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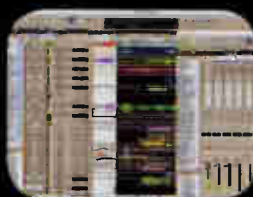
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MIX®

PROFESSIONAL AUDIO AND MUSIC PRODUCTION
September 2005, VOLUME 29, NUMBER 10

features

On the Cover: The Alfred Hitchcock Theater on the Universal Studios lot was designed by Jeff Cooper and last year installed a 320-input Harrison MPC4-D console. **Photo:** Gary Krueger. **Inset:** Billy Corgan. **Inset Photo:** Steve Jennings.

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DPA
MICROPHONES

contents

The New Audio Pioneers

The other day, I heard a radio ad about Wi-Fi G4 iBooks with Tiger and BlueTooth, and it occurred to me that very little in the commercial would have made any sense five—or even three—years ago. These days, technology changes at a startling pace. Fortunately, for us in audio, our rate of change is somewhat less breathtaking. The mics we purchased 30 years ago are still compatible with the latest consoles and preamps, though the market for vintage software is pretty limited.

Even with its 125-year tenure, audio history can be fleeting, and breakthroughs from a few years ago—whether PCM-1610s or MDMs—are soon forgotten. To recognize technologies that brought us here, the Mix Foundation began a TECnology Hall of Fame last year with entries ranging from the Edison cylinder to early digital systems. This year, the tradition continues with more innovations profiled on page 74. Some were individuals, others group efforts, but all share a pioneering spirit and a zeal for excellence.

One common thread is that the ideas were ahead of their time. When Harry Olson and Les Anderson developed the RCA Model 44 ribbon mic in 1931, they had no idea that 75 years later, those mics would still be in use. A similar case can be made for Gene Shank and Ollie Summerland's Pultec EQP-1 equalizer in 1951. Sometimes, the product fades but the concept lives on. Nobody remembers ITI gear, but George Massenburg's 1969 design for that first parametric EQ forever altered pro audio.

A single inventor or innovation can even move the course of music. Bob Moog's Minimoog (1970) brought synthesis into mainstream studio sessions; Roger Linn's drum machines ushered in a new era of music production; and Dave Smith's (of Sequential Circuits) work in developing the MIDI spec changed *everything*. Speaking of standards, Georg Neumann's 1966 creation of phantom power made an engineer's life easier.

Technology often exhibits the domino effect—one idea leads to another. In 1913, Edwin Armstrong developed amplifier and oscillator circuits for Lee De Forest's triode tube, and his later superheterodyne circuits took radio to new heights. With the arrival of improved mics, live radio outpaced the quality of 78 records that were acoustically recorded using horns. In 1925, the electrical recording process (records cut using mics and amps to drive cutter heads) doubled a disc's frequency response and marked the birth of modern recording. The technology was adapted to talking films, where a need for high-SPL theater playback led to the development of P.A. systems and the creation of another industry.

Dolby Stereo optical theater sound was a 1976 revolution that continues to this day. Not only did it bring improved multichannel audio to every local bijou, but within a few years, virtually all movies were released in Dolby Stereo, creating consumer demand for better sound and a legacy of surround releases that fueled the home theater movement.

Who are the next audio pioneers? A good place to start looking would be at next month's AES show in New York, where on the show floor, in the papers presentations or in after-hours conversations at the hotel bar, innovations abound.

See you there!

George Petersen
Editorial Director

"**I**ts high-end audio quality, flexible routing and processing capabilities, advanced performance features, sophisticated editing tools, powerful search functions, and streamlined user interface make it once again the *indisputable gold standard* in software samplers."

ELECTRONIC MUSICIAN, MAY 2005

GIGASTUDIO 3.0

World Radio History

Letters to Mix

TRIBUTE TO CHICAGO INTERNS

I would like to thank *Mix* magazine for the article entitled "CRAS Interns, Remembered" ["Current," July 2005]. Your compassion was greatly appreciated. Justin [McDonald] was a close friend during school. We met again in Chicago, and he introduced me to Chris [Ross] and Tanner [Osborn]. I had been teaching Chris electronics; he was a bright mind, dedicated and eager to learn. Tanner taught me the ropes of hip hop production.

