threshold so you hear the tube sound. If I pop the tube out you'll hear immediately that it's a much warmer sound. I'm not big on gates or compressors; I never have been.” Snyder also uses a Drawmer 1960 stereo tube compressor on the guitar subgroups and has a 2-channel Tube-Tech compressor inserted on the bass DI and mic inputs.

The Hammond B-3 Gregg Allman uses is of the same vintage as the Marshalls and is connected to a Leslie 142 speaker: “It's miked in stereo,” notes Snyder. “Normally I use an RE20 on the

bottom of the cabinet. Now I'm using a Shure B-52 that I'm trying out; I still haven't made up my mind which I really like. Normally I use 57s on Leslie stage right and Leslie stage left to get the stereo image around the horns. The piano [an Ensoniq] is just a stereo DI left and right out.”

A STRAIGHT-AHEAD SOUND

When queried regarding the effects used for a band with such a straight-ahead sound, Snyder notes, “Reverbs are real simple with the Allman Brothers—they're not into effects. I use reverbs more to blend the mix than anything. I've gone from all kinds of reverbs to really simplified right now. I'm using a Lexicon 300 for vocal sounds and guitars. I'm using a Lexicon PCM 80 on the drums and percussion and a little bit on the acoustics. I always use a Yamaha SPX on vocals and guitars. I use a pitch-change on the vocals and guitars. I pitch it up and down, both sides. I just use pitch and left and right delays about nine cents up, nine cents down. And then I put a little flange/phase as far as the delays between the two of them. And I also use an old slapback, the Roland 3000.

“Because I only have 56 inputs on



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LIVE SOUND

the console, I have a 24-channel Mackie sidecar to run effects back through. All the reverbs come back through as a stereo patch to the main console and then I slap 'em back against the delay unit and then blend those."

Monitor mixes are handled by Earl McCoy, who worked his second Beacon run with the Allmans this year. McCoy uses a Midas XI-3, which has been in the band's setup for a few years. "The unique thing about this monitor system is that not all the mixing is done from this console. We have two submixes going onstage with the drummers," explains McCoy. "Butch and Jaimoe both have their own little Mackie submixers so they can control things like guitar volume and vocal volumes right there. As far as monitors themselves go, they're all EV FS212 boxes, which have two 12s and a 2-inch horn. They're powered by Crown 36X12 Macrotech amplifiers with a pip card crossover set at about 1,250 Hz."

In a world where most bands are running on MIDI and samples, it's somewhat heartening to hear that McCoy's main problems are somewhat old-fashioned. "The biggest part of mixing the Allman Brothers is cueing the vocals on time, because Jack and Dickey—mostly Dickey—play pretty loud out there. Most monitor engineers will leave the vocals on so they don't have to worry about muting and un-muting, but Dickey plays at such a volume that the vocal mic actually picks up quite a bit of his guitar, so we had to go to muting the vocals until they're being sung. They all come in at different times so you have to be pretty quick with your fingers on the mute buttons. I don't use any gates at all—they don't really like the sound of gates."

As they enter their fourth decade together, the Allman Brothers have endured, prospered and crossed over generations to the point where a large percentage of their ardent fan base weren't even conceived at the time their first album was. They are also, perhaps, the only band from their era still putting out new material that is readily accepted into their concert repertoire. The songs from their most recent studio efforts draw as much, if not more, applause than their time-honored hits, proving that, for the Allman Brothers Band, the road might indeed go on forever. ■

Russell Tice is a New York-based writer and engineer.

—FROM PAGE 182, *HARD KNOCK LIFE*

subharmonic synthesizers on the DJ tracks, each synthesizer tuned slightly differently for "knock" at 60 to 80 Hz, and "boom" at 30 to 40. "The majority of DMX tracks have an 808 drum machine low end, and the dbx lets me add those Miami-wide sub-lows to the system without overpowering it," explains Price. A pair of Yamaha SPX990 processors, set on Reverse Gate and Stereo Hall, add ambience to the DJ tracks. "I use them to create a synthetic 'loud,' because there's parts where I have to pull the track down, but I don't want to lose its strength," Price explains.

MONSTROUS LOW END

The main speaker arrays are Turbosound Flashlights in a six-wide, four-deep configuration, with Floodlight under-hung cabinets below and a couple of three-deep Floodlight columns for side coverage. These are powered by BSS amps and use a three-zone drive rack at FOH with BSS/Turbo processors and Klark Teknik DN3600 programmable graphics. The monstrous low end demanded by the show is supplied by 48 TMS-21 subwoofers, stacked eight-wide, three high toward each side of the stage.

Carlton "Phrogg" Brown, an old MSI hand who has toured with Busta Rhymes, R. Kelly and The O'Jays, mixes monitors for all three acts on a Yamaha PM4000M, assisted by Aaron Graves. The input list comprises wireless and hard-wired Shure vocal mics and DI inputs for each DJ. A dozen channels of Shure U2 cover the wireless needs for all three acts, and the ability to change capsules quickly is helpful. "I use Beta 87s for Redman and Method Man and then switch to Beta 58s for DMX and Jay-Z," Brown explains. "Some of the transmitters are shared, but the capsules get soggy if you don't change them out." He also adds that the ability to change frequencies when last-minute RF problems crop up is vital. "I don't know if it's walkie-talkies or cell phones, but sometimes everything's fine at soundcheck, but just before the show we start getting hits."

All monitors are powered by Crown MacroTechs, mostly 2400s, and Crown PIP cards are used for crossovers on the wedges. Each sidefill is a pair of Floodlights stacked on top of four 21-inch Turbosound subs at each side of the stage, and these are used mostly for DJ music. Pairs of Apogee 3x3 speakers flown above those spread the vocals around the stage.

Across the front are four pairs of Eighth Day's proprietary single-15 floor monitors. These downstage wedges are run as a single mix and are symmetrically paired from the center-line outward so they can be delayed with a single BSS 804. Delay settings of 18.5 to 8.5 feet gradually compensate for the additional time it takes for the sidefills to synchronize with the wedges. "There's so much in the flown sidefills that the delay is needed to bring the front line up and in your face," Brown comments. "When I turn the delay off to compare what it's doing, the wedges just vanish."

Redman and Method Man's twin DJ setups each have a double-15 wedge. "Besides five wireless running all around the stage, there are two hardwires for the DJs with their wedges pointed right at them, so as soon as he moves his head, everything in his mix goes right into the mic," Brown says. Putting their vocals in the sidefills keeps it safe. "Everybody says, 'Make me louder than them,' so I have to keep chasing it a little bit, take one up while he does his verse and then take it back down." Another upstage position used by both DMX and Jay-Z's DJ has a stereo pair of single-15s.

"We had to turn down the woofers in the DJ wedges so the turntables wouldn't skip," Brown comments. After the switch to the 360 Systems Instant Replay, the DJs were heard to say "that's what I needed all along."

INSTANT REPLAY IS THE WAY TO GO

"It was difficult to convince them to go with the Replay because the DJs all have vinyl," Price says. "Jay-Z was the first one to say, 'Okay,' so we went into the studio right after the Grammys, laid in his songs, came into rehearsal the next day, hit it, loved it and now we have five machines out with us." Each DJ has his own machine, and, with 24-hour capacity hard drives, each holds all the songs, backing the others up in case of failure. Because Price programmed every song into them, there are few surprises the DJs can spring on him. "The sound quality beats a DAT machine, and you don't have to worry about dropouts, it getting erased or the tape breaking, plus it's instant start," he continues. "I give the DAT machine one more year before word gets out that Instant Replay is the way to go." ■

Mark Frink is Mix's Sound Reinforcement editor.

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LIVE SOUND

—FROM PAGE 183, GEORGE STRAIT

SECRETIVE DEVELOPMENT

The result of a long and secretive development collaboration between Showco and Harrison, the Showconsole system consists of a 6-foot-long digital control surface and a three-wide audio processing rack that is normally situated on or near the stage and contains all of the audio cards and I/O interfaces. An automation computer in the processing rack executes all changes to routing and signal processing, as instructed by the digital control surface via a fiber-optic link. Any fader moves or EQ changes at the control surface are immediately executed at the audio processing racks. Since no audio passes through the control surface, any interruption in the digital data stream passing between the control surface and the processing racks is effectively inaudible—all audio assignments, levels and EQs remain frozen until the system resets and the control surface picks up where it left off.

"Having spent most of my life as a working mixer, I was absolutely determined to make the Showconsole as bul-



George Strait FOH mixer and production manager Paul Rogers at the Showconsole.

letproof as possible," says Page. "There are complete backup computers for both the console and the processing racks, and since you don't lose audio at any time, you can turn the console off and on again in the middle of a show."

Redundancy and fail-safe operation were high priorities for the console designers. Showco's design specification also stressed that the new board must

be, if not familiar, at least immediately understandable to any road engineer. "We're a rental company, so almost anyone has to be able to sit down and be able to mix on it straight away," says Page. "The board has lots of advanced routing functions and automation options, but an engineer has to be able to get comfortable with the signal flow straight away. The term 'digitally controlled console' is going to cause a bit of fear in some people anyway, so you can't subject new users to a steep learning curve."

FAMILIAR LAYOUT

In fact, the Showconsole closely resembles a traditional analog mixing board, with two 20-fader input sections flanking the centrally located 16-fader sub-grouping and auxiliary master sections, which are stacked one above the other. Under the operator's right hand is a central control section that includes numeric keypads (to recall favorite presets or to select channels or cues by number) and a trackball to point and click on a monitor screen embedded in the meter bridge. Immediately above the automation/recall control section are arrayed the familiar components of a tra-

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LIVE SOUND

ditional channel strip—mic input trim and pan, 4-band parametric EQ, 16 aux sends and a full dynamics section. As on other digitally controlled consoles, there is only one "input strip" for the entire console; the operator simply selects the desired channel and all of the input, EQ, dynamics and aux send controls instantly reset to that channel's settings.

Though there are only 40 channel faders, they may be used to control up to 80 "live" inputs in two banks. Illuminated switches above each input fader

select between the two inputs, and an LED "scribble strip" above the faders identifies both upper and lower inputs, either by number or with a user-defined, four-character label. Similarly, the 16 aux send masters can control twice that number of aux sends and/or matrix outputs. This banking scheme allows the Showconsole to easily handle 80 inputs, which may be grouped in up to 16 virtual subgroups and routed to as many as 32 aux or matrix outputs, in addition to four stereo main outputs. Further, because each input may be switched among three mic inputs and one line input, the Showconsole can in-

stantly switch among 240 mics and 80 line inputs.

"That's not the way I run the console, because with George Strait's band I don't have a bunch of different types of scenes to look at," says Rogers. "In other words, pretty much all my mics are on all the time. But if you were doing somebody like Phil Collins, he'll go from a full-blown orchestra with 100 channels to just him and an acoustic. So you can set up a song list on the computer and just click down to each song and it will reset completely to what you want that song to be." The Showconsole system is capable of recalling up to 10,000 individual cues, more than enough for the most complicated Broadway show, TV awards show or effects-heavy rock extravaganza.

CHANGEOVER AND ISOLATE

Though the Showconsole's ease of cue recall may have been underused for Straitfest, one interesting feature ensured that between-sets announcements and music playback were uninterrupted when the board was switched to a line-check mode. An Isolate function allows any input, group or aux fader to be isolated from the automation system so that, for example, the announce mic and CD playback inputs could be left on while the board was switched to an all-mute or standby mode while the next band's inputs were checked. On an extensively automated show, the Isolate function allows a mixer to add guest musicians without worrying that the next recalled cue might mute the extra inputs.

We're doing multiple acts all day long, yet we're using just the one console to do it.

—Paul Rogers

Another clever touch is the inclusion of an assignable pot for every input channel. Normally inactive, the assignable pot may be individually selected to function as an input gain, pan or aux send control, duplicating functions normally controlled by the central channel control section but placing a dedicated control nearer to hand. An engineer can even use the assignable pots as level controls to bring the 40 "hidden" channels to the surface at the same time as the fader-controlled inputs. The space

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above the rotary pots—real estate taken up by EQ and aux send sections on a traditional console—is dedicated to a channel-display section that includes status indicators to show input and mix bus assignments, and LED ladders to show input levels and gain reduction when the dynamics section is in use. Large-scale 40-segment output meters in the meter bridge are marked in VU and PPM scales, though Showco's Page says that the actual meter ballistics are a hybrid of the two standards.

"Some of the Showconsole's fea-

tures, like the meter ballistics and the screen interface, are still being refined," says Page. "As we get more experience with the board on different types of shows we may modify the software, but the basic form won't change. We've proven the concept, the board is roadable and stands up to real-world conditions—we had a dust storm a few weeks ago at the Sun Bowl in El Paso—and the mixers all like it." Just the day before the Oakland show, Showco delivered a second Showconsole for the Saturday production, preloaded with all of the current Straitfest show cues. And, provided the bands' monitor engineers

prove as compliant as the FOH engineers, Straitfest 2000 will probably feature one or more Showconsoles onstage as monitor boards.

LINE LEVEL RETURN SNAKE

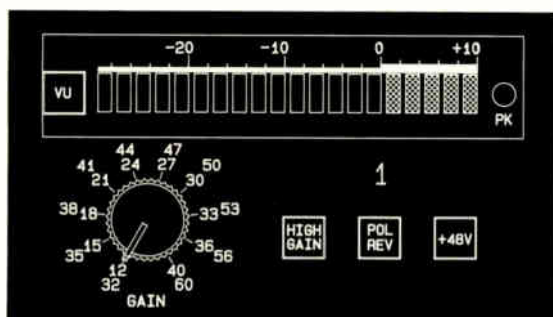
As Page and Rogers readily concede, audio requirements for Straitfest are far from complicated; none of the acts consumes more than 32 inputs, and the only notable differences among the seven lineups were the numbers of fiddle, banjo and backing vocal inputs. Though the Showconsole offers gates and compressor/limiters on every channel, few of the mixers used them extensively. "I have no gates on at all, and the only compressor I use is on the bass guitar," says Rogers. "But I am a very old-style type of mixer—I use as little outboard gear as I can. In fact, the only outboard gear I use is two reverb units—Yamaha SPX990 and REV5 units."

Because there is no audio in the Showconsole, reverbs and other outboard processors must be plugged into a line-level return snake that runs back to the audio processing rack at the stage. And since the Prism system front end rack is designed to be located at the mix position, the Showconsole outputs must also be brought back to the FOH position. In the future, reverbs may be located onstage and manipulated via MIDI, but Page concedes that most engineers will likely want to keep their favorite effects within knob-twiddling distance.

Having chosen to debut the Showconsole on a demanding multi-act tour, Page is justifiably proud of the system's technical performance and reliability. But it is the sound of the Showconsole that has impressed those who have worked with it—several of the Straitfest FOH mixers volunteered positive reviews unasked. And though he is not sure whether the Showconsole is responsible, Rogers notes that overall sound quality for the Straitfest has improved. "It was a real surprise," he muses. "When you have seven different mixers, obviously you'll get seven different sounds, but last year it was radically different to the point that we had meetings about it. This year, I'm not saying it's the console, but it has all settled down. I don't know if that's [a result of] better engineers this year, or what. I think it has something to do with the fact that we're all starting at the same ground zero—there is a consistency." ■

Chris Michie is a Mix technical editor

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HARRISON MEETS SHOWCO

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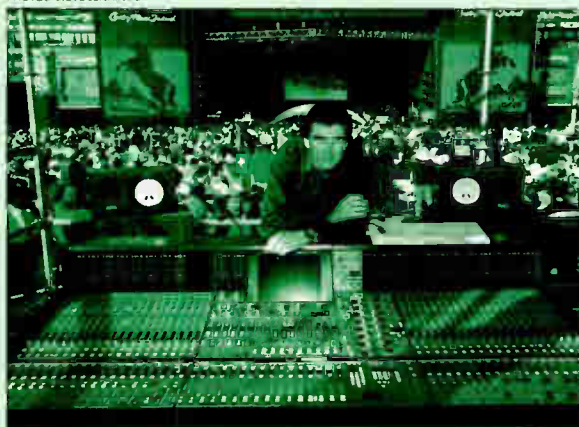
Though development of the Showconsole was initially driven by a very small group within Showco ("Only the president, the owners and myself knew about it," says Page.), Harrison soon recognized the wider market opportunity for the system and is now separately marketing it as the Harrison Live Performance Console (LPC). Under the terms of its agreement with Showco, Harrison will initially sell the LPC into fixed installations only, leaving Showco a clear field in the sound rental business. *Mix* asked Harrison's marketing director Steve Turley and LPC project manager Kevin Reinen about the similarities and differences between the LPC and the Showconsole.

"Harrison intends to optimize this console for theater and fixed venue markets," says Turley. "The LPC will be primarily aimed at large theaters, such as those in Las Vegas and on Broadway, plus houses of worship. Software engineer Casey Flester will be making some software changes that will enable us to better address that market, but the basic consoles will be similar. For example, the Showconsole offers up to four stereo outputs, but with eight output buses, the system can easily be configured for 7.1. Remember, at Harrison we often modify our large consoles for specific clients, so that's not new for us."

The LPC shares a common audio heritage with Harrison's other console lines, but there is not much carryover in terms of the design and manufacturing process. "Most of the LPC manufacturing is surface-mount," explains Reinen. "Also, we went to a PCI-based system with this console, whereas the SeriesTwelve is a Nubus platform. Some of the circuits for the LPC audio cards are older Harrison designs, but that just makes the console sound good!"

Though Harrison's network serial protocol is proprietary, the LPC is based on a standard hub-type network architecture. Hardware engineer

PHOTOS: STEVE JENNING'S



Showco vice president Howard Page with the Showconsole at the Oakland Coliseum, May 1999



Showconsole audio processing rack. A and B mic inputs for up to 80 channels are input via standard multicore connectors. 80 C inputs are on XLR connectors, and the 80 line inputs appear at the TT patchbay.



Center console section showing Remote Grouping faders and MixMaster section. Mic input, EQ and aux send sections are at upper right.

Michael Webster notes that all connections are made with Ethernet-style jumpers, easing field maintenance. The four-conductor Ethernet cable carries clock, sync line, data in and data out signals at Ethernet speed, with a 160 megabits/second capacity. Updates occur 240 times per second, every 1/4-frame, resulting in 1/4-frame accuracy.

"GRUNT" DISTRIBUTED PROCESSORS

All of the LPC's control surface faders and pots are motorized, and recall and calibration functions are controlled by locally mounted "grunt" distributed processors that constantly take data snapshots of the local control surface. A so-called "concentrator" card queues all of the grunt snapshots and sends them back to the PCI card in the correct order. The PCI card then instructs the audio processing rack via a copper or fiber-optic link as to which audio channels to update. Digitally controlled analog circuitry then changes the analog EQ, or whatever parameter is being adjusted by the engineer.

Because all electro-mechanical devices can "drift," the reboot process automatically recalibrates all of the console's pots and faders. The grunt processors run all of the pots and faders to their maximum and minimum excursions and then reset the zero marks, a process that takes less than 15 seconds. Thus, any stored parameter may be recalled with exact digital accuracy, even if the physical control has drifted from its nominal center. And cues created on one LPC may be loaded onto another LPC and recalled with absolute accuracy.

"There's a zillion motors in that thing," laughs Turley, commenting on the digital control surface's analog-like weight. "The internally mounted power supplies have been removed in the latest versions, but it's still pretty hefty without them. The board has to be roadworthy, so it can't be a lightweight console made of plastic and stuck together, it has to be pretty solid. This console has a lot of steel in the frame to make it absolutely bulletproof."

BY CHRIS MICHE

New Sound Reinforcement Products

MACKIE M•800 POWER AMP

Mackie Designs (Woodinville, WA) introduced the new M•800 power amplifier, the newest member of the FR™ Series family (which includes the M•1400, M•1400i and M•2600 power amps). Maximum power ratings for the M•800 are 800 watts at 4 ohms bridged, 550 watts at 8 ohms bridged, 400 + 400 watts at 2 ohms stereo, 275 + 275 watts at 4 ohms stereo and 140 + 140 watts at 8 ohms stereo. Key features of the two-rackspace M•800 include a distortion figure of less than 0.0007%, 20-20k Hz, a limiter, two 12dB/octave variable low-cut filters, and switchable, variable frequency, Constant Directivity Horn EQ. I/Os include XLR thru outputs, ¼-inch jack and five-way binding post outputs. The M•800 is supported by a five-year warranty.

Circle 314 on Product Info Card

SOUNDWEB REMOTE CONTROL

BSS Audio (Nashville, TN) introduced the Soundweb 9010 Remote Controller, a six-button programmable interface that provides control of multiple functions and parameters within a Soundweb DSP configuration. Dubbed the "Jellyfish" by BSS, the 9010 is programmed via Soundweb Designer software, and a simple drag-and-drop interface requires no coding or scripting. Functions, controls, presets and security parameters may be mapped to any of the buttons and manipulated via the integral rotary encoder; the interface may be tested in emulation mode. Featuring an internal capsule microphone (usable for paging) and an external mic input, the unit also offers two line-level outputs and a GPI port. Designed to be installed in a wall mount, the 9010 fits



any standard three-gang electrical box. Price is \$1,400.

Circle 315 on Product Info Card



RENKUS-HEINZ ULTRA-COMPACT TWO-WAY SPEAKERS

Renkus-Heinz Inc. (Irvine, CA) introduced the TRC51 Ultra-Compact High Performance Speaker System, a two-way speaker that uses Renkus-Heinz's Complex Waveguide technology within a unique multi-angle cabinet design. Available in active, passive and transformer-isolated versions, the TRC51 is a two-way system with a 5-inch cone woofer and a 90°x90° Conical Waveguide driven by a dome tweeter. The passive TRC51 features a frequency response measuring flat from 150 to 20k Hz and is capable of 113 dB SPL peak output. The active version, the TRC51PS, includes a 60-watt power amplifier that can operate at either 110V or 220V. The TRC51T is a 70/100V version. The molded enclosures are made of thermoplastic resin.

Circle 316 on Product Info Card

MACKIE INDUSTRIAL BID SOFTWARE

New from Mackie Industrial (Woodinville, WA) is a Windows 95 software application that automates bid proposal/documentation chores for pro sound contractors. Preloaded with Mackie product specs, the application's open database accepts an unlimited number of additional product descriptions.

Once a bid proposal is accepted and the project is started, the program can automatically print owner's manuals and warranty documents.