These are the type of people that grace the pages of your magazine. They all had bright futures ahead of them, and their loss was an unimaginable tragedy.

Kevin Hooper
CRAS graduate/former RaxTrax intern

FUTURE TALENT COMES FROM HOME

Your contributors to the May issue may not agree on what quality is, but they seem to agree wholeheartedly that the rise of the home studio is one of "so many problems today." The issue is rife with disparaging comments on the subject and collectively serves to paint a picture of the home studio as a roomful of boneheads with an Mbox thinking that they are Steve Albini whilst plotting the demise of the commercial recording industry.

One article even goes so far as to blame home studios for the demise in pro audio sales—absurd given the rapid growth in "prosumer" marketshare! Bill Schnee makes an important distinction between professional audio capture and professional audio engineering, but the simple fact is that quality has never been better or more available to budding recording enthusiasts and independent artists. After a year of recording in Pro Tools LE, I do not consider myself a professional by any stretch of the imagination, but recordings I have done in my bedroom far surpass material I recorded in a professional studio six years ago.

Chris Grigsby
Denver

Chris, you raise an excellent point. Ever since the first affordable digital recorders came out (even before the ADAT, going back to Sony's then-revolutionary PCM-F1 in 1982), price was no longer an issue in terms of quality. In fact, many pro projects were mixed to DAT—a consumer format. Perhaps aside from access to some wonderful acoustic spaces that many pro studios offer, in many cases, the quality of the gear is on an even par.

I have always promoted the concept that great recordings come from a great performance and great material, rather than a hugely expensive console. In fact, with the right artist/material, someone with a Rhodes piano and a couple of mics could make a more emotional, awesome recording than somebody with 10,000 tracks.

—*George Petersen*

MODERN-DAY AMADEUS

Thanks for the great articles in the March 2005 of *Mix* ["Elephant Symphony Now Open," "Current"] and "Two Questions, One Answer" ["The Fast Lane"] "The Fast Lane" article clearly laid out, for the first time that I have seen, where we are headed with music and recording technology.

My 13-year-old son, Jamison, has been a musician since age six and is an accomplished guitarist. Both son and daughter [Amanda] have recorded at Elephant Symphony Studios in North Hollywood and have created some beautiful music there. Jamison finished a studio piece about six months ago and mentioned that he had another song to do but needed an orchestra. I poked around on my computer and found Cakewalk Music Creator and set him up on that. He cranked out several pieces using the scoring program and finally hit the wall on the quality of the sounds. After searching the Net, and talking with friends, musicians and composers, I bought him Garritan Personal Orchestra. He recently finished a seven-minute orchestral piece and has started another one. Where else could a [young] composer command a full orchestra?

We love the sounds the program makes and will be looking at Finale 2006 when it is released. Right now, Jamison is making fantastic music—with some technical limits—using a program that was inexpensive. It has given him a strong start and has put him on a fantastic learning curve in dealing with an orchestra.

Jorj Baker
IT tech support specialist

CATCH UP OR GET OUT

This is in response to "An Open Letter to the Head Apple?" article by Paul D. Lehrman ["In-

sider Audio," April 2005]. I find it hilarious to find that musician/engineer/producers who utilize computers, irregardless of platform, on a daily basis spend hours upon hours learning their craft and learning their software, yet spend very little time actually learning about the operating system behind the program.

It is one thing to complain about music software that doesn't do what the company says it will, and God knows every single DAW application is guilty of that, but not taking the time to understand your operating system properly is simply a recipe for disaster.

I cannot understand people who complain about losing files when they don't understand the term "backup." Simply having a single copy of "all your files for the last 20 years" on a hard drive that you didn't even bother testing before you erased your main drive is *stupid*. If you can't afford to lose your data, then learn how to manage it or buy yourself an analog tape machine and some hardware samplers and don't ever use your computer for music again.

Invest the time to learn about the operating system you use: how it works, what to do when things go wrong and how to safely backup, transfer and restore data. Operating systems are very complex these days, and they will continue to evolve and become more complex. It is no longer excusable for people to blame someone else because they set up their machine to auto-update the OS, only to find half of their applications don't work anymore.