Circle 317 on Product Info Card

YAMAHA BID CD-ROM

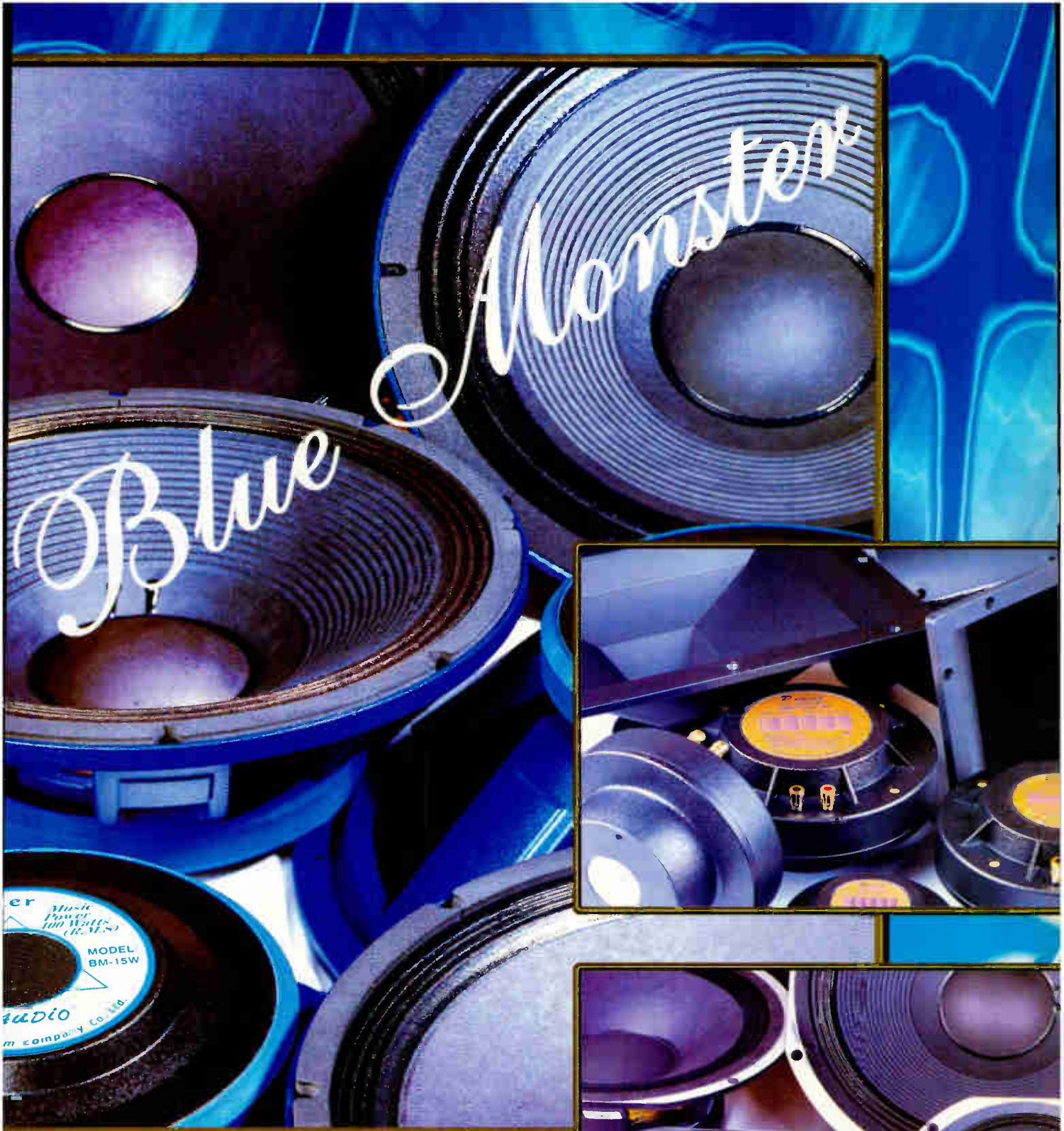
A CD-ROM from Yamaha Commercial Audio (Buena Park, CA) enables contractors and architects to insert Yamaha product descriptions directly into engineering drawings, presentations and bids. The CD-ROM, which is free to qualified users, includes .DNF and .PDF product drawings, photos and architectural specifications; a bid calculator; a presentation builder; plus product profiles and application guides.

Circle 318 on Product Info Card

TURBOSOUND'S FIRST SELF-POWERED SPEAKER

Turbosound (distributed by Audio Independence Ltd., Middleton, WI) has introduced the THL-1SP, a self-powered, three-way, full-range enclosure incorporating a custom-designed dual-concentric 12-inch/1-inch bass driver and a 6.5-inch TurboMid mid/high driver. The built-in low-frequency and mid/high-frequency power amps provide 800 Watts into 4 ohms and are optimally matched to the drive units, with integral RMS limiting and dynamic response tailoring. Frequency response is 55-20k Hz ±4 dB, with a dispersion angle of 60°H x 40°V; maximum SPL is 133 dB continuous. The THL-1SP enclosure measures 23x16x14.5 inches. A non-powered version is also available. Turbosound has also introduced two new wedge monitors: the bi-amped TFM-230, which features a 12-inch/2-inch coaxial driver and a very compact footprint, and the TFM-212, a passive low-profile wedge that includes a 12-inch LF driver and a 1-inch HF driver on an asymmetrical horn. The TFL-118, a new addition to the Floodlight range, offers a single horn-loaded 18-inch woofer in an enclosure designed to be flown with Floodlight systems; key-hole flyplates are standard.

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STILL COOKIN'

by Robyn Flans

Sitting in his living room sipping a glass of wine, the Red Hot Chili Peppers' new album, *Californication*, blasting in the background, drummer Chad Smith can barely contain his excitement. He's quite proud of the record, which marks the departure of guitarist Dave Navarro and the return of former axe-man John Frusciante. "There's a definite chemistry that happens with the four of us, and it went so smooth," Smith says. "When we're able to just bang the songs out and we're only concerned with trying to get good performances, it's very easy. And when it goes easy, it's fun and everybody is in a good mood."

The band began their creative process in bassist Flea's garage during the hot L.A. summer of '98. The music grew out of sweaty jams within this very democratic unit. "If somebody's playing something that one of us doesn't like, we're very honest," Smith explains. "We're lucky that we're not afraid to say, 'I don't really like that,' or, 'That part sucks.' And if the reply is, 'But I really like it,' you can still say, 'No, man, I'm telling you, you don't hear it.' The worst thing, though, is if someone says 'I don't like it' without being able to give a reason why. You always have to explain why. And if someone doesn't like something, adamantly, even if everyone else does, there's no reason to pour something down

someone's throat. It's never going to work anyway if someone is not there. So we move on. We've got lots of ideas.

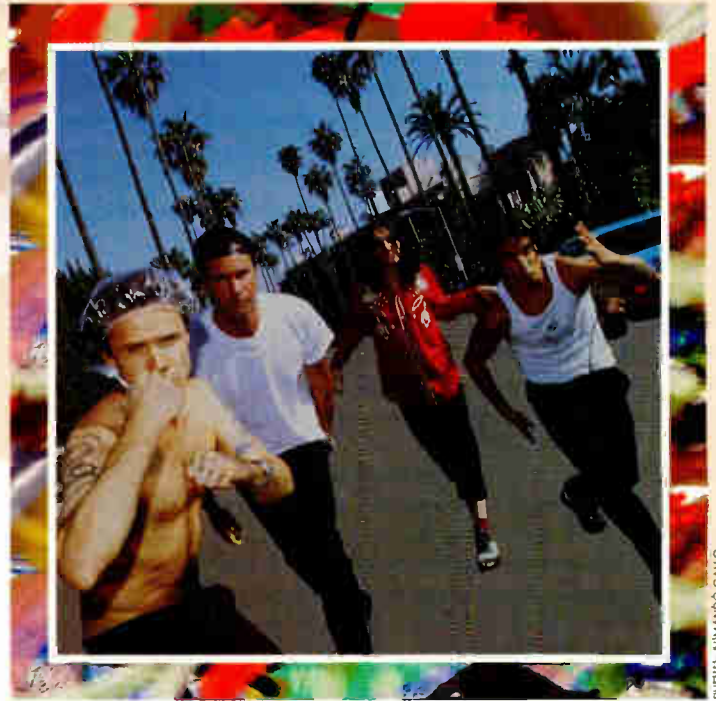
The only thing on this record like that was 'Californication,'" Smith continues, "where Anthony [Kiedis, lead singer] really dug it and wanted to work on it, but we had wrestled with it and even hated it. Anthony had the words early on, and we had some music to it, but we struggled with the arrangement because it was kind of boring. No one was excited about it except Anthony. We were already into pre-production with Rick [Rubin] when John took the words home and came up with a simple guitar part for it. He brought it to the next rehearsal and it was completely different. He's so good at that. He quit the band [years ago] and got into drugs really bad and hit bottom, but he's come back to the band so focused. He's been instru-

mental in the way this record sounds. And once he came in with a couple of new parts for 'Californication,' we were able to turn it into one of the best songs on the record."

So if the music came together relatively easily, then why did this record take so long? Smith laughs as he explains: "It didn't take long once we started writing it. We cut the basic tracks in seven days—23 tracks! Six years and seven days!" Six years had elapsed since the band had begun work on their last record, *One Hot Minute*. The delay was apparently due to personal problems that interfered with their productivity.

Although Smith has a bit of a wild-man reputation, drugs are not part of the picture. "The worst thing about drugs is that people get consumed by them and nothing else matters," he says. "Things get done, but it takes

—CONTINUED ON PAGE 208



From left: Flea, Chad Smith, John Frusciante and Anthony Kiedis

PHOTO: AIMANDO GALLO

"IRVING BERLIN IN HOLLYWOOD"

REVISITING THE
COMPOSER'S MOVIE
CLASSICS

by Barbara Schultz

Among the most inspired and significant bodies of work that the reissue geniuses at Rhino Records have undertaken is the Rhino Movie Music/Turner Classic Movies series. This arrangement between two companies at the forefront of their fields has led to the release not only of remastered soundtracks for classics such as *The Wizard of Oz* and *Gone With the Wind*, but also of the first-ever-available scores of *Casablanca* and *Meet Me in St. Louis*, among others.



Irving Berlin in Hollywood was edited and mastered in Doug Schwartz's room at Audio Mechanics.

There have also been a number of outstanding collections created especially for the Rhino/Turner imprint, including *The Gershwins in Hollywood* double-CD and a more recent gem, *Irving*

Berlin in Hollywood.

The Berlin CD contains an impressive selection of some of the most popular recordings ever made for American musicals, representing films such as *Top*

Hat, *Alexander's Ragtime Band*, *The Jazz Singer*, *Easter Parade* and more. There are also outtakes from some of the films, including rare beauties such as the version of Judy Garland and Howard Keel singing "They Say It's Wonderful" from *Annie Get Your Gun*, recorded before



Garland had to drop out of the film.

Like most of the Rhino/
—CONTINUED ON PAGE 206

IN "PRAISE" OF JAZZ GREAT ROY HAYNES

by Eric Rudolph

Roy Haynes is a something of an under-appreciated gem amid the treasure trove of America's great jazz veterans. The 73-year-old drummer is not particularly well-known as a leader, but that was hard to believe in Manhattan last August when Haynes had the spacious Birdland club packed to the walls. The diminutive, shaven-headed Haynes, who began his musical career in 1944, proceeded to play with the verve of a man one third his age, dri-



ving and inspiring his musicians—including the great young saxophonist David Sanchez—to one blazing peak after another. Along

with his astonishing jazz chops, Haynes plays and leads with a punch, showmanship and power that brings to mind the primal,

youthful exuberance of great rock drummers.

Though he's dabbled in jazz-rock, most notably with his '70s group the Hip Ensemble, Haynes fundamentally remains a jazz purist. When told that his playing appears to have the youthful spirit of the best of rock drumming, Haynes replies with a hearty laugh, saying "I'm sorry to hear that!" However, he's heard it before. "When we play places where there's a younger crowd," he adds, "the first thing some of the ladies comment on is the 'energy' that I play with. But it's how you do the energy; it's not just pounding your instrument. There may be a lot of power in my playing but it is still all about trying to draw a musical sound out of the drums."

—CONTINUED ON PAGE 210

KC & THE SUNSHINE BAND'S "THAT'S THE WAY (I LIKE IT)"

by Blair Jackson

When George McCrae's smash hit "Rock Your Baby" hit Number One in mid-1974, few could have predicted that it would usher in the Age of Disco. Listening to the song today, it seems so low-key and innocent. Catchy, yes, and there was that metronomic thump-thump beat and the percussive accents that got the heart racing, but how could something so simple lead to the greatest commercial music craze of the '70s, not to mention the vociferous Disco Sucks backlash? We'll leave that analysis to the sociologists. This is a story about the early days of the disco phenomenon, and one of the people at the center of it all, Harry Wayne Casey, the "KC" of KC & the Sunshine Band fame.

Born in Hialeah, Fla. (outside of Miami), in 1951, Casey was drawn to music at an early age, becoming an accomplished keyboard player by his late teens. Working for the local Tone Distributors, he learned about record retailing and distribution and also began working (for free) in the company's studio. There he met a young bassist and engineer named Richard Finch who, in 1973, became his writing partner and bandmate. "Miami was a happy place to grow up and listen to music," Casey told me recently. "There's an energy down here—Miami has always been special. We get music here that no one else in the country plays. There are always hits here that no one else touches. Miami has always loved uptempo things, dance music; a lot of variety. It's a happy environment. The beach, the late-night clubs, all the different cultures coming together—all those things affected the music we made when we were starting out."

In the beginning it was KC & the Sunshine Junkanoo Band that cut records for Henry Stone's local TK Records label. Junkanoo was a percussion-oriented pop dance music with roots in the Bahamas, one of many styles that popped up in local clubs. "We were a rhythm and blues band and we played almost exclusively in black clubs," Casey, who



PHOTO: ©MICHAEL DORIS ARCHIVE/EVERETT, CA

is white, remembers. "One time I went to this wedding and heard a junkanoo band there and people were blowing these whistles and there was this great beat going and I remember thinking, 'If I could capture this on record this could really be something; a new sound.' So on the plane I wrote 'Blow Your Whistle' and I went into the studio and started putting together this junkanoo band. The original idea was to have that as part of all the records we made at the studio [TK Studios in Hialeah]. I can't remember why, but we didn't end up using the junkanoo guys much after our first record. Maybe it was too hard to track 'em down every time, or something. So we dropped 'Junkanoo' from our name and became KC & the Sunshine Band." "Blow Your Whistle" was the group's first U.S. hit single and a club favorite in Britain, as well.

Initially KC & the Sunshine Band was primarily a studio group, a highly talented interracial unit that became the house band for TK Records. In fact, "Rock Your Baby" was written by Casey and Finch and began its studio life as a KC & the Sunshine Band song demo. "We took it to Henry [Stone] to get approval to record it, and he said, 'It's fine like it is; we just need to get a singer,'" Casey recalls. "George McCrae walked in the door, I hummed him the melody and he liked it, so we ran upstairs and put his voice on it." Casey and Finch shared production chores, and the track topped both the American and British charts.

Casey and Finch went on to write and record more hit tunes for McCrae and for fellow Miamian Betty Wright but spent increasing amounts of time

working with the Sunshine Band at TK Studios, a 16-track room that Casey says was "tiny; you could barely fit a group in there. But it was comfortable for us, and Rick [Finch] really knew his way around it."

The studio did have its limitations however, so Casey and Finch enlisted the aid of engineer Milan Bogdan (who, though still young, already had plenty of studio experience in his native Detroit, in Atlanta and Muscle Shoals) to help iron out some technical problems they were having at TK and to help them design and build a new studio in Hialeah—Sunshine Sound. That studio was quite an improvement over TK: It featured two rooms equipped with MCI consoles and 24-track recorders—an Ampex 1200 in one room, and an MCI 528 in the other. "The early MCI stuff was great," Bogdan says. "We modified the console and had transformerless mic pre's and built our own little current amplifiers. Since MCI was just down the road [in Miami], I could go in the back door and bring my modules and get parts and have them fixed. Sunshine Sound was a nice studio. We had a rehearsal hall that had a 24-foot ceiling in it with lights and mirrors. We had Sony ½-inch video decks in there and Sony color cameras, so the band could rehearse in there. They used to play every single day. We could work on live mixes and monitors, and the lighting guy could work on lights while the band rehearsed. We had a little shop in the back where we worked on gear for the road. We did the mastering there; we had a Scully lathe. We had everything we needed."

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In a burst of songwriting work toward the end of 1974, Casey and Finch penned a number of the tunes that would, the following year, propel KC & the Sunshine Band to international stardom, including "Get Down Tonight" and "That's the Way (I Like It)." Of the latter tune, Casey comments, "I remember I came up with part of it in the shower and some of it driving to and from the studio. It wasn't meant to be anything but a love song; it was nothing serious. It's real simple. I wanted something that people would remember and that would be easy to dance to."

"See, I'd worked at retail and people would come in and ask for a record and a lot of time they wouldn't know the name of it. They might know a couple of words in the chorus. And I thought, 'Well, people are going to know the name of my records!' Then I got to thinking about some of the songs I was writing as being too repetitious, but I looked at this Beatles record and it had 'She loves you, yeah, yeah, yeah/She loves you, yeah, yeah, yeah,' and I realized I was probably on the right track." The early versions of "That's the Way (I Like It)" were considerably more risqué than what finally came out on the record—Casey says the "uh-huh's," as sung by female backup singers Jeanette Williams and Beverly Champion "were a lot like the sound of people making love, but I was afraid it might not fly on radio, so we changed it."

Bogdan says that in the months before Sunshine Sound was completed, a core group of Casey, Finch, guitarist Jerome Smith, drummer Robert Johnson and, occasionally, Cuban-born percussionist Fermin Goytisolo, would work up live basics an 8-track version of Casey and Finch's tunes at Casey's house using a TEAC 8-track deck. Then, they would either re-cut at TK or, if the band had trouble matching the feel of the demo, dump the 8-tracks over onto a 16-track and build from there, adding percussion, vocals and sometimes horns.

In the case of both "That's the Way (I Like It)" and "Get Down Tonight," Casey says, "We recorded the original 8-tracks at TK and then we went to Criteria to do the horns and my vocals because we needed more tracks. Around that time, TK built another, bigger studio next door to the old studio, and we did some work on 'That's The Way (I Like It)' and 'Boogie Shoes' in that studio—a lot of percussion work and some vocals. Then we started building our studios and our entire third album was done there, with 'Shake Your

Booty,' 'I'm Your Boogie Man' and 'Keep It Comin' Love.' By then, of course, we had every piece of equipment known to man."

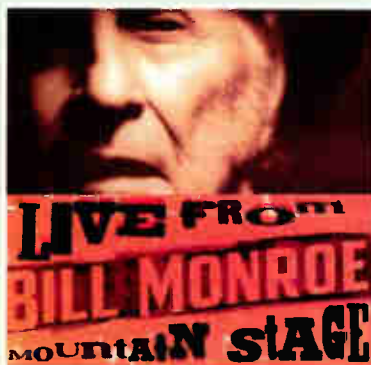
In Bogdan's memory, Sunshine Sound was operational by the time the single of "That's the Way (I Like It)" was mixed, though no tracking on the song was done there. In early 1975, KC & the Sunshine Band toured Europe to capitalize on their numerous chart successes there, and while they were in Britain "Get Down Tonight" became a break-away hit for the group, eventually hitting Number One in the U.S. the week the group returned to Miami. "They were pretty shocked when they got back," Bogdan says. "It was great. Everybody had worked really hard. It

gave everybody a new level of confidence because what they were doing was suddenly being accepted." The momentum continued building through the summer and fall: The group toured the U.S. drawing sold-out houses, their eponymous album, released in August, made it to Number 4, and in November, "That's the Way (I Like It)" rocketed to Number One in the U.S. and Britain.

"For a while there it seemed like every time I'd turn on the radio they'd be playing KC & the Sunshine Band or some group that sounded just like them," Bogdan says. "We heard the influence of the music everywhere, especially the percussion ideas. Rick and KC are the ones who came up with those ideas, all those cymbal parts, and figur-

Cool Spins

The Mix Staff Picks Their Current Favorites



Bill Monroe Live From Mountain Stage (Blue Plate Music)

This is the 20th CD release Blue Plate has culled from the exceptional syndicated live radio program *Mountain Stage* (produced by West Virginia Public radio), but the first to focus on just one artist. The nearly 40-minute set, recorded in May 1989, offers a spirited collection of mostly well-known bluegrass and old-time country tunes, including "My Sweet Blue Eyed Darlin'," "Muleskinner Blues," "Uncle Pen," "Blue Moon of Kentucky," "I'm Working on Building" (done in gorgeous four-part country gospel harmony) and "Roll in My Sweet Baby's Arms." Monroe is the chatty, convivial host, and his pickin', along with that of this edition of the Blue Grass Boys, is superb throughout. Monroe's lead vocal on "Blue Moon of Kentucky" is a little flat in places, but that's about the only flaw I'd care to point up on this consistently fine live outing. A fitting memorial to one of

the greatest musicians, songwriters and bandleaders America has ever produced.

Executive Producers: Al Bunetta and Dawn Einstein. Engineer: Francis Fisher. Recorded at the Capitol Plaza Theater (Charleston, West Virginia). Mastering: Erik Wolf/Wolf Mastering. —Blair Jackson

Naughty By Nature: *Nineteen Naughty Nine—Nature's Fury* (Arista)

As much as I love hip hop and rap, there



are relatively few albums in those styles that I can tolerate listening to from start to finish. So I always take notice of the ones that I can, such as Naughty By Nature's *Nature's Fury*. After an absence of four years, the trio is back, picking up right where they left off. All the tracks are classic Naughty—lots of uptempo grooves, stories about street life and clever vocal play. The beats and the lyrics seem to be of equal importance to this group. The interjection of creative samples on top of piano riffs and altered drum patterns provide a nice touch. Guest appearances on *Nature's Fury* include the likes of Master P.

—CONTINUED ON PAGE 212

ing out ways for the percussion to fill in the holes between the beats." Casey also credits drummer Robert Johnson for being "just impeccable." In this era before drum machines and sequencers, Johnson kept perfect disco time take after take, and onstage.

When Sunshine Sound was completed, that facility became the focus of the group's efforts. Usually KC & the Sunshine Band occupied the big pyramid-shaped studio ("We were into pyramid power at the time," Bogdan says with a laugh), and the other room would be used for outside projects Casey and Finch were involved with. "It was a good room for drums, and that was always a key thing when we were recording," Bogdan says. "We spent a lot of time changing heads and making sure the snare drums were perfectly flat. We might spend all day working on one snare drum—listen to it, take it to the shop, work on it. We might use four or five snare drums in a day. If you wanted a good, crisp snare with a lot of low end, it took a lot of time make that happen. Sometimes we'd have the tom heads on and sometimes they were off. We'd usually mic the top and bottom of all the drums, flip it out of phase. Usu-

ally we'd have dynamics on the snare; overheads were usually some type of Neumann or AKG tube mics. At Sunshine Sound we also had a long trap, like a chamber, in the ceiling that the bass amp [sound] would slide into, and

In the early versions of "That's the Way (I Like It)" the "uh-huh's" were a lot like the sound of people making love, but I was afraid it might not fly on radio, so we changed it.

—Harry Wayne Casey

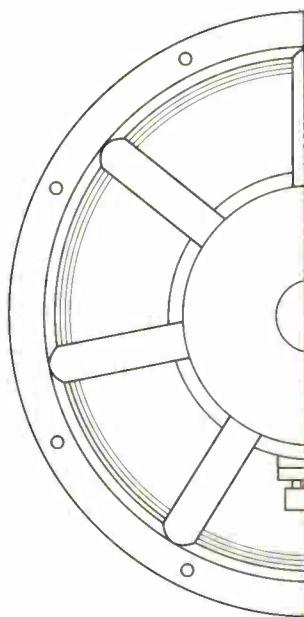
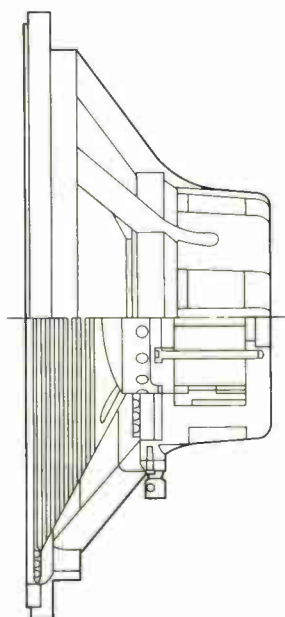
we'd mic it way up there. We were always trying new things."

Casey says that during the peak years of his group, "We would achieve

this amazing oneness in the studio. We'd get in there and things would immediately lock in; there was no stopping it. We kept things kind of loose, but at the same time controlled. I've never experienced anything quite like it, before or since, with a group."

KC & the Sunshine Band had an impressive chart run throughout the second half of the '70s, as disco swept the world. Their "Boogie Shoes" was included on the gazillion-selling soundtrack for *Saturday Night Fever*; giving them perhaps their largest worldwide exposure. By 1979, however, Casey was trying to move in some new directions, away from disco. "Do You Wanna Go Party" was more a retro funk piece, and the group's final Number One, "Please Don't Go" was a ballad. Following that hit, TK Records went bankrupt, and the group was in limbo for a while. Eventually they disbanded, and Casey signed a solo deal with Epic. In 1982 he was seriously injured in an automobile accident and then later he retired for eight years. "But I kept having people asking me, 'How come you're not making music?'" he says. "Basically, people pushed me back into music. And now I'm having a great time. They can't give me enough dates."

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Indeed, the '90s version of KC & the Sunshine Band (which includes original percussionist Fermin Goytisolo and singer Beverly Champion) tours successfully all around the world. Tracks by the band appear on countless disco and '70s compilations, and the group's own CDs sell briskly year-in year-out. "I think people are attracted to the old sound," Casey muses. "The '70s were the last decade of real music made by real instruments, before computers came in. It makes me feel good that people still want to hear this music and dance to this music. Evidently there was some substance to it. And it's still influencing people today." ■

—FROM PAGE 201, IRVING BERLIN

Turner releases, this CD was produced by Turner Entertainment's George Feltenstein. He originally conceived of the series when he was working for MGM/UA home video in the '80s and, almost accidentally, discovered an audio treasure trove. "In '89, we were producing a special restored video cassette of the film *Meet Me in St. Louis*," he explains, "and there was a song in that film that was cut before the film was released called 'Boys and Girls Like You and Me' sung by Judy Garland and written by Rogers & Hammerstein, and we knew that the film footage no longer existed. So, I asked, 'Well, are there recordings?' And a gentleman who had been in the MGM sound department and now worked for Turner for years said, 'Oh, yeah, we've got about a thousand reels right here.' And I walked into the vault, and sitting there were literally over 1,000 reels of recordings from all of the MGM films from the '30s, '40s and early '50s."

It didn't take Feltenstein long to realize what a magnificent opportunity had been revealed when those vault doors opened. "These audio tapes had not been touched," he says, "and on these tapes were not only things that we've heard before in the final films, but outtakes. And, more importantly, MGM pioneered recording their music with multiple microphones as early as 1931. Each microphone would be attached to a different optical film recorder, and they would take these optical pieces of film and mix them to create one monaural track; there was, of course, nothing like stereo reproduction at that time. Well, those separate pieces were saved onto ¼-inch magnetic tape, and these are the thousands of reels that I was looking at." In other words, he

would have the benefit of working with multiple tracks, recorded long before multitrack recording existed.

Some time later, Feltenstein moved over to Turner from MGM, following the deal that had been his brainchild. He now serves as a Turner senior VP of marketing, as well as producer of most of the CDs in the Rhino/Turner series. "[On any of these projects] first I put together a track listing," he explains, "a wish list of everything I'd want to be on [a given release], and then I also take into consideration what's been out before, what hasn't. [I try to] come up with a couple of rarities that the collectors would want that have never been out there before and yet make sure that if this is for someone who is a first-time buyer of this material, they're getting a cohesive, comprehensive overview."

Then the viability of Feltenstein's wish list is evaluated by Rhino's sales department and, once approved, is forwarded to the licensing department, "because, of course, not all the great Irving Berlin music is in movies within our library, even though we do have this huge, wonderful library," Feltenstein says. "For example, if you're going to do *Irving Berlin in Hollywood*, you have to think of having 'White Christmas,' but we couldn't get it. We were able to include some tracks from 20th Century Fox, though, and that was a personal thrill for me."

After a track list is finalized, Feltenstein goes to work researching the best sources. The source material, if on optical or magnetic film stock, is transferred to DAT or DA-88 at Chace Productions (profiled in last month's Post Script section).

The digital transfers or ¼-inch tape masters are then taken to Audio Mechanics to be mastered by engineer Doug Schwartz, who, you could say, has this type of music in his blood: His father was lead clarinetist in the Glen Miller Orchestra, and his mother was one of the Clark Sisters, who sang with Tommy Dorsey's orchestra; both had long, successful careers as Hollywood session musicians. So, he has a unique ability to appreciate these recordings. "Not only are you working with great composers," he says, "but you're listening to 60 to 90 of the greatest musicians of their, or any, time. This, for me, represents a certain apex of musicianship that today we only have a shadow of. There were so many great players and singers on staff at various studios, all able to sight-read flawlessly whatever was thrown down in front of them, and to be on staff at MGM

meant you were the crème de la crème. For me, it's a personal thrill to hear my parents performing, and many family friends as well."

Schwartz co-owns the two-room Audio Mechanics with his partner, John Polito. Schwartz's room is equipped with what he calls a "full-blown" Sonic Solutions system, with the complete suite of audio restoration hardware and software. He also uses a Studer A80 (with electronics modified by Patrick Weber Engineering) for playing back the 1/4-inch master tapes, and Wadia A/D converters. He listens on Dunlavy SC6 monitors. There are also Avalon analog EQs and compressors, and JVC digital EQ and compression. He's quick to point out, however, that he uses his chosen tools judiciously. "These historic recordings should be represented as they were originally conceived and produced," he says. "It's not my place to take them and alter them greatly or add effects. The MGM stage is widely regarded as one of the best recording stages ever built; its sound is very much a characteristic of MGM pictures. Digital reverbs can't hold a candle to that ambience.

"The only thing that we do that is an alteration and that is an accommodation

to today's taste is that, in the cases where we have the multiple angles of orchestras that originally were heard in mono, we will present it in stereo. They're discrete channels of orchestra that we are lucky to have, and to be able to line them up and give a greater sense of the space of the room is a great gift."

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—George Feltenstein

Schwartz and Feltenstein also get creative with their sources for some of these recordings, to create more fully realized stereo versions of the songs. One of the tracks that Feltenstein found particularly challenging (and satisfying) on

the Berlin collection was "Steppin' Out With My Baby" from *Easter Parade*, which was recorded in 1947. "The funny thing is that with a lot of the films that MGM did in the late '40s, a lot of recordings are incomplete or have disappeared completely," Feltenstein says. "There's a whole period from about 1947 to '50 where maybe they used a bad film stock, and these things had deteriorated by the early '60s. *Easter Parade* is one of the films for which very little of the actual prerecorded material survived. It was also one of the first Rhino/Turner albums, and it was done during that period where I hadn't left MGM yet. I didn't produce the album, and a lot of it, in my opinion, wasn't quite up to snuff in terms of what it could be sonically.

"With 'Steppin' Out With My Baby,' I found that we had the orchestra track to the beginning of the song and the choral track to the beginning of the song, but no Fred Astaire. What they used on the original album was basically a cleaned-up playback disc, so the song was there, but it was very midrange with a lot of hiss. I thought that if we could find the original mono soundtrack album master, we could use

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that in the center channel as Fred's vocal and then wrap the chorus around it to come up with stereo and make it sound great. But that required an enormous amount of painstaking work and editing with Doug. We did it, though, and when people hear this and compare it to how it sounded on the previous album, it's shocking."

Speaking of Astaire, working with tap dancing sounds is also a natural part of this process. The taps were not just part of a lavish movie spectacle; they were also important percussive elements in the orchestration of many of these songs. Schwartz says that, in most cases, MGM also recorded the taps to a separate microphone, so Feltenstein can decide when the taps serve as important parts of the arrangement, vs. when they might start to get in the way of an audio only version.

Another song that required a bit of treasure-hunting was "Colonel Buffalo Bill" from *Annie Get Your Gun*. "That movie was originally supposed to be made with Judy Garland and Frank Morgan," Feltenstein reminds us, "but Judy Garland, as we know, got ill and could not complete the film and it was recast with Betty Hutton. Also during that period of time [while they were recasting], Frank Morgan died, so he was replaced. Anyway, I found the original recording for his version of Colonel Buffalo Bill, and it's five channels of music, so it's mega stereo and it's amazing. It's not the most famous Irving Berlin song of all time, but the reason it's there [on the compilation] is it's so rare, and it sounds great."

"That track was pretty involved," Schwartz says. "That's an instance where we had a channel of Howard Keel, who is the main vocalist in the second half of the thing, and then we had a couple of channels of other actors, so we had separate pieces of all these different elements, and for each of those I went through and cleaned them up, meaning I took out any noises, optical clicks and pops, that sort of thing, as well as a light DeNOISE on each of the channels. Then there was the considerable job in editorial of putting that together and synching things back up so that Keenan Wynn came in where he is supposed to and so did Howard Keel."

At press time, Schwartz and Feltenstein had begun working on the next major release in the Rhino/Turner series, *The Lion's Roar*, a double-CD collection of excerpts from extraordinary MGM scores. "Would that we could do full, complete scores for more of these pic-

tures, the way we did for *Gone With the Wind* and *Casablanca*," Schwartz says. "There are beautiful scores by the likes of Miklos Rozsa and Bernard Herrmann that aren't from famous films like *Oz* or *Ben Hur*, but they are every bit as great. There have been so many of these projects where the historic importance of the film and of the score just loomed over us. Listening to and mastering these recordings is really such a privilege, and it's important to me to honor this music and have it appreciated." ■

—FROM PAGE 200. THE RED HOT CHILI PEPPERS a really long time. We recorded the tracks for *One Hot Minute* in '94, and Anthony didn't get around to singing on them until a year later, and that's really frustrating. When you see how good things can really be, and you realize you could have three albums out in that [six-year period] and be cranking, it's very frustrating. If we sucked and were playing bad music or we were just cranking it out because somebody gave us money to make an album, that would be a different story. But I think we're a

tion is a return to more straight-up funk.

On *Californication*, the band worked with engineer Jim Scott. "If you tried to do something too tricky or too fancy or too much of your own thing [as the engineer]," Scott says, "it probably was not going to go the distance. To get it so they liked it, everything had to be loud and clear and you had to be able to hear everything they played, because it's complicated. Flea plays very fast and very clear and has a great tone that he creates from his fingers on out, so it's important to hear every note." To complement that tone, Scott says the right equipment and location were necessary. They recorded in Ocean Way's Studio 2 on the vintage Neve board, and Scott used a Neumann U47 tube mic on Flea's bass amp. "It might have been a little bit of a strange choice, but it's an exciting microphone that has a lot of character, and once you get it really working, the tubes will become an exciting part of the sound and create that energy he does," Scott explains.

"My job was really easy," he continues. "John and Flea make the sound with their hands. They don't have to ad-



At *The Village* in studio A are (standing, L to R) Chad Smith, Anthony Kiedis, John Frusciante and Luis Matthews; seated at the Neve 8048 is Jim Scott.

great band, and I don't want to give up on it."

The music playing in the background is proof of how good the Chili Peppers can sound when they focus their energy. This particular incarnation is the same that made the hugely successful *Blood Sugar Sex Magik* album. Although *One Hot Minute* was also acclaimed, it was highly influenced by Navarro's more rock approach to music, whereas *Californica-*

just things delicately to get the sound. They play it and it sounds right, so once you get a meat-and-potato sound on those guys that's right, they adjust it. They just play the sound and we record it. There are only three guys playing music, and it makes a giant sound, so each guy is really filling up a lot of space. Just to get it the way they're used to hearing it when they come in for a playback was the challenge. They sit real close to each other when they're

hearing and recording, so they know what they're doing and what the other guy is doing musically."

Although this was Scott's first Chili Peppers project, he had worked with producer Rick Rubin on numerous other CDs, including Tom Petty's Grammy-winning *Wildflowers*. *Californication* was Rubin's third Chili Pepper production. "He's the fifth member of the band," Smith says of Rubin. "He's not a technical guy at all—he's not an engineer turned producer. He just knows what he likes. We'll have ten song ideas, and we'll play them for him at the point that we need an objective, unbiased opinion. Sometimes we butt heads, other times he'll say, 'I like that part, but that other part doesn't do anything for me.' Sometimes we don't have lyrics and he'll say, 'I like it, but I've got to hear it with the singing on it.' He's really good at melding our kind of unpolished musical sections into songs and helping us to get in and out of sections—out of verses into choruses. He might say, 'A stop there would be nice,' or, 'You don't need to do that fill, it's too much, save that for the end.' He's there to pare it down and trim the fat. We'll cut tracks and he might say, 'That's good, but that'll be for the live version.' If there's too much playing, too much soloing, or it's too busy or has too many fills, he's the voice of reason. Not that it shouldn't be exciting, but sometimes he feels it's getting in the way of the overall picture, which is the song. He's really good at that."

Scott says as Rubin's engineer, his first objective is to make him happy. "He and I have done enough records together that I know what he's going for," Scott says. "The records we've done are all loud and dry and clear. The drums are really loud, the vocals are really loud, and they're focused on the groove and the song."

"Loud and dry" is accomplished in part by not using any external ambience-creating devices. "I used tube compressors on the bass and solid-state compressors on the lead vocal and electric guitar, but it's all the stuff you've seen a million times—LA-2As, 1176s, tools that have been my main crutches over the years. There's no reverb, no echo, no delay, though," Scott says, "none of the kind of stuff that sets things further back from where they physically are in the room. The second part of that is to keep the microphones really close to the source you're trying to record. If I want the guitar to be really in my face, the microphones are as deep inside the speaker as I can get them—unreal-ly so.

If the guitar player put his ear inside the speaker cabinet, he wouldn't last too long. He's usually standing six feet away from his amp going, 'That sounds great—that's my sound.' But on a record, if you put the microphone six feet away from the guitar amplifier, it's going to sound like it's 20 feet away or 50 feet away. It's not going to have the kind of power or impact that he's used to feeling. He's used to feeling it move his body and his clothes and blow air at him, and you can't achieve that by putting the microphone in that spot. You have to get it closer and record that sound so it's right there."

Scott says his microphone choices are rather ordinary. "I'm a real simple man. The people I learned from made great rock 'n' roll records with the studio standard microphones. I hate to call them common or everyday, but I use Neumann and Sennheiser microphones—it's the same stuff that's available to everybody. I use the stuff that's in every studio in town. This probably sounds very boring because everybody who is reading this is going to go, 'That's what I do, too.' On the drums, I use Shure 57s on the snare drum, Neumann 47s on the kick drum and probably Sennheiser 421s on the toms. I put a

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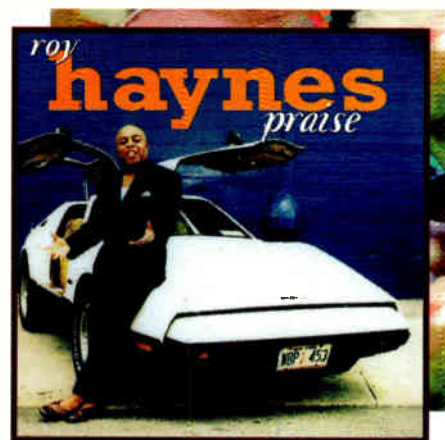
microphone on all the drums, though," he continues. "Some guys use maybe three or four microphones, which is sort of a Glyn Johns style, where you put two or three microphones on the whole drum set, and that's your sound. That's a classic sound, and it's a beautiful sound, but it's not necessarily an aggressive or tear-your-head-off sound."

The track "Porcelain" required slightly different treatment. "We had a second kit that was tuned differently," Scott explains. "There were different sized drums, and it had a different character. And Chad played it differently. It's not a song he could slug out. He played it with a much finer touch, and for that we created a softer sound by moving the mics a little bit farther away. It was a much smaller kit, therefore fewer mics, and just the sound he made is the sound we recorded. It really sounds simple, but if you don't do it right, then it's wrong!

"And then there's a certain amount of listening that goes into it," Scott says. "As the engineer, you have to go out and listen to what they're playing. If it doesn't sound good when he's playing it, it's not going to sound good when you're in there recording it. When the four Chili Pepper guys get together and play their music, they make the subtle adjustments. It really has very little to do with what microphone you put here or what EQ you put there. The best thing a recording engineer can do—especially at this level—is to not make any mistakes, not be part of the problem, and when everyone is getting nervous, not to be part of that." ■

—FROM PAGE 201, ROY HAYNES

Haynes' commanding talent and presence make perfect sense when one considers that he participated directly in some of the best of the latter half of 100 years of jazz. The man has, after all, backed Bud Powell, Miles Davis, Thelonious Monk, Eric Dolphy, Stan Getz and Gary Burton, and he did extensive work with Charlie Parker (1949-52), John Coltrane (as the regular substitute for Elvin Jones, 1961-65), Sarah Vaughan (1953-58) and Chick Corea. Guitarist Pat Metheny sums up Roy Haynes well in the liner notes to *Praise*, Haynes' most recent recording: "He has a depth and a listening sensitivity that allows him not only to play beautifully every time but to make the musicians the beneficiaries of his musical wisdom, always inspiring them to new heights. The many nights



I've played with Roy remain among the highlights of my life as a musician."

Praise was recorded in three days in May of 1998 at Brooklyn's Systems Two studios with Haynes producing; the engineer was New York jazz specialist A. T. Michael MacDonald. The swingin' date included sax stars Sanchez (tenor) and Kenny Garrett (alto and tenor), Roy's son Graham Haynes on flugelhorn and cornet, Haynes' longtime pianist David Kikoski, bassist Dwayne Burno and percussionist Daniel Moreno. If Haynes had had his own way, the record would've been cut during a live club date. "I'm not that comfortable in the studio," Haynes explains. "Headphones and isolation booths are not conducive to the feeling I'm after. I want eye contact; I give a lot of cues." However, the record company wanted a studio session, so to approximate the cherished live feeling, *Praise* was cut with almost no overdubs, and the only musician who worked in an isolation booth was bassist Burno.

MacDonald never even considered putting Haynes in a separate room. "Roy Haynes in a drum booth would've been a disaster; he would've blown out the room," he says. "All I did was place some gobos around him to keep the horns out of his mics, rather than try to keep him out of the other mics—the bleed of a great drummer like Roy Haynes is a part of the sound of a good jazz date."

Haynes was set up in a corner of Systems Two's 50x40-foot main room, which has a 26-foot ceiling. The rest of the musicians were close by in a semi-circle. "It's as close to a live date as we could get, very straight ahead," Haynes explains. A chief concern was getting Haynes' signature "snap, crackle and pop" drum sound right. "I like a bright sound; everything now is geared toward more of a funk drum sound," the drummer complains. But getting Haynes' drum sound right really isn't

much of a challenge according to engineer MacDonald: "He could make any drum set sound amazing because he has such a wide dynamic range, and is such an explosive, physical player." For the sessions, Haynes brought in his own his drum set, which his son Craig tuned in about 20 minutes.

Systems Two's big, high-ceilinged room was a significant factor in the recording of *Praise*. "The studio is a converted movie theater, and its got just the right mix of diffusion and absorption, unlike some of the big Manhattan rooms where the sound just dies," MacDonald says. "You can take off the headphones and hear everything in Systems Two. In fact when we cut Charlie Parker's "My Little Suede Shoes" [the original of which Haynes recorded with Bird nearly 50 years ago] as a duet with only Haynes and Kenny Garrett, we didn't use headphones, just the room's acoustics."

Haynes' drum set was miked primarily with overheads. "I always start with the overhead mics and then close-mic all the drums, but tuck the close mic sounds into the overhead mix," MacDonald says. "If you were to solo my kick or snare track they might sound unimpressive. But when you hear it all in concert with the overhead mics it suddenly makes sense." The overheads were Schoeps CMC 5s; the kick an EV RE20; snare was the standard SM57; high-hat an AKG 414; and the toms Neumann U87s.

MacDonald says he prefers to avoid using equalization. "I feel EQ creates as many problems as it solves. I prefer to adjust the frequency curves with different mics and their placement. When you add high-end EQ you get a slight delay from the capacitors storing energy. It's very subtle, but cumulative—when you EQ in tracking, mixing and mastering it builds up and you get a time smear. Plus with something as harmonically complex as a piano, you can easily destroy that delicate harmonic balance with the twist of a knob. When I use EQ it is only as a last resort, and usually it will be cuts rather than boosts." The only EQ used for the entire date was a little notching out of the drums. "You get a pile-up with multiple mics in the midrange, so I sucked out a couple of dBs at the 200 to 400Hz range," MacDonald explains.