Please set up a test box that you can play with before deploying any major upgrades into your daily work machines! We all spend thousands of dollars on outboard gear; spend a few more dollars to assist in limiting studio downtime due to installations gone wrong.

As a technical manager, I support more than 50 Mac machines and a number of servers running on OS X. I have, over the years, supported many Windows boxes and I can safely say that —without wanting to start an OS war here—the Mac OS is streets ahead of Windows in power, flexibility and management.

That said, no OS is perfect and Paul does make some useful suggestions to Apple. But as no OS will *ever* be perfect, take the time to learn how to use your computer, not just your music program.

Cameron Mitchell

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SHURE SUFFERS TRAGIC LOSS
EMPLOYEES KILLED IN CAR ACCIDENT

Michael Dahlquist

On July 14, 2005, three Shure employees were killed while driving during a lunch break in a Chicago suburb. According to Chicago authorities, a woman rammed her 2000 Ford Mustang into a car, killing Michael Dahlquist, 39, John Glick, 35, and Douglas Meis, 29.

"This is a terrible loss for all of us," said Sandy LaMantia, president and CEO of Shure. "These young men were all very special people who touched so many lives. This has had a profound impact on many of us here at Shure and to many thousands of people who were fans of their music. Michael, John and Doug were not just co-workers, they were friends, and we will miss them."

A private memorial service was held for all Shure associates at the company's corporate headquarters.

Douglas Meis

John Glick

INDUSTRY EVENT
YAMAHA, ZENPH HOST A MASTERS 'CONCERT'

Legendary pianists Alfred Cortot, Glenn Gould and Art Tatum came together for an extremely rare show earlier this summer, delivering their first live New York City concerts in decades to a select audience. The fact that all three of these piano masters are long deceased meant that they needed some help to accomplish this feat, and they got it from Zenph Studios (www.zenphstudios.com), an ambitious software-based initiative.

The "concert" (held at Yamaha's Artist Relations facility in New York City) was a powerful demonstration of the studio's technology. Using a Yamaha Disklavier Pro to reproduce piano, Zenph's John Q. Walker, president, and Anatoly Larkin, performance analyst, showed the potential of their system. First, an archived solo piano recording by Cortot, a 1926 performance of Chopin's "Prelude," was played in its original mono format, complete with an extremely nasty signal-to-noise ratio and other artifacts. Next came pristine, live playback of the same performance on the Disklavier Pro, featuring all of the subtleties and nuances of Cortot's original playing from 79 years ago.

It was thrilling to hear and see as the keys and pedals moved as if guided by Cortot. It was no less dramatic to experience it when applied to a 1955 recording of Gould's "Bach Goldberg Variations" and a recording of Tatum at a party in 1956.

The Zenph process uses software and human analysis to determine the precise keystrokes, pedal movement and timing of a performance, and converts it to high-definition MIDI data for an exact replica of the original performance. Thousands of old recordings made by master pianists can now be re-created on a Disklavier Pro piano in the best possible studio settings, allowing Cortot, Gould, Tatum and many more to be recorded via DSD for SACD or 5.1/7.1 release. The potential applications for instruction and audio/MIDI licensing and implementation appear to be wide-ranging.

—David Weiss

RESUME BUILDING

Hugh Masekela, flanked by Bernie Grundman (L) and Stewart Levine

Producer Stewart Levine and mastering engineer Bernie Grundman have formed Straight Ahead Records (323/465-6264), which plans to offer audiophile-quality recordings using the co-owners' areas of expertise. According to Grundman, "Our signal path uses a unique shared electronic circuitry that enables us to use multiple microphones, but with less overall electronics. The signal goes direct to separate computers for high-resolution and standard CD formats, and to our analog tape machines for making vinyl."

The first album offered by the new label is Hugh Masekela's *Almost Like Being in Jazz*, which was recorded at Grundman's mastering studios (Hollywood). An accompanying live album (produced by Levine) was recorded to 2-track at 24-bit/96k. The album will be available as a two-LP set and as a Dual Disc containing CD-quality audio on one side and high-res 24/96 quality on the flip side.