Haynes bowed to MacDonald regarding the mic placement and choice. However, when it came to balance the drummer was more involved. "Roy wants things very aggressive," MacDonald says. "The drums are very forward,

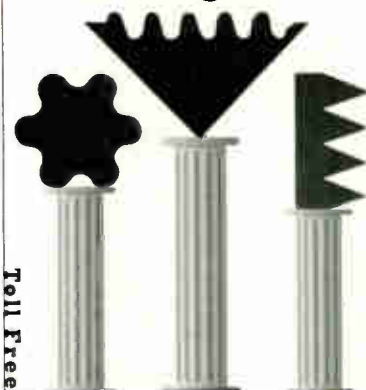
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and the cymbals are brought back down into the drums. Getting that balance right is more important than the mic choice. We could've put all SM57s on Roy's drums, and if we balanced it right it would've sounded amazing."

The rest of the players were tracked using mostly vintage mics. RCA 44s were used on Graham Haynes' flugelhorn and cornet because "they don't give you anything effective above 8 to 9 kHz," MacDonald says. "That is perfect for a flugelhorn or cornet, because I don't want to hear 15 kHz; it's just spit and noise. When we hear a horn live we're not 15 inches but 15 to 20 feet away, and that stuff gets lost. So the RCA 44s give you a natural presentation."

Saxmen Sanchez and Garrett used Neumann U47s. "They have the perfect coloration for saxophones," says MacDonald. "You simply put them in the right place and hope the player will reasonably stay in that sweet spot."

Systems Two's piano is a highly pedigreed concert grand, Steinway number 385, which was the house piano at Carnegie Hall for many years. However, in MacDonald's estimation some of the upper registers are a tad brittle. "The Sony 37s have kind of a chunky sound, and they smoothed out the brittle registers. For another piano I would've used different mics."

Praise, like most jazz dates these days, was cut on a tight schedule, which was just fine. "Two takes was the norm, with the maximum being three," MacDonald notes. "The caliber of the musicianship was so high that we didn't need more takes. I think that was also part of Roy's approach as producer: He didn't want people to think too much or go through take after take." The last track, Haynes' drum solo "Shades of Senegal," was cut in one pass. "Roy kept saying that he was thinking about a drum solo piece, but that he wasn't sure exactly what he would do. But he did it once and that was it, and it was absolutely brilliant. I have to think that the old master knew what he had in mind all along," says MacDonald admiringly.

The *Praise* sessions were tracked to a Mitsubishi X-800 32-track digital because it "was in the room and plugged in and it sounded great." The console was an Otari Concept 1 analog automated board that MacDonald says was "transparent with a lot of punch." The analog-to-digital converter was a Prism AD 124. The recording was mixed in two days to a Sony PCM-9000 magneto-optical drive at Systems Two and mastered using Sonic Solutions at MacDon-

ald's AlgoRhythms mastering room in Manhattan. Monitors for tracking and mixing were Genelec 1031As. MacDonald used no compression and one reverb unit "very slightly on everything, an old Klark Teknik DN780, an '80s-era machine that people love so much you never see them on the used market."

Praise was a dream job for MacDonald: "I've worked with a lot of famous jazz musicians," he says, "but I can't recall working with anyone with so much life, energy and animation, yet so much focus. I think everyone on the date was inspired to play a little bit better than they normally might. Meanwhile the whole thing was on Roy's shoulders, and he's just going along telling jokes and goofing around. That is until they sat down to play—then it was all business. I told Roy I felt privileged to be a part of this record; I would've done it for nothing." ■

—FROM PAGE 204, COOL SPINS

Mistikal, Big Pun and even R&B singers Next. The highlight of the album is "Work." With its '70s feel, funky hook, classic strings, and sing-along chorus, it's sure to be a song we're going to hear everywhere this summer. Also worth mentioning is the catchy party song, "We Can Do It," featuring Big Pun.

Producers: Naughty By Nature, Donald Robinson, Falonte Moore, Kaygee and Platune Sounds. Engineers: Darren Lighty, Kaygee. Studio: Mill Studios, (NJ). Mastering: Chris Gehringer/The Hit Factory. —Mark Hopkins

Javon Jackson: *Pleasant Valley* (Blue Note)

On his fifth Blue Note release, the gifted tenor saxman Jackson fronts a slightly unusual lineup of electric guitar (Dave Stryker), organ (Larry Goldings) and drums (Billy Drummond); there's no bassist. The group tackles quite a



range of tunes, from Duke Ellington's obscure "Sunswept Sunday" and Joe Zawinul's "Hip-podelphia" (from JZ's Cannonball Adderly

days) to Stevie Wonder's "Don't You Worry 'Bout a Thing" and Al Green's "Love and Happiness." But Jackson's originals, like the funky "In the Pocket" and the bopping "For One Who Knows," show his own songwriting chops, as well. Whether blowing sweetly and lyrically or hard and fast, Jackson communicates much emotion with his playing. And Stryker and Goldings show they are up to the challenge of providing different voicings for the many styles Jackson explores on this effervescent outing.

Producer: Craig Street. Engineer: Danny Koppelson. Studio: Sear Sound (NYC). Mastering: Greg Calbi/Sterling Sound (NYC).

—Blair Jackson

Bill Kirchen: *Raise a Ruckus* (Hightone)

This album is pure pleasure. Bill Kirchen's been at it a long time, writing songs, making records and playing out in probably dozens of configu-



rations since his days with Commander Cody, but he seems to have lost absolutely none of the joy of it. He sounds especially gleeful playing and singing the title track, and the wonderful "Little Bitty Record," a tribute to vinyl singles ("still makes me feel like the first time I felt/A little bitty record with a great big hole...") sounds more than a little like older stuff by Kirchen's friend Nick Lowe. This is a parade of great American roots sounds—Cajun, Texas swing, country, blues and plenty of rock 'n' roll—in which Kirchen's sweet singing, and guitar and trombone (!) playing are supported by a superb group of musicians, including the album's producer, Austin de Lone, and accordion great Flaco Jimenez.

Producer: Austin de Lone. Engineers: Tommy Detamore, Peter Fox, Mike Harvey. Recording Studios: Tommy Detamore's Cherry Ridge Studio (Floresville, Texas), Groovetown USA (Washington, D.C.), Actiondale Studio (Annandale, Va.). Mastering: Dave Glasser/Airshow (Boulder, Colo.).

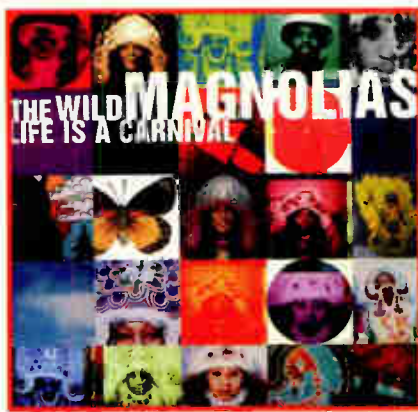
—Barbara Schultz

Various: *Return of the Grievous Angel: A Tribute to Gram Parsons* (Almo)

I've grown leery of tribute albums, but this has an excellent pedigree: It was co-executive pro-

duced by Parsons' one-time singing partner, Emmylou Harris, who has done so much to keep his spirit and his songs alive in the 25 years since his death. The 13-track CD draws songs from Parsons' days with The Byrds, the Flying Burrito Brothers and from his two excellent, still underrated, solo albums, *GP* and *Grievous Angel*. Emmylou and Almo's Paul Kremen have assembled a stellar cast of great singers to tackle Parsons' songs: My favorites are Beck and Emmylou's dreamy take on the Burritos' "Sin City," The Mavericks' version of "Hot Burrito #1," Elvis Costello's passionate reading of "Sleepless Nights" (one of the few tunes on here not written by Parsons); Gillian Welch's and David Rawlings' faithful "Hickory Wind;" Evan Dando and Julianna Hatfield's nicely nuanced "\$1,000 Wedding" and the Rolling Creekdippers' "In My Hour of Darkness." The Cowboy Junkies' lethargic "Ooh Las Vegas" is the only obvious misstep on an album that does show the breadth and depth of Parsons' songwriting genius. Still, I'd much rather listen to the excellent Burritos anthology, *Farther Along*, and the two-fer CD of *GP* and *Grievous Angel*—discs that belong in any serious collection.

Executive Producers: Paul Kremen, Emmylou Harris. **Producers:** Stephen Street, Michael Timmins, Allen Sides, Glyn Johns, Don Cook & Raul Malo, Herb Pedersen, Sheryl Crow & Emmylou Harris, Wilco, Ethan Johns, Buddy & Julie Miller. **Engineers:** Glyn Johns, Darryl Smith, Chris Lord-Alge (mix), Allen Sides, Mike Bradley, Bernard Matthews, Trina Shoemaker, Dave Trumfio & Mike Hagler, Jonathan Pines & Jay Bennett (mix), David Rawlings, Ethan Johns (mix), Buddy Miller & Meghan Ahern. **Studios:** Chemical Sounds (Toronto, Ont.), Oceanway (L.A. and Nashville), Image (L.A.), Fort Apache (Boston), The Soundshop (Nashville), Sunset Sound (L.A.), Globe (N.Y.C.), Kingsway (New Orleans), King Size Sound Laboratories (Chicago), Dogtown Studio (Nashville), Dreamland Studios (NY).
—Blair Jackson



Tough"; both were produced by the great New Orleans arranger Wardell Quezzerque.

Dollis' sandpaper vocals are sometimes grating, but the sure funk and second-line rhythms and the outstanding instrumental support of Dr. John (piano), June Yamagishi (guitar) and others always keeps the session lively. File next to your Wild Tchoupitoulas and Professor Longhair discs.

Producers: Glenn A. Gaines, June Yamagishi (one song), Cyril Neville (two songs), Wardell Quezzerque (three songs). **Engineers:** Marc Hewitt (tracking and mixing), June Yamagishi (mixing). **Studio:** Sound Services (New Orleans); additional studios: The Boiler Room, Magazine Sound, Side One, American Sector (all in New Orleans), Clinton (NYC). **Mastering:** Kurt Lundvall.
—Blair Jackson

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The Wild Magnolias: *Life Is a Carnival* (Metro Blue)

One of New Orleans' venerable Mardi Gras "Indian" tribes (actually African-American), the Wild Magnolias perform and record only sporadically, but when they do it's always a funky party, and this disc is no exception. The date is dominated by the gravely, rough-hewn vocals of Big Chief Bo Dollis, who stomps his way across a variety of new and old N'awlins party tunes by the Magnolias and Crescent City stalwarts such as Dr. John (four fine new tunes, plus "All on a Mardi Gras Day" and "Pock-A-Nae"), Cyril Neville and Allen Toussaint. A version of The Band's "Life Is a Carnival," (originally produced by Toussaint), features Robbie Robertson and Bruce Hornsby. Dollis duets powerfully with Dr. John "Black Hawk" and with Marva Wright on Toussaint's "Hang

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COAST TO

Jim Scott in Cello Studio 2



PHOTO: MAUREEN DRONEY

L.A. GRAPEVINE

by Maureen Droney

Paid my first visit to Cello Studios, where busy producer/engineer Jim Scott was tracking with Matthew Sweet in Studio 2. The studio occupies what was formerly Ocean Way's 6000 building, and Scott, a Best Engineered Album Grammy nominee (for Sting's *Dream of the Blue Turtles*) and winner (for Tom Petty's *Wildflowers*), is a master of live recording. His long list of credits also includes Red Hot Chili Peppers, Counting Crows, Robbie Robertson, Wilco, Lucinda Williams and the Rolling Stones.

This is his first album with singer/songwriter/multi-instrumentalist Sweet. "A few months ago we did four songs together," Scott says. "We had fun, and it came out great, so we

moved to the next level of doing the whole record. I'm a co-co-producer on this one, with Greg Liesz, the best guitar player in the world, and with Fred Maher, who produced Matthew's hit album *Girlfriend*."

The recordings have been proceeding in a bit of an unusual way; half of them were cut two-piece with Sweet on guitar and Rick Mink on drums; other tracks were cut four-piece with the addition of bass and keyboards; and five or so pieces were cut with a 15-piece rock band. Instrumentation for the large band included two bass players, five guitarists, two drummers, two percussionists, three keyboardists and a Theramin player. And yes, they fit the party all on one 24-track analog machine, Scott's format of choice.

"We used lots of

reverb," Scott comments, "and it really sounded quite amazing. The best thing was the response of the musicians in the room—they were thrilled with the lack of nit-picking. You know how it is—when you go

to cut a track everybody focuses on the loudest thing, usually the poor drummer, and there's lots of 'Is that a good snare sound? Are the bass and drums good?' But with this size band you couldn't really say that kind of thing. It was such a big sound, all you could go by was, did it feel good?"

With all those players one would expect a headphone train wreck. "Well," laughs Scott, "if we'd had a private cue for every-one it could have been

—CONTINUED ON PAGE 217

NY METRO REPORT

by Gary Eskow

Producer/artist Mike Thorne lives most of the year in Greenwich Village, but he retains a home in his native England, and both his manner of speaking and his no-nonsense approach to the music business reflect his distinctly British sensibility. I spent an hour or so visiting with Thorne at his downtown recording facility and production hub, The Stereo Society (the name he also gave to his Internet-based record label). He's 50, looks 40, and he has the passion of a teen when discussing ideas that interest him.

Plucked from the countryside by Oxford University scouts searching for bright kids living outside the normal academic centers, Thorne took a degree in physics there before

moving on to London, where he worked as a music journalist before finding his way into the recording industry as a tape operator on Deep Purple sessions. Eventually he would work as an A&R man (he brought the Sex Pistols into EMI) and move into production. Thorne produced Soft Cell, Wire, Bronski Beat and other bands in the punk decade. Tired of watching the creative edges being worn off acts by record executives searching for a marketing handle, Thorne retired from the business in 1994 and began exploring new media.

"I have no goals for The Stereo Society," Thorne says, "save that it can publish music that is different—makes people laugh and/or cry—and is self-supporting. The new technologies promise to make this feasible with sales a fraction of those of the old-style record busi-

—CONTINUED ON PAGE 220

Ozzy Osbourne stopped in at L.A.'s Westlake Audio to contribute vocals to the new release from Roadrunner Records Recording artists Coal Chamber. In Studio C (L to R) were engineer Brian Virtue, guitarist Meegs, producer Josh Abraham, the Oz and vocalist Dez.



COAST

NASHVILLE SKYLINE

by Dan Daley

The Nashville studio community will have a new neighbor in September when the School of Audio Engineering (SAE) is expected to open its 14,000-square-foot facility in the former Arista Records building on Music Circle. A little background: SAE is the world's largest media school; it operates 27 schools in 15 countries, including the SAE opened in New York in April, for a total of more than 1.25 million square feet of educational and studio space on three continents.

I took a walk through the 11,000-square-foot New York facility a couple of weeks after it opened and got a preview of what Nashville can expect. Like the facilities in London and Paris that I had seen last year, it is simple, Spartan and to the point. SAE does not dote on glitz or bells and whistles. There are small LEDE-type control rooms featuring SSL and Neve consoles surrounded by workstation suites (with systems such as Pro Tools) and by lecture rooms. At the time of my visit, New York had 60 students, and

14 had signed up for the Nashville location, all of whom will pay a total of \$13,500 for a full degree course in either audio recording, technology or multimedia.

The U.S. already has some 600-plus audio related educational programs, and the Nashville area is home to two of the finest—four-year programs at Belmont University and MTSU. And those programs are already deeply intertwined with Nashville's cozy music industry. But for SAE it's not a question of why they would choose to enter the U.S. market (the school has already announced it plans to find another dozen sites here in the next few years) or a question of why New York and Nashville (they are two of the three biggest recording locations in the country; Los Angeles, the third center, is subject to California's highly stringent board codes, which make opening there a tricky business). Rather, the issue is, how do you adapt the multinational culture the school has developed to the U.S.?

Marcel Gisel is SAE's point man in the States. He opened the schools in Austria, Switzerland and elsewhere in Europe. He's already a veteran of

—CONTINUED ON PAGE 232

SESSIONS & STUDIO NEWS

SOUTHEAST

Sherrie Austin worked on her sophomore release for Arista Records on the Neve 8078 in Studio A at Oceanway Nashville, with producers Ed Seay and Will Rambeaux and assistant Eric Hellerman. The recording marked the 500th session in Studio A since the facility opened... The Sumner County Youth Orchestra recorded their second CD at Nashville's Javelina Studios with engineer Steve Crowder and second David Langemann. The sessions were edited and mastered at Jam-Sync (Nashville) by K.K. Proffitt, assisted by Joel Silverman... Producer/engineer Bruce Swedien mixed for new artist Jaime on the SSL 9000 J in Studio A at House of Blues Studios (Memphis, TN). Kevin Page and Kyle Johnson assisted... As part of a recent spate of activity, Mobile Audio Recording Services of Musele Shoals, AL, traveled to Colorado Springs, CO, to record the Colorado Mass Choir. The project was produced by Paul Wright... Swaybar recorded new material at The Zone (Norcross, GA) with producer/engineer Billy Hume...

SOUTHERN CALIFORNIA

Atlantic artist Nappy Roots mixed an upcoming release at Skip Saylor Recording (L.A.) with producer Mike Caren, engineer Chris

Jenny Knotts. The studio is installing a vintage Neve 8078, adding eight channels of 1073 modules and API pre's and EQs, plus an additional C bus... Engineer Rob



Students at The Conservatory of Recording Arts & Sciences in Tempe, Ariz., work in the school's main studio on the recently installed SSL 4056 G Plus console. The new board is part of an ongoing capital improvement package that the school is presently implementing.

Puram and assistant Rollin Moone... Irish combo Junkster tracked at One on One South (L.A.) with producer Greg Wells and engineer Brian Scheuble on the studio's Neve 8078. The board was recently expanded to 80 full-channel inputs, all with Neve 31105 4-band EQ... At Sony Music Studios (Santa Monica), Tracy Ullman recorded music for *Tracy Takes On* with producer Randy Kerber, engineer Ray Pyle and assistant

Chiarelli mixed a track for Red Ant Entertainment artists Naked at Pacifique Studios (North Hollywood). Stephen Stewart Short produced...

NORTHEAST

At Electric Lady Studios (NYC), David Sanborn mixed for his new Elektra release on the recently installed SSL 9000 J console in Studio B, Electric Lady's second 9000 J. The studio also added a Sabine Power-Q ADF-

—CONTINUED ON PAGE 222

NASHVILLE'S WOODLAND STUDIOS

SURVIVING THE STORM

by Rick Clark

April 16, 1998, is a day etched into the memories of everyone in Nashville. It was the day that a mile-wide tornado roared over downtown and over the new football stadium, finally touching down in the heart of Nashville's funky, evolving bohemia, East Nashville. With hundreds of home and commercial studio facilities in the metro area, the odds of a tornado hitting one are awfully high. But the one studio that the storm really hit hard was the legendary Woodland Studios, which has attracted an enviable client list including Willie Nelson, Bob Seger, Neal Diamond, Emmylou Harris, John Mellencamp, Johnny Cash, Steve Earle, Elton John, Lynyrd Skynyrd, Dusty Springfield, Alabama, Shania Twain and many, many others.

At the time of the storm, Brian Tankersley (whose credits include Shania Twain, Wynonna and Billy Dean) was at Woodland mixing tracks for Arista artist Shannon Brown. The day had been rife with tornado warnings, but when Tankersley took a break to check out the weather, he didn't expect that he'd be looking right into one bearing down on the studio. "I stepped outside and looked up into the yawning chasm of the tornado's mouth and yelled, 'Run like hell!' to everybody," Tankersley recalls. "We were running for our lives to the storm shelter, and roofs were blowing off and power transformers were exploding around us. A telephone pole snapped off less than 20 feet from the door, less than ten seconds after we dove inside."

When everyone got out of the storm



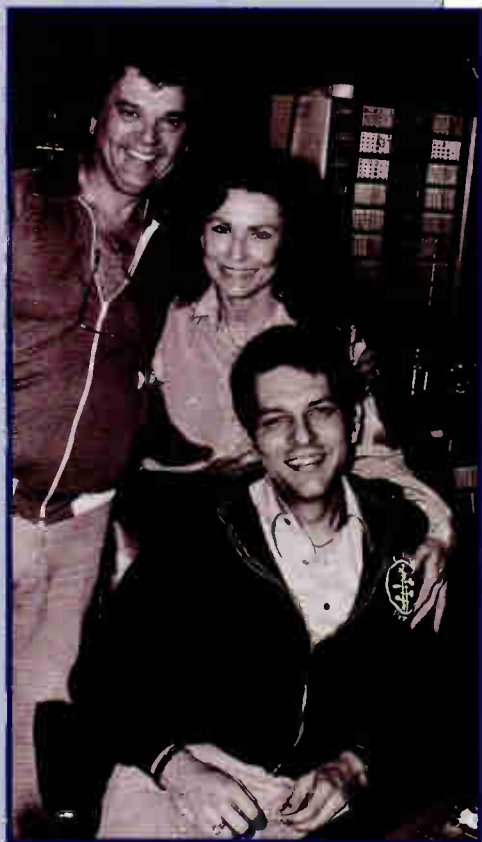
The studio in the aftermath of the tornado

shelter, the studio was still standing, but not without some serious damage. Evidently, two funnel clouds had crossed at the building, slightly twisting the entire structure and ripping off big chunks of the roof. "When we came back into the control room where we were mixing, the huge cinder block outside wall had split and shifted about an inch over. You could see daylight through it," Tankersley says.

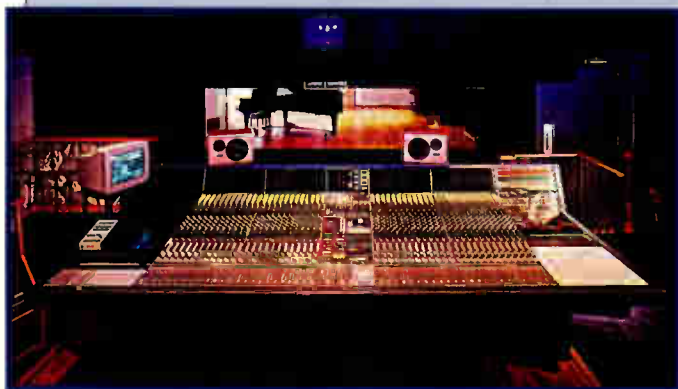
The studio, as well as the entire neighborhood, was out of power for two weeks, but that didn't keep everyone who had been working there around that time from coming back. "We had several projects that were in the works at the time the tornado hit," says Bob Solomon, owner of Woodland, "like Radney Foster, which is coming out now on Arista. Just after we got our power back on, they all came back and finished their projects. We didn't have any air conditioning or heat, and we had a big rubber-like sheet that covered the part of the roof the tornado took. Luckily, it was early enough in the spring that it wasn't that hot yet."

In spite of everything, Woodland has been putting it all back together and is now enjoying brisk activity, thanks to the studio's many fans. Since the storm, Robert Cray projects at Woodland and will be working on John Haitt's next album there. "This is like the only place I go to in Nashville, and I started coming here almost 15 years ago. I've brought projects from New York here, just because of this studio. I love it." ■

ing at Woodland," says Niko Bolas (Neil Young), who engineered and mixed the Radney Foster and Robert



A classic session (L to R): Conway Twitty, Loretta Lynn, David Barnes



—FROM PAGE 214, L.A. GRAPEVINE

a nightmare. But we didn't, and [assistant engineer] Mike Scotella is the best with headphones. The desk has a separate cue section that allows for two stereo or four mono or anywhere in between; it's ancient, but it works just fine, and in this case the limitations made it better. We had four mono headphone mixes: one for the drummers, one for everybody else who was on the floor near the drummers, one for the back iso booth and one for the front iso booth."

Three drum kits were set up for the project, dubbed the "the good kit," "the bad kit" and "the shit kit." "It's much easier that way to say, 'Let's try a completely different drum sound,'" Scott says. "You don't end up modifying a sound that might be good for something else in a couple of days.

"This is such a flexible room," he continues, "it's sort of the engineer's friend. I did the Chili Peppers in here just before this; Matthew's sound is kind of lush in comparison, and they both worked. Over the years, I've done Danzig, Slayer, Tom Petty's records here. I find in this room it's really simple to make bands sound like what they actually sound like—the room doesn't have a sound that gets in the way. That's really valuable because most people, ultimately, know what they sound like, and that's what they want. A little bit better than that would be nice, but basically they know what they want to hear. This room is great for that, as is Sound City, which is also one of my favorite places."

A fan of old Neve consoles for both recording and mixing, Scott is the owner of two BCM10s and he enjoys working on Studio 2's 40-in 8038. About Cello's love-'em-or-hate-'em ATR12 he says, "I don't really care. I like a Studer because they punch great, and it's what I'm used to. These sound amazing but don't punch as well, so I let the guys that work here do the punches; they're so talented I don't have to worry about it."

Equipment Scott tends to bring to sessions includes a rack of favorite compressors, including UREI LA-175s (the tube version of the 1176) Altec mono tube amps and a Gates Sta-Level mono tube amp. "It's a bit like a Fairchild," he offers about the Gates. "It has six of the same kind of tubes a Fairchild has 12 of, so it has a similar sound and is about a tenth of the price. I use them like reverbs—I don't ever put them on just one thing. Instead, I plug the return of the compressor into a console and feed it with a send. I usually use three com-

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processors, like a left/center/right. I use them to add body so it's more like color and thickness than like actual level compression."

Scott has made somewhat of a specialty of live band recording; not surprising since he got his start at Record Plant, where as well as doing studio work he spent over two years working on Record Plant remote trucks. "It was the best thing that ever happened to me," he recalls. "With remotes, everything has to be ready at once—all the inputs, all the sounds, the mix. It was really the best training, and it made working in the studio seem almost boring. I never had any luck with synthesizer/drum machine records. I didn't think they sounded good, and they just didn't push that button in me. I was never interested in pushing up ten channels of DI from a drum machine to get something going. I'd rather stick a drummer with a great groove out there. It's fun to watch, and it's fun to listen to."

Cello studio manager Candace Stewart and director of studio operations Steve Holroyd gave me a walk-through of the five-room facility along with a rundown on the renovation plans. Major design and refurbishing work,

headed up by studio bau:ton, is scheduled for the 12,000-square-foot space, with lightening and brightening a top priority. Already, a reception area has been added to the front of the large complex, and a new, incredibly well-stocked mic locker (an M49 previously owned by John Lennon, Coles from the BBC, etc.) has been built. Lots of major and minor improvements are under way, including a completely new entryway, new lounges, the opening up of previously unused loading doors that lead directly into the studios, wiring of the whole building for computer access (all rooms are already fitted with IMACs), a roof garden and extensive secured parking.

Keeping the loyal Ocean Way client base shouldn't be difficult; there will be little change to the tried-and-true control rooms and studios themselves. According to Stewart, the only improvements planned for those areas are new carpeting and the addition of ambient lighting.

Projects in since the changeover to Cello include a big band tribute to Duke Ellington with George Duke producing, Latin superstar Luis Miguel self-producing with Rafa Sardinas and John Sorensen engineering, Don Was pro-

ducing for Ziggy Marley with Rik Pekkonen engineering, Rick Rubin and Sheryl Crow working on a cover of Guns N'Roses' "Sweet Child of Mine" for a film soundtrack, Brian Wilson collaborating on a track with Brian Setzer, and B.B. King with Stewart Levine producing and Rik Pekkonen engineering.

Over in Tarzana at CanAm's Studio A, producer/engineer Neal Avron was finishing up mixes on four songs for new MCA artists Skycycle. Avron (Everclear, Wallflowers, My Friend Steve, Shawn Mullins), I found out, is originally from Florida and has a background that's an unusual combination of musical and technical. After starting out as a trumpet player, he went on to get a degree that combined a major in music with a minor in electrical engineering at the University of Miami.

"After school I got a job at Criteria as a tech for a year," Avron says. "Then I heard they were looking for a tech at Sunset Sound in L.A. I applied, and a week later they called me and said, 'When can you be out here?' I stayed a tech for about a year. It was never what I really wanted to do, and these days I prefer not to worry about that kind of stuff any more—I like to let other peo-

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ple handle it. But starting out as a tech was my way of getting into a top-notch studio. I figured once people knew who I was they'd be comfortable putting me in the studio as an assistant—which was what happened. After a year as a tech at Sunset Sound I took a pay cut to go in as an assistant. I did that for three-and-a-half years. Then I went independent; I worked with producers like Rick Neigher and T-Bone Burnett who I'd met at Sunset Sound and who then recommended me to others. I started engineering a lot and slowly worked my way up."

Avron was first drafted just to mix the Skycycle record. When, toward the end of mixing, the four-piece band decided to record four more songs, they asked him to produce. "We hit it off," Avron says, "and had a good working relationship. They trusted what I did, and at the same time knew I was open to hearing their suggestions. It's never a 'my way or the highway' kind of thing with me. The band had a lot of visions for what they wanted, and a lot of good ideas. They wanted me to go for it, but they definitely knew whether they liked a sound or not. They have good instincts, and they're really creative."

It's not surprising that Avron, with his Sunset Sound background, prefers API consoles for tracking and overdubbing (the tracks he produced for Skycycle were recorded at Sunset Sound's Studio 2). "I tend to be one of those people who will, to a degree, make do with what they have," he comments, "but like many people, I like to record on boards that have less buttons and knobs. I like dedicated knobs so that if I want to add high end to something I just have to grab the proper knob on that channel instead of thumbing through a menu; I don't like thumbing through menus when I'm in the middle of a tracking date."

CanAm's Studio A worked well for the mixes. "I do like to mix on SSLs," Avron says. "It's something I've been doing since the Everclear record, and I don't know if I'm going back. I've started getting really used to them, and of course the record companies expect to be able to recall mixes, which is a lot easier to do with SSL. I also tend to like smaller control rooms, just because I feel the sound sometimes can get lost in huge ones, especially when you work a lot on little NS10s." ■

Got L.A. news? Fax Los Angeles editor Maureen Doney at 818/346-3062 or e-mail msmdk@aol.com.



Producer/engineer Neal Avron (center, in gray) with Skycycle in Studio A at CamAm

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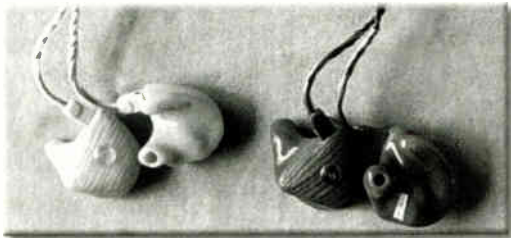
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—FROM PAGE 214, NY METRO REPORT
ness. Whether they help achieve escape velocity or not is the big question. How you achieve the goal of artistic self-sufficiency is the biggest question—how to deliver real music that is not dependent on patronage.”

Thorne moves from producer to artist with his own techno-driven, multi-layered vocal production CD SPRAWL. He says he sees the Web as a “club without velvet ropes.” Open to all kinds of artists and visitors, his site (www.stereosociety.com), is dappled with links that offer detailed bios, related articles, and, of course, the ability to sample all label tracks and purchase material as stereo files or CDs. Although sales are important, using the Internet rather than traditional distribution tools means that a recording can be a success even if only a modest number of units are moved.

“Money gives you freedom to chart your own course,” Thorne says. “If we sell lots of units it means, one, that we can continue delivering music that we like without external dependence, and, two, that people get the musical message, that we have done our job well. The applause that is implied in having a hit record is at least as satisfying as the cash.

“In the '80s and '70s, the producer's job was to organize the madness,” he continues, “to help pull ideas together. But by the time I'd quit commercial production in 1994, producers were more expected to deliver to a marketing specification, and I wasn't happy to be reduced to a sociable knob-twiddler. When I started to think about pure music again in 1997, it was clear that I had to lead the way somewhere. One conclusion led to another. I evolved my group, a repertory company of edgy people who are all artists in their own right. The crew will be the same on my next record.” Thorne's “crew” includes vocalists Lene Lovich, Betty, Kit Hain, and Sarah Jane Morris, legendary N.Y. session drummer Allan Schwartzberg, and the Uptown Horns.

Thorne purchased an NED Synclavier system in the 1980s and it still functions as his main sampler, although he now uses Emagic Logic instead of the NED sequencer. Logic itself works as a front end to Thorne's Pro Tools system. He likes to tweak tracks through the mixing process, so lots of synth and drum machine parts are left as MIDI performances. “The Amek Einstein console has really glued everything together,” Thorne says. “It's

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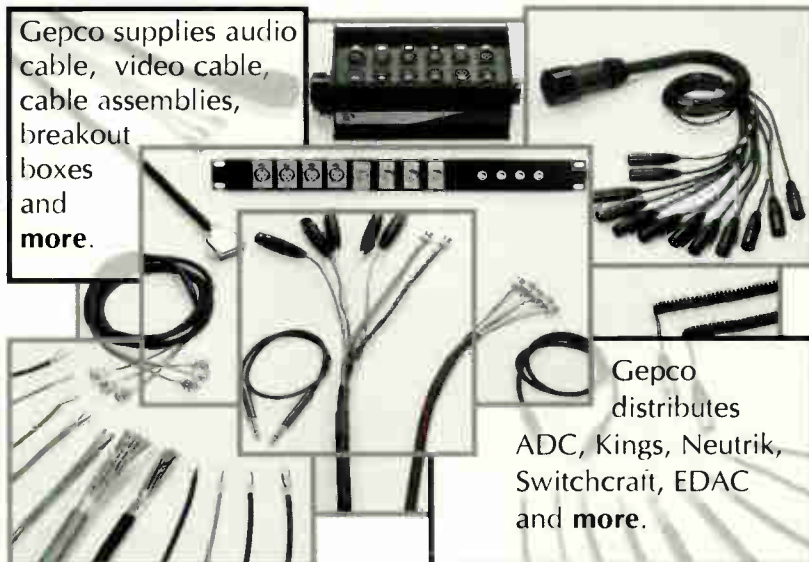
a simple but very clean board. I never wanted to own or drive a studio, but, starting in the '70s, I would always buy bits of equipment that provided more interesting sounds or possibilities, from a Flanger all the way up to the big Synclavier. I found myself with a workspace that included all of this gear." Thorne relies heavily on Neumann U89s and Drawmers from the 1960s. "For me, the clear U89 sound lends itself to more flexible treatment than, say, the more colored sound of the U87 or the AKG 414," he comments. "A clean mic sound permits extreme EQ, even on voice. I like having that option. I also like hearing that acoustic purity.

"I have never engineered a session for another producer," Thorne adds, "so my technique is oriented purely toward the music I make. If the engineering is minimal and doesn't demand mental energy that should be dedicated to the music, I do it myself. If there are heavy music and arrangement demands, or if it involves thinking on the feet as with recording a group rhythm section, or if I need extra perception for a mix, I would call [engineers] Carl Beatty, Harvey Goldberg or Dominick Maita."

Clearly jazzed by the possibilities of the Internet, Thorne also knows that it's too early in the game to figure out just how powerful a sales vehicle it will be for original music composed and produced by artists unwilling to bend in response to market studies. "I would love to know where we are in the Internet's evolution as a sales vehicle," Thorne remarks. "My future depends on it. I hope to be self-sufficient by this time next year, but this is possible only if the use of the Web broadens further within the general population. The statistical projections by the professional pundits are dubious at best and belong more in a boosterish plan for raising financial backing than in my real street world. Selling one CD on Monday, two on Tuesday and four on Wednesday does not mean that [we can] expect five kerzillion sales this time next year. Whether it works or not, the Internet is the only sales solution for new and niche acts, those with expected sales of below 100,000 units." Current Stereo Society artists include Thorne, CBGB owner Hilly Kristal, bassoonist Johnny Reinhard and The Reds. ■

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—FROM PAGE 215. NASHVILLE SKYLINE

dealing with bureaucracies, including SAE's own, and he's the first to acknowledge that the U.S.—and Nashville in particular—represents a challenge. "It's going to be interesting," he says. "I know that the U.S. has a different culture from Europe, and that Nashville has a different culture from New York. We'll be learning as we go along."

But SAE says it is not going to change its approach significantly for the U.S. It will use its European executives to launch here, in New York and elsewhere, drawing from local talent pools for teaching posts but keeping management firmly in the hands of European-based executives. Culture aside, SAE will also have to compete with Belmont and MTSU, which Gisel says SAE is addressing by having what he maintains is the most ambitious placement program of any school. New York State requires guaranteed placement of 75% of graduates in paying positions; Tennessee has no such regulation, but Gisel says SAE will use the N.Y. guidelines in Nashville, as well. That will be helped considerably by SAE's announced relationship with Disney in Orlando; from that base, the media giant's operations worldwide will draw on SAE's global graduate pool. Nashville has no shortage of studios that can take interns, but paid positions might be in shorter supply, as they are in the rest of the consolidating music business in Nashville. Gisel is undeterred. "Success for a school is based on getting its students into the industry, and that's something we think about in every case before any school opens its doors," he says.

The Nashville SAE will be run by Martin Berneburg, a European management exec formerly with Digidesign but based in the U.S. for much of his career. Gisel expects to be commuting from his new home in Ridgewood, N.J., until Nashville's SAE opens, partly to keep tabs on both operations and partly, he says with a laugh, to maintain a link to New York's culinary base. If Nashville benefits at all from this influx of European talent, this writer hopes it also manifests itself in the food.

In other news, Paul Scholten bought out partner Scott Merry at County Q in an amicable parting of the ways. It leaves what has been Nashville's powerhouse demo facility—one that has made demos a basis of its revenue stream during a period when many studios lost that niche to home recording—in a single owner's hands.

County Q's third room, which houses Cave Productions, a business owned by Tom Endres, has been as busy doing beta testing for Otari. Endres has also been working a lot on tweaking projects using his RADAR II and Pro Tools setup and has developed a growing sideline in recovering lost audio data, something the widening pool of RADAR and other hard disk-based systems users are calling for. Endres is a fan of hard disk recording but observes, "When hard disk recording works, it's amazing; but when it doesn't, it can be a nightmare." ■

Send Nashville news to Dan Daley at danwriter@aol.com or fax 615/646-0102.

—FROM PAGE 215. SESSIONS & STUDIO NEWS

4000...Phoebe Snow tracked vocals for a Special Olympics promotional track at Tapeworks Studio (Hartford, CT) with producer/studio owner Doug Kupper and chief engineer Bill Ahearn...Reprise artists Darlahood recorded for their new one with producer/engineers Paul Kolderie and Sean Slade in Studio A at Bearsville Studios (Bearsville, NY). Also in A were Virgin artists New Rising Sons with producer/bassist Ted Nicely and engineer Carl Glanville...

NORTHWEST

The Junc Rushing Band were in at Crow Recording (Seattle) with producer Chris Chappel and engineer John Nelson...Swing music at Bay Records Recording (Berkeley, CA): Lavay Smith and Her Red Hot Skillet Lickers are working on their next release at the studio, as are newcomers the Swing Session...At Hanzsek Audio (Seattle) producer/engineer Jack Endino recorded Nebula for their upcoming CD...Caustic Resin recorded new material with engineer Phil Ek at Avast Studios in Seattle...In Studio A at San Francisco facility Toast, No Doubt remixed a new single with producer Philip Steir and engineer Jaquire King. Also in A was Sheryl Crow, tracking a song for the *Big Daddy* soundtrack with producer Rick Rubin, assisted by Alex Osborne...Ryan Hadlock produced a compilation cut for MXPX at Seattle's Bear Creek Studios...Sire/Hybrid artists Guster recorded for their upcoming release with producer Steve Lillywhite at The Plant (Sausalito, CA)...Bellevue, WA-based Xtreme Studios Mobile traveled to the Fillmore Auditorium in San Francisco to

track Rusted Root for a live CD slated for release on Mercury. Susan Rogers engineered and produced, assisted by Xtreme's Steve Smith...

NORTH CENTRAL

At Chicago's Colossal Mastering, engineer Dan Stout mastered Enuff Z'Nuff's new album, *Paraphernalia*, on Spitfire Records, as well as a new EP for Spirit Engine, which was tracked and mixed by Steve Albini at Electrical Audio in Chicago...

SOUTHWEST

Christian Dozzler and his band the Blues Wave recorded at SugarHill Studios in Houston, TX, with guest artists Katie Webster and Ashton Savoy...Quest recording artist Sy Smith recorded vocals and worked on a surround mix of her new release at Video Post & Transfer (Dallas, TX) with producer Madukwu Chinwah and engineer Joe Macre...Remember August tracked for their 6X6 Records debut at AKS Recording in Oklahoma City, OK, with producer Geoff Riley and co-producer/engineer Wes Sharon...

STUDIO NEWS

Nashville-based designers Steven Durr & Associates were recently commissioned to upgrade media rooms for the local operations of ASCAP, Warner Bros. and NARAS...Ex'pression Center for New Media (Emeryville, CA) purchased an extensive Meyer Sound loudspeaker system to fulfill its monitoring and sound reinforcement needs, including more than 35 HM-1S monitors for control rooms and 11 RMS-equipped systems for the auditorium...Big Blue Meenie in New Jersey installed a 64-input, Rupert Neve-designed Amek 9098i console. Also installing 9098is are Idful Music in Chicago and Studio D in Sausalito, CA...Adrian Carr Music Designs Mastering (NYC) remodeled its mastering suite, adding 5.1 capabilities and a Cedar system for remastering and restoration...Swing House Rehearsal and Recording (Hollywood, CA) added a 16-channel Spirit LX7 console to its Room 2...Capitol Records (Hollywood) added Hafler TRM6 powered monitors and TRM10 powered subwoofers to a mastering room, complementing the TRM8s already in place...New York City's Harold Dessau Recording vacated its downtown locale when its lease expired last month. Owner Brian Kelly will continue producing various projects while he looks for a new home for the studio. ■

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FIELD TEST

—FROM PAGE 144, DSP•FX

way to hear an effect without having to boot another program. One gotcha, however, is that the processed output file is the same length as the input file. For plugs like pitch shift or parametric EQ, this is not a problem. Slap a nice, long reverb on a snare drum and you'll find that the result is a sharply gated snare with reverb. Nice Phil Collins effect, but not necessarily the one you were wanting. If you're going to use this part of the package for sound design, you'll need to add digital silence to the end of the source file before saving the output to a file.

Live Input mode takes the input from your sound card, allowing up to 24-bit depth and using 32-bit floating-point processing. On slower machines you'll need to increase input and output buffers for glitch-free results, but when set to the smallest size on fast machines, the delay throughput is about 93 ms.

The Settings dialog lets you select MIDI channel, MIDI device, sampling frequency, mix level and output level as well as offering a multi-card user to switch cards for monitoring and input. You can also toggle mono and stereo. (In mono, the effects respond only to the left input.)

To configure DSP•FX for MIDI control with an external device, you must install the DSP•FX MIDI Patcher, which comes with the Virtual Pack. The default MIDI settings conveniently map the knobs, sliders and buttons on a JL Cooper CD-10 MIDI controller to the DSP•FX plug-in controls. Since every parameter of the plug-ins can be controlled by standard MIDI controller commands, however, it's easy to use that old Fadermaster or MRC you've been storing in the studio closet.

You can send MIDI commands from a software sequencer to DSP•FX, selecting plug-ins and presets and changing parameters in real time. You can also use an external MIDI controller and record the commands in the sequencer as you THRU them to DSP•FX.

THE FUN STUFF

It's difficult to describe 11 plug-ins in depth in one short review, and, as a friend of mine once noted, "talking about music is like singing about football." (He is from Tennessee and wouldn't dream of dancing about architecture.)

For strange effects, the multi-tap

delay, analog tape flange, tremolo, pitch-shift and autopan can really cook up a weird brew in a couple of minutes. The pitch-shift is not the auto-detecting type (at least, not in this rev), but it's fine for "phattening" tracks. Analog tape flange is highly amusing and frankly, I've always wanted an auto panner, but I never wanted to spend the money for the hardware version. Now I just have to remember why I wanted one for the last decade or so.

If you like "exciting" the sound of audio programs by adding carefully tweaked harmonic distortion, then the AuralActivator is just the ticket. It's good for grunging up metal sounds, and some people use this type of processing on vocals. I generally don't, but then, I usually try not to cut vocals that need de-essing, either.

The Optimizer, a look-ahead peak limiter with dithering, is the plug that you'd never expect to get in a plug-ins package with a modest price tag. You can choose no dither, uniform dither (yields a pure zero output when driven by a zero input), triangular (for more dynamic range), and shaped (dither with added noise shaping). If you want some real grunge, use an 8-bit preset with no dither. For some games and certain slammin' drum sounds, ugly is good. Or it's bad, where bad means good...For the usual "shortening the word length from 24-bit to 16-bit for CD," dither is good, where good means...good.

THE JUDGEMENT

Lots of value for the money. As I was checking out Version 6.0 of DSP•FX Virtual Pack, I received a message that the 6.1 version was shipping, which includes support for Nullsoft's PC audio player, Winamp. This free upgrade enables users to change the sound quality of MP3 files and files using Microsoft Windows Media 4.0 audio compression software.

At a retail of \$299, it's hard to beat the price/performance ratio of DSP•FX Virtual Pack. It's a good assortment of audio effects for a comparatively modest price and it's a useful addition to any sound designer's toolkit.

Power Technology, 100 Northhill Blvd. #24, Brisbane, CA 94005; 415/467-7886; fax: 415/467-7386; www.dspx.com. ■

KK Proffitt is chief audio engineer of JamSync in Nashville, an audio post facility specializing in surround mixing and upmixing.

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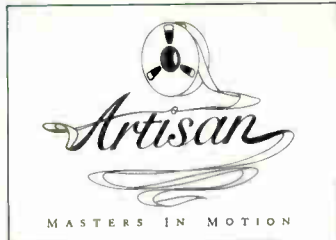
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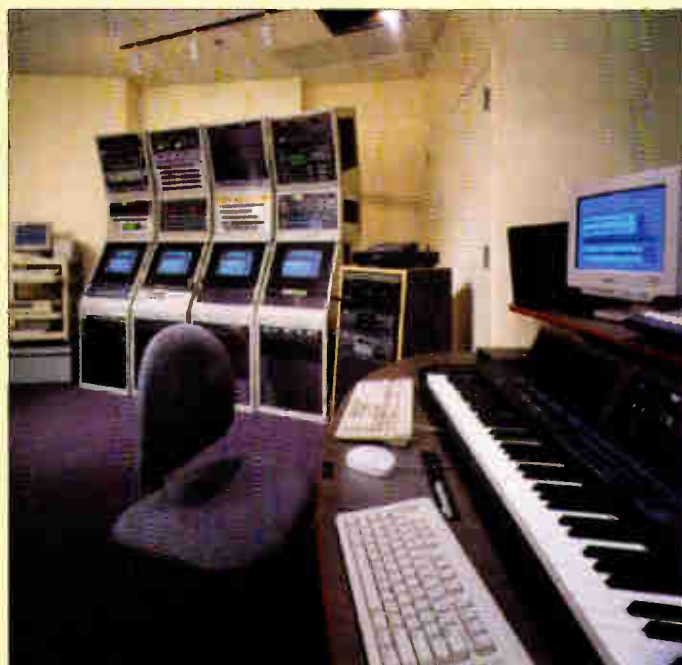
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- Truly the cutting edge of mixing technology.



* monitor, mouse & keyboard sold separately

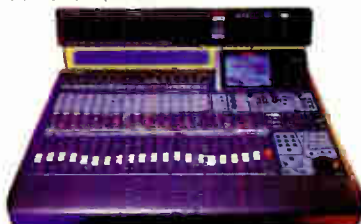


WR-DA7 Digital Mixing Console

Not dreaming about your digital future, it's here! The Panasonic WR-DA7 digital mixer features 32-bit internal processing combined with 24-bit A/D and D/A converters as well as moving faders, start recall, surround sound capabilities, and much more. Best of all, it's from Panasonic.

FEATURES-

- 32 Inputs/6 AUX send/returns
- 24-bit converters
- Large backlit LCD screen displays EQ, bus and aux assignments, and dynamic/delay settings.
- 4-band parametric EQ
- Choice of Gate/Compressor/Limiter or Expander on each channel
- 5.1 channel surround sound in three modes on the bus outputs
- Output MMC
- Optional MIDI joystick



* meter bridge optional



TMD1000 Digital Mixing Console

Do you want to see what all the digital mixing buzz is about? The NEW TMD1000 from Tascam will have you smiling & automating in no time. It features fully automated EQ, levels, muting, panning and more in an attractive digital board with an analog feel. Your digital future never looked, or sounded, so clear.

FEATURES-

- 4 XLR mic inputs, 8 1/4" balanced TRS inputs.
- 20-bit A/D D/A conversion, 64x oversampling on input, 128x on output.
- Store all settings, fully MIDI compatible.
- Optional IF-TD1000 adds another 8 channels of TDF and a 2-channel sample rate converter.
- Optional FX-1000 FX board adds another 4 dynamic processors and another pair of stereo effects.



DIGITAL RECORDING



Lexicon Studio Recording System

The Lexicon Studio System interfaces with your favorite digital audio software for a complete hard disk recording package. Supporting both PC and Mac, Lexicon Studio can be expanded up to 32 voices from a variety of I/O options. For recording, editing, mixing and DSP, Lexicon Studio is here.

FEATURES-

- The Core-32 System PCI-Card is capable of supporting 32 audio streams simultaneously. It can also be used as a time code or clock master or slave.
- The PC-90 Digital Reverb daughterboard attaches to the Core-32 providing 2 discrete stereo reverbs.
- The LDI-12T delivers up to 12 channels of simultaneous I/O supporting analog (+4 XLR and -10 RCA), S/PDIF, and ADAT.
- Direct support of Steinberg Cubase VST and many other software programs.



OPTIONS-

- The LDI-16S provides 8 channels of +4 XLR balanced analog I/O, and 8 channels digitally through TDF.
- 3 option packages are:
 - AES-8, 8 channels of AES/EBU digital I/O
 - ADT-8, 8 channels of ADAT digital I/O and sync
 - STC-1, Post option including read and write of LTC, read and generate of VCC, Window-burn House Sync and a General Purpose Interface for triggering external devices from the system).

EFFECTS PROCESSING



Finalizer Express



The Finalizer Express is a fast and efficient way to turn your mix into a Professional Master! Based upon TC's Multi-Award winning Finalizer Mastering Technology, it delivers the finishing touches of clarity, warmth and punch to your mixes, putting the world of professional mastering within your reach.

FEATURES-

- 24-bit resolution A/D and D/A converters
- 16 & 20 bit dithering
- TC's unique Multiband Comp & Limiter Algorithms
- Boost and cut over three bands with the Spectral Balance Controls
- Soft Clipping and Look Ahead Delay.
- Finalize Matrix for 25 variations in style and rate
- Optimize overall level with the Automatic Make-Up Gain
- Extra compression in each band using Emphatic keys
- Record fades from the built-in Digital Fader or the optional TC Master Fader via MIDI.
- Connections include AES/EBU, S/PDIF, Optical Toslink & MIDI I/O's.
- High Res LED Metering of I/O & multi-band gain reduction

M3000 Professional Reverb



Incorporating TC Electronic's new VSS-3 technology, the M3000 is a great sounding, versatile reverb that is easy to use. Combining ultimate control of early reflections with a transparent reverb tail, the art of reverb is brought to a new level. Whether it's a phone booth, cave or concert hall, the M3000 delivers high-quality ambience.

FEATURES-

- VSS-3 VSS-3 Gate, C.O.R.E. & REV-3 reverbs as well as Delay, Pitch, EQ, Chorus, Flanger, Tremolo, Phaser, Expander/Gate, Compressor and De-Esser
- 300+ high-grade factory presets including Halls, Rooms, Plates, Ambience, Gated Reverbs, and more
- Up to 300 user presets in internal RAM and 300 more using an optional PCMCIA card.
- Dual engine configuration featuring 24-bit A/D/D/A's.
- Connections include AES/EBU, Coaxial S/PDIF, Optical Toslink/ADAT & analog XLR I/O's. MIDI IN/OUT/THRU, Clock Sync and External Control.



MPX1 Multi-Effects Processor



The MPX-1 is truly an outstanding multi-effects device. Using Lexicon's Lexchip, it offers outstanding reverb and ambience as well as a separate processor for effects for awesome power in the studio or on the road.

FEATURES-

- Intuitive user interface for easy editing, built-in help.
- Balanced Analog I/O (1/4" & XLR)
- 56 effect algorithms
- Digital Inputs & Outputs (S/PDIF @ 44.1KHz)
- 18 Bit A/D; 20 Bit D/A Conversion, 32-bit processing
- 90dB of Dynamic Range
- Intelligent Sorting by Name, Number, Application, etc.
- Parameter Morphing
- Dynamic MIDI patching & MIDI automation

COMPRESSORS



ACP88 8 Channel Compressor

Stemming from their popular ACP8, the ACP88 comprises eight channels of compression, limiting and noise gating for a variety of studio applications. It features individual side chain for each channel and its attractive blue anodized finished lets you show your true sonic colors.



FEATURES-

- 8 separate compressors/gates with individual controls.
- Servo balanced or unbalanced inputs & floating balanced or unbalanced outputs.
- Individual side chain jacks for spectral compression and a separate sidechain jack for gate processing.
- Each channel boasts full gain reduction metering, compression threshold indication & gate open/close.
- Front panel buttons include hard/soft knee compression, peak/auto compression, bypass, gate range and link.
- Link feature uses a unique summing bus for multiple combinations of master/slave link setups.



Model 566 "Silver Series" Compressor

The new Silver Series introduces a 2 vacuum tube circuit design making the 566 no ordinary compressor. Loaded with features including custom designed analog VU meters that monitor tube level, gain reduction, or output levels. Full sidechain functionality, including sidechain monitor, contour function allows low frequency material to pass through the threshold without triggering un-musical compression effects.

FEATURES-

- Hand selected Premium 12AU7 vacuum tubes
- +4/+10 operation
- Drive control for a wide variety of great tube effects
- PeakPlus limiter on each channel
- Complete sidechain, OverEasy, and Auto function
- Optional TYPE IV Conversion System outputs
- Separate 1/4" sidechain insert send and return



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HARD DISK RECORDERS

Roland



VS1680 Digital Production Studio

The new VS-1680 Digital Studio Workstation is a complete 16 track, 24-bit recording, editing, mixing and effects processing system in a compact tabletop workstation. With its advanced features, amazing sound quality and intuitive new user interface, the VS-1680 can satisfy your wanderlust.

FEATURES-

- 16 tracks of hard disk recording, 256 virtual tracks.
- 24-bit MT Pro Recording Mode for massive headroom and dynamic range.
- Large 320 x 240 dot graphic LCD provides simultaneous level meters, playlist, EQ curves, EFX settings, waveforms and more.
- 20-bit A/D D/A converters
- 2 optional 24-bit stereo effects processors (VS8F-2) provide up to 8 channels of independent effects processing.



- New EZ routing function allows users to create and save various recording, mixing, track bouncing and other comprehensive mixer templates for instant recall.
- 10 audio inputs: 2 balanced XLR-type inputs w/ phantom power, 6 balanced 1/4" inputs, and 1 stereo digital input (optical/coaxial)
- 12 audio outs: 8x RCA, 2x stereo digital & phores. Direct audio CD recording and data backup using optional VS-CDR 16 CD recorder.

CD RECORDERS

Fostex

CR200 Professional CD Recorder

The Fostex name is not all this CD Recorder has to offer. The CR200 features S/PDIF I/Os, balanced XLR analog input, 5 record modes as well as a full function remote. A great choice for burning CDs in any studio or home recording environment.

FEATURES-

- Converts any input signal to CD 44.1kHz standard
- Uses both Professional and Consumer CD formats
- S/PDIF Inputs and Outputs for versatile interfacing.
- AES/EBU In, XLR Balanced Ins, Unbalanced Ins & Outs
- 5 Record Modes, Records To Red-Book Standards



- IDs Recorded Automatically
- Durable Platter Mechanism Resists vibrations
- Full-function Remote Included

STUDIO DAT-RECORDERS

TASCAM

DA-45HR Master DAT Recorder

The new DA-45HR master DAT recorder provides true 24-bit resolution plus standard 16-bit recording capability for backward compatibility-making this the most versatile and great sounding DAT recorder available. With support for both major digital I/O protocols plus the ability to integrate the machine into virtually any analog environment, the DA-45HR is the ideal production tool for the audio professional.

FEATURES-

- Word Clock
- 24-bit A/D and 20-bit D/A with dither
- XLR balanced and RCA unbalanced analog I/O
- AES-EBU and S/PDIF digital I/O



- Word Sync In/Thru
- Alphanumeric data entry for naming programs
- Independent input level adjustment capability
- Output trim for XLR balanced analog output
- Optional RC-D45 Remote Controller

DIGITAL MULTI-TRACK RECORDERS

TASCAM

DA-88 Modular Digital Multitrack

The standard digital multitrack for post-production and winner of the Emmy award for technical excellence, the DA-88 delivers the best of Tascam's Hi-8 digital format. Its Shuttle/Jog wheel and track delay function allow for precise cueing and synchronization and the modular design allows for easy servicing and performance enhancements with third-party options.

FEATURES-

- 1:48 minutes record time on a single 120 min tape
- Expandable up to 128 Tracks using 16 machines
- User-definable track delay & crossfade
- Shuttle & Jog capability
- Auto punch with rehearsal



- SMPTE, MIDI and Sony 9-Pin sync capability
- Options include RC-801/848 Remote Controllers, IF-88AE/IF-885D digital interfaces, MU-Series meter bridge, MMC-88 MIDI machine control interface, SY-88 Sync Card

DA-38 Digital Multitrack for Musicians

Designed especially for musicians, the DA-38 is an 8 track digital recorder that puts performance at an affordable price. It features an extremely fast transport, Hi-8 compatibility, rugged construction, ergonomic design and sync compatibility with DA-88s.



ALESIS

ADAT M20 20-bit Digital Audio Recorder

The M20 represents Alesis commitment to meeting the high-standards of world-class audio engineers, producers, studio owners and high-end video and film post production studios. A new professional digital multi-track, the M20 records 20-bit for outstanding sound quality. Combined with a host of production features like SMPTE/EBU, the M20 is a powerful tool.

FEATURES-

- SVHS Recording format - up to 67 minutes recording.
- 18-XLR connections (9 in and 9 out) as well as a 56-pin ELCO connection.



- 24-bit, 64x oversampling recording, 20-bit, 128X oversampling playback
- Digital I/O
- Includes LRC remote and a digital cable.

ADAT XT20 Digital Audio Recorder

The New ADAT-XT20 provides a new standard in audio quality for affordable professional recorders while remaining completely compatible with over 100,000 ADATs in use worldwide. The XT20 uses the latest ultra-high fidelity 20-bit oversampling digital converters for sonic excellence, it could change the world.

FEATURES-

- 10-point autolocate system
- Dynamic Braking software lets the transport quickly wind to locate points while gently treating the tape.



- Remote control
- Servo-balanced 56-pin ELCO connector
- Built-in electronic patchbay
- Copy/paste digital edits between machines.

ADAT LX20 Digital Audio Recorder

The most affordable ADAT ever made, the new LX20 features true 20-bit recording at a price you won't believe. Compatibility with all other ADATs and digital consoles, the LX20 provides the same sync options and digital inputs as the big brother XT20 at a lower price point.

Fostex

D-15 Pro Studio DAT Recorder

The new Fostex D-15 features built in 8Mbit of RAM for instant start and scrubbing as well as a host of new features aimed at audio post production and recording studio environments. Optional expansion boards can be added to include SMPTE and RS-422 compatibility, allowing the D-15 to grow as you do.

FEATURES-

- Hold the peak reading on the digital bargraphs with a choice of 5 different settings
- Set cue levels and cue times
- Supports all frame rates including 30df
- Newly designed, 4-motor transport is faster and more efficient (120 minute tape shuttles in about 60 sec.)
- Parallel interface • Front panel trim pots in addition to the level inputs



D-15TC & D-15TCR

The D-15TC comes with the addition of optional chase and sync capability installed. It also includes timecode reading and output. The D-15TCR comes with the further addition of an optional RS-422 port installed, adding timecode and serial control (Sony protocol except var-speed)

SONY **PCM-R500**

Incorporating Sony's legendary high-reliability 4D.D. Mechanism, the PCM-R500 sets a new standard for professional DAT recorders. The Jog/Shuttle wheel offers outstanding operational ease while extensive interface options and multiple menu modes meet a wide range of application needs.

FEATURES-

- Set-up menu for preference selection. Use this menu for setting ID6, level sync threshold, date & more. Also selects error indicator.
- Includes 8-pin parallel & wireless remote controls



- SBM recording for improved S/N (Sounds like 20bit)
- Independent L/R recording levels
- Equipped with auto head cleaning for improved sound quality.

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TUBE MICROPHONES



SOLIDTUBE TUBE MICROPHONE

The SOLIDTUBE combines the best of solid state and tube technology to provide a warm sounding microphone suitable for professional recording applications.

FEATURES-
Large diaphragm condenser integrated pop screen surrounds the capsule, reducing excessive pop noise
ECC 83 (12AX7) vacuum tube which provides perfect transfer characteristics
Includes elastic shock mount
Low-cut switch, Ground lift switch



audio-technica AT4060

Combining premium 40 series engineering and vintage tube technology, the AT4060 delivers a versatile and competent studio microphone. Low-noise and high SPL capabilities make the AT4060 a premier vocal mic as well as strings, guitars and other demanding applications.

FEATURES-
20 - 20,000 Hz freq response
Dual gold-vaporized large diaphragm elements
Includes the AT8560 power supply, AT8-47 shock mount, rackmount adapters and case.



MICROPHONES

SHURE KSM-32

The new KSM32 side-address microphone features an extended frequency response for open, natural sound reproduction. Suitable for critical studio recording and live sound production, Shure steps up to the plate with another classic.

FEATURES-
• Class A, transformerless preamplifier circuitry for improved linearity across the full frequency range.
• Exceptionally low self-noise and increased dynamic range necessary for highly critical studio recording.
• 15 dB attenuation switch for handling high SPLs.
• Switchable low-frequency filter to reduce vibration noise or to counteract proximity effect
• Great for vocals, acoustic instruments, ensembles and overhead mixing of drums and percussion.
• SL model also features an elastic shock mount which greatly reduces external vibrations



BPM CR10

Hand-crafted in East Berlin, the BPM CR10 Studio Condenser Mic features a full frequency response for competition against the best of the best.

FEATURES-
• 1" Gold diaphragm
• Suitable for most guitar and vocal recording applications.
• Includes Custom Aluminum Road Case, XLR-cable, wind screen and elastic suspension.



SAMPLING

AKAI



\$5000 & \$6000 Studio Samplers

Akai is proud to announce its next generation of samplers with the introduction of the S6000 and the S5000. Building upon Akai's legendary strengths, both machines feature up-to 128-voice polyphony and

up-to 256 MB of RAM. They use the DOS disk format and .WAV files as the native sample format allowing standard PC .WAV files to be loaded directly for instant playback - even samples downloaded from the Internet into your PC may be used. And of course, both the S6000 and S5000 will read sounds from the \$3000 library.

FEATURES-
• OS runs on easily upgradeable flash ROM.
• 2x MIDI In/Out/Thru ports for 32 MIDI channels
• Stereo digital I/O and up to 16 analog outputs.
• 2x SCSI ports standard
• Wordclock connector.
• Optional ADAT interface provides 16 digital outs
• .WAV files as native sample format

\$6000 ONLY FEATURES-
• Removable front panel display
• User Key
• Audio inputs on both the front and rear panel allow you to wire the S6000 directly into a patchbay from the back and override this connection simply by plugging into the front.



E-MU Systems, Inc.

E6400 Professional Sampler

The e-6400 from EMU features an easy interface that makes sampling easy. Automated features like looping, normalizing and more allow you to flexibly create your own sound palettes or access any of the 400 sounds provided on 2 CDs for unlimited sound creation. It is upgradeable to 128MB of RAM (4MB standard) and features 64 voice polyphony, 8 balanced analog outputs, SCSI, stereo phase-locked time compression, digital re-sampling and more. A dream machine.



MIC PREAMPS

Focusrite Green 3 "Voicebox MKII"

The Voicebox MKII provides a signal path of exceptional clarity and smoothness for mic recording, combining an ultra-high quality mic amp, an all new Focusrite EQ section optimized for voice, and full Focusrite dynamics. The new MKII now includes a line input for recording and mid/down applications.

FEATURES-
• +48V Phantom power, phase reverse, and a 75Hz high-pass filter.
• Mute control and a true-VU response LED bargraph are also provided
• Includes a Mid-Parametric band with controls especially designed to enhance vocal characteristics.
• Single balanced Class A VCA delivers low distortion and a S/N ratio as low as -96dBu
• Dynamics section offers important voice processing functions such as compression and de-essing combined with a noise reducing expander.

dbx 586 Vacuum Tube Mic Pre

The DBX 586 Vacuum Tube Dual Mic Preamp uses hand selected and matched premium 12AU7 vacuum tubes ensure ideal characteristics for a warm, distortion free signal path. Custom designed analog VU meters monitor tube level insert path or output levels well. Line/Instrument and mic inputs make the 586 versatile enough to use with virtually any input source.

FEATURES-
• Mic or line/instrument inputs on each channel.
• +4/-10 operation.
• Drive control for a wide variety of great tube effects
• 3-Band EQ with sweepable frequency
• Optional TYPE IV Conversion System outputs
• Separate 1/4" insert send/return on each channel



JOE MEEK VC1 Studio Channel

The Joe Meek Studio Channel offers three pieces of studio gear in one. It features a transformer coupled mic pre compression and a professional enhancer together in a sleek 2U rackmount design!

FEATURES-
• 48V phantom power. Fully balanced operation
• Mic/Line input switch
• High pass filter for use with large diaphragm mics
• Extra XLR input on front makes for easy patching
• Compression In/Out & VU/Compression meter
• Enhancer In/Out switch and enhance indicator
• Internal power supply 115/230V AC



MONITORS



M6000/S Studio Monitors

The KRK M6000/S are designed for close-field monitoring. A smooth frequency response in a compact size make these units portable and efficient.

FEATURES-
• High power handling
• 62Hz - 20kHz, ±3dB
• Compact and portable
• Low distortion
• Smooth frequency response
• Custom Gray finish.



Hafler TRM-8

Powered Studio Monitors

Winner of Pro Audio Review's PAR Excellence Award in 1997, Hafler's TRM8s provide sonic clarity previously found only in much more expensive speakers. They feature built-in power, an active crossover, and Hafler's patented Trans-nova power amp circuitry.

FEATURES-
• 45Hz - 21kHz, ±2dB
• 75W HF, 150W LF
• Electronically & Acoustically matched



MACKIE

HR824

These new close-field monitors from Mackie have made a big stir. They sound great, they're affordable, they're internally bi-amped "What's the catch?" Let us know if you find one.

FEATURES-
• 150W Bass amp, 100W Treble amp
• Full space, half space and quarter space placement compensation
• Frequency Response 39Hz to 22kHz, ±1.5dB



TANNOY Reveal

The latest playback monitor from Tannoy, the Reveal has an extremely detailed, dynamic sound with a wide, flat frequency response.

FEATURES-
• 1" soft dome high frequency unit
• Long throw 6.5" bass driver
• Magnetic shielding for close use to video monitors
• Hard-wired, low-loss crossover
• Wide, flat frequency response
• Gold plated 5-way binding post connectors



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MASTERING'S FINEST

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—FROM PAGE 181, BATTLE OF THE TRAILERS

tag for the DTS logo. It feels like a day when the sun goes up and down; it has a nice structure."

Werzowa relied on both sound libraries and on elements he recorded with an Artificial Head microphone and a rackmounted Pro Tools system. He went back to his own studio, which includes four Pro Tools 24 systems (64 channels, with 18-gigabyte removable drives) with "probably every available plug-in on the market," as well as a bevy of keyboards including 12 Emulator E-IVs, eight SV-760s and a Jupiter 8.

Once he was done with the composition, he took 64 tracks of music and sound design to re-recording mixer Eric Martell at Todd-A/O in Los Angeles. Because Werzowa delivered stereo elements, Martell found he had to double some tracks, add reverb here and there and adjust some EQ. All in all, though, he says he barely touched them. "Technically there wasn't a lot involved," Martell recalls. "I didn't do any processing, I didn't do any manipulation of the sound itself other than some subtle EQ, and because it's an analog board going to SR mag, there wasn't a lot technologically that I needed to do. Walter did a lot of that work himself with the plug-ins and the Pro Tools." Martell was working on a vintage ADM console (with Neve Flying Faders) that was originally in the Glen Glenn facility; he ran Werzowa's Pro Tools tracks through Apogee converters.

One of the big questions for the mix was what to actually put in the surround channels. Martell reports, "First we tried everything, and that was not distinct enough. Then we were picking and choosing a lot of different combinations so that the surrounds were acting independent of what was going on up front. That took quite a bit of time." In order to add to the subharmonic feel of the piece, he added parts of Werzowa's music bed to the low end by taking an effects send of the appropriate channel and sending it to a subharmonic synthesizer to drop it an octave. Then he fed it back into a spare channel through a lowpass filter and added it to the subs. The goal of that was not to necessarily demonstrate the powerful capabilities of the subs, he says, but just "to extend the low end and to give you the sense of a real broadband frequency response." ■

David John Farinella is a frequent contributor to Mix and other national music publications and Internet sites.

THE FAST LANE

—FROM PAGE 20, CHRONIC SOFCOSIS

ing and death? Nah, that's not for me. I find it best if they've seen me recently on MTV or have my CD in their Toyotas. But I digress.

Exactly what makes IBS so insidious, you might ask? The answer is shocking—to one degree or another, *each and every one of you has this disorder!* Recent events have forced me to face the fact that even I, armed with the knowledge that I am imparting to you today, am not immune. Yes, I too have IBS.

THE PATHOLOGY

The potential for IBS begins with one's

**The patient becomes
bipolar: at once enjoying
the technology while
feeling deep-seated
anxiety about how long
it will remain valid,
when the next version
will appear.**

first contact with a technology that he or she chooses to integrate into his or her life. Let me point out that the actual condition does not exist at this point. Utilizing or even relying on any technology does not in itself bring the onset of the disorder (however, it is possible to determine the subject's genetic disposition to the various forms of the disease at this point).

The second step, the exposure that commits the subject to the disease, seems so innocent and natural to most that they never realize they have it until it is far too late. This second damning exposure is *the alteration of that technology*. Specifically, replacing the technology with a better one from another source, or even more dangerous, upgrading the technology from the original source.

At this point you may be asking what the hell is this guy talking about? I think I can quickly clear it up for you with a classic example of a seemingly innocent and frivolous technology that we all remember.

YEA, THOUGH I WALK(MAN) THROUGH THE VALLEY OF DEATH

We, the recording community, were once, in those early cassette years, reasonably happy to wait until we were in a building or car to listen to our cassettes. But then Nakamichi came out with an amazing new technology, a *portable* cassette player. Weighing a mere 120 pounds, and getting more than 15 minutes play time on 48 D cells, it redefined our listening world. I carried one on every flight, and beautiful women fought to sit next to me and bask in the warm glow of seemingly magical alien technology. Little did they know the warm glow was the power supply. And little did I know this was phase one of IBS.

Then, some time later, Sony came out with the Walkman, one-hundredth the size and one quarter the price of the Nak. So we had phase two—replacement technology. Now it begins. New women sat next to me to see the Amazing Walkman and, of course, the Amazing Guy who was cool enough to have it. And here is where it gets complicated; here is why the disease is so horrible. At this point *many* factors come into play, committing the victim (in this case myself) to the heartbreak of IBS for life.

The primary subject (the individual who has been in direct contact with both stage one and stage two technologies) now has two references subconsciously waiting to drive him insane. He knows when he acquired the first technology, and what it could do. He also knows when he acquired the second, or replacement technology, and what *it* could do.

Armed with these observations, the patient doesn't take long to extrapolate an imaginary timeline that he perceives as "the natural rate of technological development." He is now doomed, a soul forever lost. The condition has now been *induced* by the exposure to two states of a given technology, separated by time.

Even as the victim enjoys his new, improved technology, even as he again impresses those around him, he is haunted by a new awareness that what he *has* might itself be improved upon at some point. As he continues to use the product, he develops a growing anxiety, projecting that it in fact probably *will* be improved, and his unit will suddenly become obsolete. And why shouldn't he harbor these fears? After all, it has already happened to him once.

To further exacerbate this condition,

THE FAST LANE

the subject will typically develop a growing awareness that when this does, in fact, take place, his precious device will not merely become less desirable but will, in fact, instantly make a transition from an impressive status symbol to an obsolete joke—a source of embarrassment and ridicule, often leading to acute sexual dysfunction. After all, it is difficult to have sex with someone if that person sat down next to the guy across the aisle because he had cooler techtoys.

SAY IT ISN'T SO, DOC!

Possessing obsolete technology says all the wrong things about a person in a social environment. It says he is not aware, not keeping up with the newest advances. It says he is not connected, that he doesn't know anybody inside the leading techno-corporations who will get him one before anybody else has it. And perhaps most sad of all, it says he doesn't have the money to buy the new one, the means to keep on top.

So the patient becomes bipolar: at once enjoying the technology while feeling deep-seated anxiety about how

long it will remain valid, when the next version will appear.

The condition usually degenerates further when the patient comes to realize that the technology not only might be, but probably *should be* improved. He begins to become aware that the

**Patients have been
known to argue
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when they want them.**

Stop button is a little too small, and might work better if it were moved slightly to the right. Perhaps he wishes for better EQ control. Maybe he dreams of an even *smaller* case.

These thoughts further undermine the satisfaction with the product, while simultaneously exciting the patient as he fantasizes about what the next version might be like. More dichotomy, more conflict.

And here is where it all comes together, a psychological one-two punch that is impossible to avoid.

Even while enduring the IBS stages described above, the patient is aware of that "timeline." He develops the overwhelming feeling that the next generation is about to come out, as he extrapolates from those two previous points. Now, in addition to all the existing psychological manifestations, he must deal with the imminent appearance of a horrible yet exciting unknown. He knows only that any day now, an ad in a magazine will instantly kill his current technology, yet offer him salvation even as he sits staring at a lap covered with cinders of what was before.

I CAN STOP ANY TIME I WANT

The more intelligent individuals will realize at this point that they are, in fact, addicted and must decide to up the ante once again, knowing that it will continue for the rest of their lives, or

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admit defeat and quietly bow out, knowing full well that they can never again appear in public with their pathetic final technological choice.

And if they *do* upgrade, which they all do—if not this generation, the next—they are faced with still *another* unresolvable issue, yet another mix of satisfaction and disappointment. Inevitably, the individual's hopes for additional features and performance will be answered in three ways:

A) Some items will be exactly what was hoped for, and some might even exceed these hopes, thereby strengthening the addiction by rewarding patience and loyalty.

B) Certain problems may be repaired or improved, but not in the manner the patient had envisioned, thereby causing mild confusion and a distant undefined feeling of not being loved or understood.

C) Items hoped for or perceived as needed are blatantly missing, simply ignored by the manufacturer. This produces a profound sense of abandonment, leading to disappointment and often anger.

So you see, after the second release, each subsequent one further enforces the patient's bipolar behavior. And therein lies the true insidious nature of IBS.

BUT IT'S IBS, INDUCED BIPOLAR SOFCOSIS

Yes, it is. The entire scenario defined above is not true IBS; it is an intermediate condition that must be understood in order to fully grasp IBS itself.

Up to this point, the offending technologies have all been *hardware*-based. This is an important distinction to make, as we all automatically assign a tangible value to a physical object, simply because it *exists* within the world of our perceptions. We can touch it, feel it, drop it and break it. We grant technological advancement a certain respect, as we intrinsically understand that it takes time and money to alter a physical design and bring a new model into production.

But for true IBS to become epidemic, as it now is, *software* had to become integrated into our lives. The hardware had to be reduced to a commodity, as it recently has. People now buy computers specifically to run the software that they wish to use.

Software will soon be all there is, yet it is difficult for many to understand that it is just as real as the rapidly aging hardware it replaces. Users simultaneously praise and disrespect their soft-

ware. They use it at home, at work and even in between, yet they assign very little value to it.

Since software lacks a physical metal case and front panel, it is difficult for many to understand that the development cycle is just as time-consuming and expensive as it was for hardware. They feel that it can't really be worth that much, since it's just a CD punched out by a machine at night while nobody is working. Yet they can't live without it.

And because software is more malleable, revisions often offer considerably more dramatic improvements than their hardware counterparts, generating a much steeper "advancement timeline" in the minds of the users. It is this dizzying rate of software advancement that sets the stage for our current epidemic of true IBS—the beginning of a lifetime of inseparable pain and joy.

**THE FINAL STAGES—
PATHETIC YET UNAVOIDABLE**

Because each new revision of a popular software product goes out to so many users, and may offer not two or three, but 20 or 30 new features and improvements, and because these products often have a dedicated following on the Internet within newsgroups, a new symptomatology of IBS is beginning to appear.

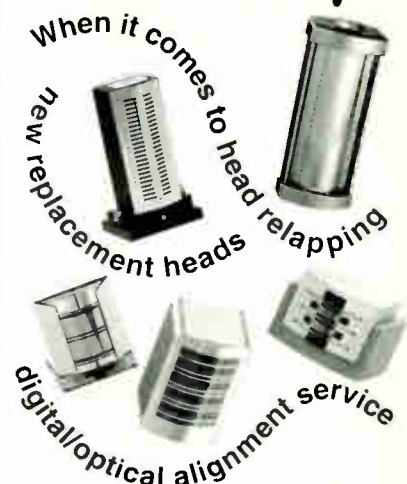
Patients have been known to actually argue and fight, on occasion becoming downright sociopathic in their efforts to get the features *they* want *when* they want them. As end-users have never before had the opportunity to influence the development of the next revision of a product they use directly, this newfound power may, on occasion, lead to the more bizarre manifestations of advanced IBS, clearly a result of the internal conflict resulting from simultaneously having the power to help design their next product revision, and being faced with the frustration of it not happening fast enough to make next Saturday's session.

IBS—a virtual disease with profound real-world manifestations.

In closing, I ask you to consider the long-term ramifications of an entire society infected with chronic IBS. To help you get started, is not the Y2K issue an inevitable extension of IBS? A perceived threat to our very addiction to software itself? Or is it just IBS (Incremental Bull S—)?

This month's column is dedicated to Shel Silverstein (1932-1999)—friend and family.

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INSIDER AUDIO

—FROM PAGE 29, PERILS OF THE FREE MARKET
Grumpmeier again, outside a coffee shop. "So how'd that TV project work out?" I asked. "Did you get any flack from the store about bringing that deck back?" "Oh, it went fine," he said, "and the store didn't give me any trouble, because I never took it back." He sighed. "My wife got one look at how good the picture was and demanded we put it in the bedroom. And I'd already ordered the industrial deck for my studio, so now I have two new decks, both of which I gotta pay for. And now she's screaming that we need a new TV set to match the quality of the VCR. Guess I'll have to get another credit card." I was watching the utter defeat of a man whose sole purpose in life is to be cheap.

"But you know what's really bothering me?" he moaned. "My teenage daughter wants to have a big party next weekend, and she went down to that same store and came home with this enormous, ridiculously overpowered system with a subwoofer the size of a filing cabinet. I asked her how she could afford it, and she looked at me like I was a blithering idiot and said, 'But, Daddy, I'll bring it back next week!'"

SPRING CLEANING

Well, as you read this it's summer, but as I'm writing this the peonies are just popping out of the ground. And besides, "summer cleaning" just hasn't got that ring. So besides throwing out that pile of 400k floppies I've been collecting, I'm going to take this opportunity to clean off some of the reader correspondence that's been piling up on the old Insider Audio desk.

My mention of Auratone "road cubes" as favorite "vintage" equipment (November '98) has generated a lot of mail, including a note from Bob Watson that appeared in our May Feedback column, and several responses along the lines of, "Yeah, I loved Auratones too. Where can I get some?" As far as I can tell, the company that made them is out of business, and no one has picked up the line. Perhaps a reader knows different. Certainly there are a few available used, but you can't have mine.

The column describing my horrible problems trying to get MIDI, SMPTE, and digital audio synchronized (June '98) prompted an awful lot of people to ask me what the culprit software was. I'm still not telling, but the manufacturer has indeed fixed the problem, and I just finished another TV project (with the

same production company) in which I did the music the same way, which turned out fine. Besides using the newest software, there was one other major change in my procedure: I locked the digital audio to word clock coming from a Mark of the Unicorn MIDI Time Piece A/V, which also served as the SMPTE source driving the sequencer. And the manual now says that I shouldn't have done what I did last time: "If you've already recorded MIDI...synchronized to SMPTE, don't record audio while synchronized to SMPTE...[They] will not correctly line up...during playback."

Thanks a lot. There's still no excuse for unlocked audio being 1% off (I checked my original SMPTE source against the MTP A/V's internal timer, and the difference was never more than 1 Hz out of 44,100), but at least now I know the workaround. And I also know that from now on, at least when I'm working against picture, I will never trust a digital audio system that can't be locked to an outside sync source.

I've also gotten a lot of mail about the horrors of upgrading a Power Computing Mac clone with a G3 accelerator card (February '99), mostly asking, "Did you ever get Pro Tools working?" The answer, I'm happy to say, is "Yes." I had to shuffle the Pro Tools and video cards around a couple of times (and if you recall the absurd SCSI connector on the NuBus Pro Tools III systems, you'll know this is no picnic) and ignore Digidesign's explicit directions about which cards to put where, but I eventually found a combination that works.

Finally, in response to my March '99 column about the Bell Labs reunion celebration, Lauren Weinstein, who describes himself as "one of the old men of the Internet," told me about his Web site, which features a brief but fascinating history of computer music, including a streaming version of the original computer-generated "Daisy." Check out www.vortex.com/comphist. Laurie Spiegel, who started her distinguished career as an experimental musician at the Labs, has documented a lot of her work there at her site: www.dorsai.org/~spiegel/. And if you missed the article, Art & Science Collaborations Inc., who presented the panel, have posted a copy of it (with our permission, of course) on their site: www.asci.org. ■

Paul D. Lebrman is a composer, educator, consultant and the editorial director of Mix Online. He is celebrating the 20th anniversary of the last time he had a full-time job.

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Digital Consoles

—FROM PAGE 54, DIGITAL CONSOLES

ins (two XLR with phantom power), four additional line inputs), eight buses, two compressors, one or two stereo FX



Roland VM-C7200

processors, 16 MIDI faders, transport controls and scene automation. The \$1,295 VM-3100Pro also includes eight channels of MDM or other expansion box interface, as well as COSM Speaker Modeling

Spirit (www.spirithysoundcraft.com)

Spirit is "preparing to launch" Version 1.5 software for the \$4,999 Digital 328 console (currently V. 1.1), which features ADAT, TDIF, AES, and S/PDIF digital inputs, 16 UltraMic preamps, 16 line inputs and five stereo inputs. Outputs include TDIF, AES and S/PDIF.



Spirit Digital 328

MIDI (used for snapshot and dynamic automation of all parameters) and word-clock I/O are also supported, as are Sony 9-pin control and SMPTE time-code input. Three optional interface boxes (AES/EBU, analog RCA and Mic/Line) are available to allow connection of additional inputs and/or outputs via the 328's two TDIF ports.

The free "major upgrade" software revision includes FX cascading, added Dynamics memory locations, 32-channel MIDI control, 64 MIDI controller

memory locations, sync to Superclock (256-x word-clock), true stereo grouping and automatic switching from external to internal word-clock if the external clock source becomes invalid. On the hardware side, Spirit's new Mic/Line Interface has eight additional balanced analog mic preamps/line inputs (with LED meters, analog insert jacks and direct outputs) and onboard 24-bit A/D converters that interface via the 328's TDIF ports. Particularly suited for live sound applications, the two-rackspace interface retails at \$649, and two units can be combined to add 16 more analog inputs to 328.

Tascam (www.tascam.com)

Tascam's digital console line is set to expand to three models with shipment this month of the new TM-D4000, a 32x8x2 digital mixer with 4-band fully parametric EQ, dynamics on each channel, surround sound panning (via bus 1 through 6), and 24-bit converters on analog I/Os, stereo master and monitor outs. Priced at \$4,299, the console comes with eight analog ins and has slots for optional TDIF, ADAT, AES or analog inputs on channels 9 through 32 (at prices ranging from \$199 to \$499). The console also supports MIDI in/out thru, and up to four may be cascaded. Snapshot automation is included; dynamic automation is available with an external host PC.

Shipping since September 1998, the \$1,299 TM-D1000 is a 16-channel digital board (1-8 analog, 9-16 TDIF) supporting four groups, four aux buses, four XLR inputs with phantom power, two AES or coaxial digital outputs, one AES or coaxial digital input, digital dynamics, stereo effects, and a 128-scene snapshot memory with front panel or MIDI recall.

Yamaha (www.yamaha.com)

Yamaha's digital console line remains stable with three models, the 01V, 02R and 03D. But the company has introduced the MY4-AD, a new 24-bit A/D conversion card for the 02R and the 03D, with user-switchable in/out levels (-10, +4 or +10). "We are very pleased to offer this new card," says national sales and marketing manager Larry Italia, "because our customers will now be able to take advantage of the 24-bit in/out word-length capability of the 02R and the 03D." The MY4-AD retails for \$249. ■

Phil De Lancie is new technologies editor for Mix.

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—FROM PAGE 114, PRO TOOLS | 24 MIX

case on PC. All of Digidesign's plug-ins are working, as are the Focusrite plug-ins. This covers a lot of ground, but you'll definitely be missing some big ones—specifically, Waves and TC Works. That means no Renaissance Compressor, no DeEsser, no MegaVerb, no TC Chorus—you get the picture. TC and Waves both said they hoped to have Windows NT-compatible plug-ins later this year.

Finally, DSP allocation has been tremendously improved, thanks primarily to the new 56301 Motorola chips. With these chips, and some slick programming on Digidesign's part, plug-ins (or anything else that requires DSP) are now dynamically allocated. This process happens automatically in the background. You're only aware of it when the system needs to reshuffle its DSP in order to find space. If all your DSP chips are partially filled up but usage can be consolidated onto fewer chips, dynamic allocation will get the job done. This is an excellent new feature because it squeezes a lot more power out of the chips you have available; translated, that means plug-in heaven.

ON THE PRO TOOLS TIP

One of the best things about MIXplus is that it needs only two PCI slots to do the job of what previously took nine PCI slots (and cost around \$26,000—and that's not including the interfaces) to do. Add the SCSI accelerator card and you only need three open slots for an incredibly powerful system. Thanks to Digidesign, this shortcoming of Apple's new models (the fact that they have only three slots) is not as big of a problem (though I still feel like Apple has forgotten about pro users needing more than three slots). However, unless you were lucky enough to snag an old 9600 (with six slots), you're still going to run out of space. Three slots give you no room to grow, and trust me, you will eventually want to get more MIX Farm cards. I did a 24-track mix and used up every DSP chip on both boards (I think I had 19% available DSP left on one chip). I got the job done, it sounded great and was a blast to work with, but I wanted more DSP. Unfortunately, even if I had the money to go out and buy another card, there was no way I was going to get it into my G3, short of buying a PCI expansion chassis.

This ever-present PCI slot problem with Apple machines brings to mind an

interesting point: Since it's much easier to get four, five and even six-slot machines in the PC world, a PC running Pro Tools has the potential to be much more powerful and less expensive than a Mac (think about that, Apple). As soon as more plug-ins are available for the NT platform, I'll probably dedicate my PC to Pro Tools since there's plenty of room, with five slots, for a couple more MIX Farm cards. Making the switch to PC even more viable is the fact that Pro Tools files are now interchangeable. Hard though it may be to believe, I can take an HD that has Pro Tools sessions, originally done on a Mac, plug it into my PC and work right on that drive. The only catch is you'll need a PC utility called MacOpener. (A demo version comes bundled with Pro Tools for NT.) MacOpener lets you work directly on Macintosh formatted drives from your PC. If you save all your sessions as Mac files you can even port them back to the Mac. Is that cool, or what?

Pro Tools is incredible; I love it, and I love the power it affords me. The only criticism I have is the fact that its mixer interface (the Mix window) doesn't actually work like a traditional multitrack console. This has nothing to do with a need for real world control surfaces (there's ProControl, and I swear by Mackie's HUI), but with Digidesign's claim that Pro Tools is a 32-bus system. There are five inserts and five sends, and they work the way you'd expect, but the buses are another story. On a traditional pro board you'd expect each channel strip to have a multitrack bus strip along with a master L/R output assign key. This lets you quickly assign a channel to a bus for additional processing or "going to tape" with the option of having the signal in or out of the master L/R mix. This is not the way Pro Tools is set up. In the most basic sense (i.e., if you're stuck thinking traditionally), Pro Tools has only one bus assign per channel strip. I'm speaking of the solitary main output assign that can be routed to any output or aux return—at its core, it's a bus assign key.

However, Pro Tools is not a hard-wired traditional console, so you have to stop thinking in these terms and visualize the flexible routing that software allows us. First of all, each send on a channel can be routed to any bus (or output). Second, any aux return can be fed by any bus. (The amount of aux returns are only limited by your CPU.) Third, an aux return can be routed via its sends (or its output assign key) anywhere you'd like (outputs, buses, etc.).

Having said all this, I'll get back to my point: Digidesign's claim that Pro Tools has 32 buses is not exactly accurate. A more accurate way of putting it is Pro Tools has 32 virtual buses with up to six (stereo or mono) per channel at once feeding as many aux returns as you'd like (there's a brain twister for you). It's not Digidesign trying to rewrite traditional console ergonomics but an issue of DSP. Since every bus uses up DSP, having a 32-track bus assign open on every channel, all the time (like on a traditional console), is an incredibly inefficient use of DSP. When computers have DSP to waste then this scenario becomes a viable option. Until then, use your DSP wisely virtual world. Okay, enough said.

For those of you using a software audio/sequencer program, here's a quick report. MOTU says Performer 2.5 is up and running with MIX. Steinberg claims Cubase VST 4.1 will be working with MIX and should be shipping by the time you read this article; and Opcode's Studio Vision Pro (V.4.1 and later) is compatible. Emagic says its software has been working with MIX for some time now, so the current version, Logic 4.0, is definitely happening. Pro Tools PowerMix (just the Pro Tools software without the MIX hardware and no TDM plug-in capabilities) is working great on Mac. There is no PowerMix available for NT. (If you were hoping to ease into Pro Tools on your PC by just starting with the software, sorry, you're out of luck.)

Pro Tools|24 MIXplus is nothing short of amazing. Honestly, it blew me away; the stuff Digidesign has done with just two PCI slots is incredible. Hook Pro Tools up to a control surface and you've got a screaming machine with power rivaling systems costing hundreds of thousands of dollars more. Consider that an entire MIXplus system (including a computer, an I/O box and Mackie's HUI) comes out to just under 20 grand, throw in all the excellent free plug-ins, and the time has never been better to get into Pro Tools. In short, Digidesign has a real hit on its hands.

Digidesign, a division of Avid Technology Inc., 3401-A Hillview Ave., Palo Alto, CA 94304; 650/842-7900; fax 650/842-7999. Web site: www.digidesign.com. ■

Erik Hawkins is a musician/producer working in Los Angeles County and the San Francisco Bay Area. You can visit his fledgling indie label online at www.muzicali.com.

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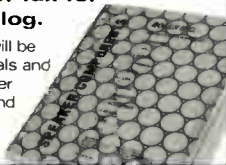


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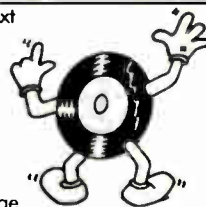
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Applicants must have a Bachelor's degree in audio, music, or related field and minimum of three years experience working in an audio/technical production environment. Working knowledge of both Macintosh and PC operating systems and various applications. A basic understanding of a wide variety of audio/music technology hardware and software systems is essential. Audio & computer system troubleshooting, diagnosis and small-scale repair knowledge/experience is required. Experience in scheduling, accounting, technical work in an academic context and/or teaching experience are desirable, but not required. An attractive package of benefits including free tuition for the employee and immediate dependents is offered by the college.

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This position is open until filled. Review of resumes will begin June 15, 1999. Resume with cover letter, and the names and telephone numbers of three professional references (e-mail for references if available) may be faxed or mailed to:

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Make sample-accurate transfers with ADATS. Edit tracks with sample-accuracy.

Super-easy setup with our step-by-step Setup Wizard

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Keyboard Magazine says it best: "Is the 2408 the audio interface system we've all been waiting for?...the answer is yes."

Price, price and price Did we say price?

A core 2408 system with 24 channels of input/output is only \$995. Add a 1224 24-bit analog and AES/EBU expander for only \$995. Or mix and match them any way you like. At these prices, you can own just the right combination.



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Steinberg

Producer Pac / 24

Want the world's hottest PC software for recording, producing, mixing, and mastering your music in stunning 24-bit/96kHz resolution? Steinberg's Producer Pac / 24 brings together all of these top programs at a tremendous discount—over 50% off! And if you purchase Producer Pac / 24 from Sweetwater by September 1, 1999, you get the Magneto analog tape emulator plug-in at no extra charge—an additional value of \$199, available only from Sweetwater Sound!



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PLUG-IN

Steinberg



FreeFilter

Spectral Design's FreeFilter boasts 30 (that's thirty!) bands of graphic EQ in either linear or logarithmic modes. The really cool thing about FreeFilter is that it can actually lift the EQ characteristics from one piece of audio, and apply it to another! Don't try that trick with any hardware EQ!

CUBASE VST / 24



Cubase VST / 24

VST is the hub of your MIDI/Audio world. Often copied but never duplicated, Cubase defines graphic arranging and real-time MIDI effects. VST / 24 is the latest advancement with full 24-bit capability and powerful VST audio processing—another Steinberg-created standard!



WaveLab

Far more than a stereo audio editor, WaveLab's extraordinary accuracy and unmatched plug-in support give you tremendous mastering capabilities. One of our clients traded in their \$70,000, dedicated mastering "solution" in favor of WaveLab. Why? The sound is silky smooth with up to 64-bit internal processing (that's 1024 times the resolution of a 16-bit editor), operation is lightning-fast, extensive plug-in support gives it more processing power, and it runs on the same PC as your sequencer. WaveLab also features advanced file analysis, an extensive audio database, and the ability to burn Red Book audio CDs that are ready for duplication.



Wave's Renaissance Compressor is one of the most highly regarded audio processors ever. Use it on individual tracks or your entire mix—wherever you want amazing sound.

CIRCLE #153 ON PRODUCT INFO CARD



Turn the page to discover more wonderful Windows opportunities!

The undisputed price/performance leader for multiple output Windows audio.

Why is the 2408 such a huge, world-wide hit? Its 24 channels of simultaneous input and output for under \$1,000 is simply unmatched by any other device. You get analog I/O, digital I/O and tons of advanced features.

In Glyph We Trust!

We here at Sweetwater Sound can honestly say that we have enjoyed unrivaled performance from Glyph and give them our highest recommendation.



Put your drives and DigDAT™ backup in the same bay with Glyph's road-tested rackmounts.

It's essential to understand that not all hard drives are created equal! For the maximum number of playback tracks and plug-ins with error-free operation, you need a serious drive that has been specifically tested for digital audio with today's advanced audio software. While that "budget" drive in the PC catalog may be fine for word processing, your music demands bulletproof performance. You'd never trust the cheapest no-name tapes. A premium quality hard drive is just as important. Glyph consistently combines top components, heavyweight construction, comprehensive testing, and stellar tech support to create the most trustworthy storage devices you can own. Plus, they are available in road-worthy rackmounts—perfect for your pro audio rig!

Want Fast, Painless Backup?

Nowhere is reliable backup more essential than with your original music. If you lose your files, they're gone forever! Don't like the hassles of backing up? That's why Glyph's DigDAT is such a fundamental foundation for your rig. Easily backup large sessions onto a single DAT tape. Confidently archive and retrieve your tracks quickly, without headaches or days of down time. Backup may not be "sexy," but nothing will win you more creative time than avoiding even a single devastating crash. Adding a Glyph DigDAT is perhaps the single best favor you can do for your music!

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- Step 4:** Complete with a robust Glyph hard drive, DAT backup, and CD-Burner.
- Step 5:** Serve hot and enjoy astonishing power!



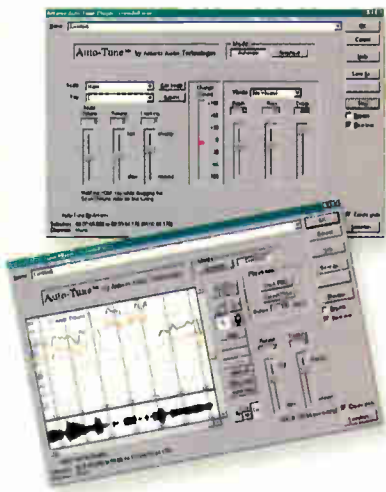
We do Windows ...together



Auto-Tune Pitch Corrector—Now for Windows!

When Auto-Tune first hit the market as a TDM plug-in just a short while ago, the response was truly amazing. Delivering intelligent intonation correction without robotic side-effects, Auto-Tune was so good, folks were purchasing \$8,000 systems just to run it! Now the full version of Auto-Tune is available as a DirectX plug-in to use with your Windows audio rig. Correct intonation problems in vocals or solo instruments in realtime, without distortion or artifacts, while preserving all of the expressive nuances of the original performance. Auto-Tune gives you both Automatic and Graphic Modes to fine-tune your fine-tuning! And the pros all love Auto-Tune because the only sonic difference between what goes in and what comes out is the intonation.

"Holy Grail of recording"—Recording Magazine



Sonic Foundry Mastering House

While Mastering House is an incredible collection of professional mastering tools, that's just the beginning. It also brings you brilliant creative capabilities you can use at every stage of the recording process. This new bundle saves you a bundle as well! Let's step inside:

Sound Forge 4.5—Your host? The award-winning Sound Forge Audio Editor of course! It slices! It dices! It sets the standard for editing Windows audio. Great with the 2408 or any Windows soundcard. MC Sound Forge also serves up steaming loops and DSP effects.

CD Architect—Who's spinning the tunes? Why it's CD Architect! Design and build your own audio CDs with speed and precision. You'll rave about the drag-and-drop playlists. Exacting control of crossfades, track markers, EQ, compression, and support for both SCSI and ATAPI/IDE burners help you perfect your master CD.

XFX 1 & 2—Take your sound out of bounds with the XFX 1 & 2 collections of amazing audio plug-ins. Noise Gate, Multi-band Dynamics, Compression/Expansion, EQ, Reverb, Time Compression, Pitch Shift and Chorus effects — whew! From tracking to mixing to mastering, you'll use these processors day in and day out.

More Sonic Foundry Software & Plug-ins

ACID—"The coolest, easiest way to remix," proclaims acclaimed remixer Doug Beck. "True innovation," says Craig Anderton in EQ magazine. Feeling the fervor even further is Jeff Mac of Audio Media magazine who writes, "ACID is an absolute godsend." But Jeff, how do you really feel? Electronic Musician magazine took the easy way out and simply awarded it a 1999 Editor's Choice Award. No matter how you try to describe it, ACID burns through your preconceptions about creating music with a battery of realtime tools. Seamlessly mix & match tempos and pitch from drastically different loops without dropping a beat!

Noise Reduction—Got 60-cycle nasties, annoying clicks & pops, or horrible hums & rumbles? You could spend the rest of your natural life redrawing waveforms by hand. Or you could simply reach for Noise Reduction. It works wonders restoring "damaged" audio. About the only thing Noise Reduction can't quiet down is our enthusiasm for it!

Acoustic Mirror—Tired of the same old Reverb? Acoustic Mirror adds the acoustical coloration of real environments and sound-altering devices to your recordings with uncanny realism and stereo imaging. Simulate everything from large concert halls to vintage tube mics, or generate new effects. It includes an extensive library of high-quality acoustics "signatures" from a wide variety of environments.





24 I/O, ADAT, TDM, S/PDIF, Word Clock and more—under \$1,200! Sweetwater Sound has installed more 2408 systems than any other company in the world. Want to get the most out of your 2408? Take advantage of our experience with configuring and operating this amazing recorder for maximum performance, whatever software you choose.



Unity & Retro—Superb Sampler & Software Synth!

BitHeadz is storming the sound module world with unrivaled software sampling and synthesis. Using the power of your Windows computer, Unity and Retro simply blow away hardware approaches when it comes to both features and price performance. These are some of the most exciting products we've encountered in a long time. And with the multiple high quality outputs of the MOTU 2408, you get everything you need to make Unity and Retro really sing! Both are ASIO and Direct Sound compatible.

Unity—The power and convenience of a full screen software environment combined with awesome 24-bit, phase-locked stereo sampling! Imports 16 of 24-bit .WAV, .AIF, Akai S-100, CD Audio, SoundForge 2.0, Sound Designer II, Sample Cell III and more. Cross-switch up to 128 samples per note.

Simultaneously loads from disk while playing. Built-in digital audio editor. Includes over 250MB of sounds with instruments, loops & GM banks.

Retro—Transform your computer into perhaps the most powerful analog synthesizer ever devised. You get three oscillators per voice (plus LFOs) with any of 9 continuously variable waveforms. That's simply unrivaled flexibility! Use the 2 filters with 13 filter types in series or parallel. Includes Frequency and Cutoff Poly Mod. modulation. Enjoy realtime control of every parameter simultaneously with MIDI. You even get 1,100 classic analog packages to get you going right away.



Native Power Packs

Waves is the most respected name in audio processing plug-ins. Once available only to the fortunate few, they've brought their delicious line of processors to Windows native audio in

two great Native Power Pack bundles. Get both for a comprehensive collection of extreme fidelity software processors. Compatible with all the top Windows audio programs including Cubase VST, Sound Forge and WaveLab.



Native Power Pack I—Legendary Waves processors:

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- C1—Compressor/Gate—frequency specific compression!
- S1—Stereo Imager—for "safe" stereo enhancement!
- L1—Ultra maximizer—industry standard mastering limiter!

Native Power Pack II—acclaimed Renaissance plug-ins:

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CIRCLE #154 ON PRODUCT INFO CARD
World Radio History

YAMAHA 02R VERSION 2

SHORTCUTS FOR FAST AND FURIOUS MIXDOWNS

Of all the hundreds of audio products I've had the pleasure to review and use over the years, none has excited me as much as the Yamaha 02R. It is a tribute to this revolutionary digital mixer that, with its V.2 software upgrade, it remains a heavyweight contender in the midsized console market fully three years after its introduction. Here are some of my favorite techniques and shortcuts for lickety-split mixing:

After you've captured timecode locations for channel on/off events on-the-fly in the Automix Event Edit window, select the channel and set the status (on or off) manually on the mixer's control surface (not in the window) before inserting each event. This will automatically insert the proper channel and status at the captured locations, foregoing the need to tweak the data in the channel and on/off fields of the edit list.

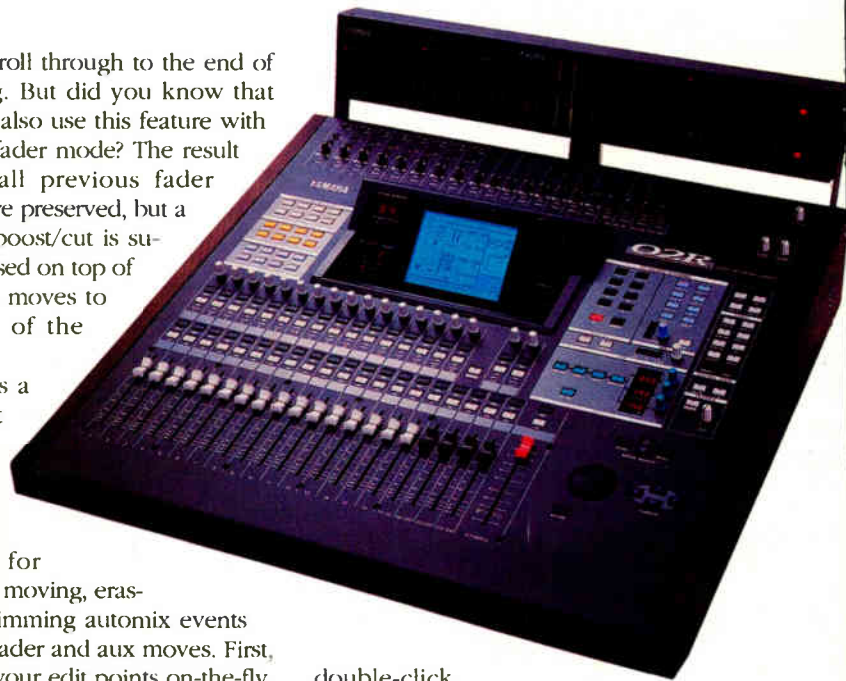
You can edit any captured timecode address in the Event Edit window via cursor and data wheel, and then click the screen's Locate button to have the edit list "snap" to that location. With the fader parameter selected, this can be used to find start and end points quickly for a long master fader end-fade that would otherwise entail endless scrolling. Check the Selected Channel box to weed out data for all other channels from the list, then select the master fader channel on the console worksurface and locate to an address you know is way past the end of the mix. The list will snap to the very last fader move (= -∞). Similarly, edit the captured address to 00:00:00.00 to find the start time of a fade-up.

You probably know that you can use the End option to have the last fader position (i.e., before you hit Stop) overwrite all previous fader moves to the end of the current automix. This foregoes the

need to roll through to the end of the song. But did you know that you can also use this feature with relative fader mode? The result is that all previous fader moves are preserved, but a relative boost/cut is superimposed on top of all those moves to the end of the mix.

Here's a shortcut for entering in and out times for copying, moving, erasing or trimming automix events such as fader and aux moves. First, capture your edit points on-the-fly, say into memory locations 1 and 2. (Tip: Check the Auto Inc TC Capture option in the Preferences 2 window beforehand to increment your capture points to consecutive memory locations automatically.) Scroll the Capture Memory box back to Memory 1 and go to the Event Copy screen (Automix page 4). Select the channel you wish to edit and double-click the In Time to set it to Capture Memory 1. The Capture Memory will increment in the background. Double-click in the hours field of the Out Time display to set the Out Time to Capture Memory 2. You can also click Enter once on the In and Out Times to capture timecode points on-the-fly.

Where a gate won't do the trick, the fader Trim Edit feature can attenuate little noises between voice-over lines while preserving some background ambience. Capture the start and end points of the gap between two lines, adjusting for reaction time. Enter these times in the In Time and Out Time fields on the Event Copy page, using the



double-click shortcut mentioned earlier. Then set the trim value to an appropriate setting (e.g., 10 dB). I like to set the Trim Edit In value to around 0.2 second for a smooth ride down to silence, and Trim Edit Out for 0 or 0.1 second for a quick recovery just before the attack of the next phrase.

Double-click the Digital I/O button in the Display Access section of the console to go directly to page 1 of its 5-page menu. This is a lightning-fast way to get to a system overview of digital sync (sample-lock) status when ticks and pops raise eyebrows. Double-clicking the Setup button gets you instantly to its first page as well, where you can quickly check solo status (Recording or Mixdown) before you inadvertently go trashing someone's cue mix! Okay, that's not a mixdown tip, but it's a tip to keep your clients' business until mixdown! ■

Michael Cooper is the owner of Michael Cooper Recording, located outside the small resort town of Sisters at the base of the Oregon Cascades.

BY MICHAEL COOPER

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"Sounds as good as an expensive analog console." We hear it over and over. From seasoned recording veterans. From new, emerging talent. Though musically diverse, the folks in this ad all have one thing in common: highly-tuned BS filters. If the Digital 8-Bus didn't deliver, they wouldn't be using it. Call or e-mail for a FREE interactive demo CD-ROM and the name of your nearest Mackie Digital Systems dealer. Get an in-depth D8B demo and prove it to yourself: this is the digital console that doesn't sound digital.



LEE ROY PARNELL

Each stage of Lee Roy Parnell's upcoming Arista album is modemed to producer Ed Cherney* in LA, and Arista-Nashville prez Tim Dubois. Cherney: "Lee Roy's D8B-cut overdubs (guitars and vocals) sounded better than the stuff he cut on his old analog rig." Lee Roy: "The Digital 8-Bus gives you back exactly the sound you give it — just what a console should do." *Ed liked the console enough to use a D8B to mix the Stones a month later.



MAD JEF

Mad Jef's platinum credits include engineering and programming for the likes of Michael Jackson, Janet Jackson, Jam & Lewis, and Grammy winners Sounds of Blackness. Jef initially didn't expect much from the Digital 8-Bus' processing. His opinion after several mixes? "The onboard digital effects are so good I'm getting rid of a bunch of out-board gear." We couldn't have said it better ourselves.



POKE

Poke, Producer and Executive V.P., Black Music, Columbia Records (above), and co-creator Tone's credits include "Allure," Will Smith's "Big Willie Style" album, and NAS' "It Was Written." Why'd they switch to Mackie Digital? "People compliment the sound of tunes they know I produced by asking which studio I used. I like watching their reaction when I answer, 'My piece with D8B's'" says Poke.



WALTER AFANASIEFF

He is responsible for a hundred or so million album sales, and most of his work has been done on gazillion-dollar mega-consoles. But when pop producer Walter Afanasieff was asked why he chose the D8B as his new console he stated, "The transparency of the D8B is second to none — a great sounding console."



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The All-New JBL LSR Monitors are, quite literally, just that. Highlighted by a long list of performance-tailored components and customer-inspired features, they're like no other systems on the market today. The entire line, including the LSR32 3-way, 28P 2-way and 12P Subwoofer, is a technical triumph; resulting in new standards and performance levels for a rapidly emerging multi-channel recording industry.

Performance-Tailored Components

Revolutionary transducer designs, optimized network topologies and innovative materials are some of the reasons why the LSR line is being hailed as 'the world's most advanced monitor'. JBL's all-new *Differential Drive*® woofer permanently dispels the notion that better linearity, higher power handling and greater dynamic accuracy are somehow an unobtainable, evil triangle. *Dynamic braking* produces truly accurate bass at higher SPLs with maximum reliability. Composite materials, including *Carbon Fiber* in the woofer as well as *Titanium* and *Kevlar*® in the high and mid frequency components, insures performance that is always optimally maintained.

Not Just A Better Spec... A Better Monitoring System

While all companies boast about their specifications, JBL went one step further. To guarantee that every component of the LSR family worked together for optimal performance, LSR development employed JBL's unique 'system-engineered' design philosophy. Simply put: the entire line was researched and refined as one, with an overall performance goal in sight. What this means to you is a monitor and subwoofer that work together as a system; delivering stunningly uniform and accurate performance in both stereo and multi-channel applications.



LSR 32

12" 3-way mid-field monitor with rotatable Mid/High Elements.



LSR 28P

8" 2-way close field monitor with bi-amplification and active filtering.



LSR 12P

12" Active Subwoofer with Bass Management System.

Carbon Fiber Composite Cone

Dual Top Plate

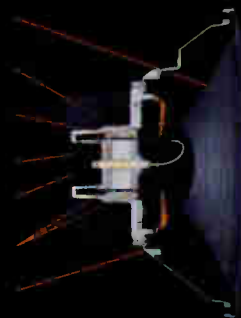
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Dual Drive Coils

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To find out more about the revolutionary LSR Monitors, visit JBL Professional at www.jblpro.com