John Q. Walker, president of Zenph

IN REMEMBERANCE

ROY SEGAL, 1920-2005

Former head of Fantasy Studios and the Saul Zaentz Film Center in Berkeley, Calif., Roy Segal passed away on July 15, 2005, from complications of Lewy Body Dementia. Segal was involved in many aspects of our industry—from engineering hit records to overseeing construction of world-class facilities.

Segal got his start in 1949 as a member of Local 1212 IBEW, installing telecom systems for the United Nations in New York (including running the P.A. in the delegates' conference rooms). At night, he learned remote recording (which would help in Academy Awards telecasts later on) at clubs and stage shows. In 1958, he joined Columbia Records, working his way up to engineer in the '60s and sitting behind the desk on projects for Big Brother & The Holding Company, Sly & The Family Stone, Laura Nyro and many others. In 1970, he moved to San Francisco, where he helped Columbia head Clive Davis open a studio (which became the legendary Automatt); later came engineering credits for Poco, Redbone, Dr. Hook and the Grateful Dead.

When the famed studio closed in 1977, Segal took time to "go independent," but a fortuitous phone call from friend Bill Belmont in 1980 led Segal to managing Fantasy Studios, where he helped equip Studio D (Neve 8108, Trident Series 80). Then, he upgraded the acoustics in A, B and C. Two years later, Segal was running the company's film division and commenced Act III. In his first two years at this position, the Film Center walked home with two Best Sound Oscars: one for *The Right Stuff* (1983) and the other for *Amadeus* (1984).

In 2000, Segal retired and moved to Palm Desert, Calif., with his wife.

KELLY "DRED" LIEBELT, 1977-2005

Atlanta-based engineer/mixer Kelly "Dred" Liebelt passed away on June 1, 2005, of a heart attack. Liebelt was the chief engineer at ZAC Digital (Atlanta). Despite having only two years under his belt, Liebelt gained accolades in the local community, as well as a Grammy nomination for engineering on Usher's multi-Platinum *Confessions*. Affectionately known as "Dred," Liebelt was mixing the debut release for rapper Sun N.Y. and had completed mixing the theme music for Bobby Brown's reality TV show, *Being Bobby Brown*. Producer Dave Fortman said, "Dred was definitely one of the best 'listening' assistants I've ever worked with." Owner/studio manager Jim Zumpano said, "Dred could work with any of my clients, from rock to rap—he really had an uncanny ability to just see the music."

BRIAN D. INGOLDSBY, 1939-2005

Forty-year recording industry vet Brian D. Ingoldsby passed away in January 2005 from complications following a liver transplant. While at MCA, Ingoldsby received multiple Gold and Platinum records from his work with Elton John, Olivia Newton-John, Mick Jagger and Frank Zappa, to name a few. Ingoldsby then went to work at ABC, serving as the company's president of the recording division. Ingoldsby also established the Sound Master Recording School-Audio/Video Institute in 1972 to train students in the science and art of audio engineering.

DONALD J. PLUNKETT, 1924-2005

Donald J. Plunkett—who helped form the Audio Engineering Society in 1948 and continued with the organization as an AES charter member, executive director for 20 years and past president—passed away in New York on July 15. Plunkett had worked at NBC, Capitol Records, Fairchild Recording Equipment and with other pro audio pioneers such as Emory Cook.

Plunkett received numerous AES honors throughout his more than 50 years of active service, including Fellowship and Honorary Awards and the Distinguished Service Medal. He is survived by his wife, Mary Elizabeth; his son, Christopher; his daughters, Hilary Jones, Libby Mastoloni and Emily Fleischer; and four grandchildren. It has been requested that in lieu of flowers, donations be made to the charity of your choice.

QUAD STUDIOS PARTIALLY SOLD
TAINTED BLUE PRODUCTIONS TAKES ITS PLACE

The penthouse of Quad Studios, one of New York City's landmark recording facilities, has been purchased by producer/songwriter Andrew Koss and partner Patrick Shaw, who are launching the space as Tainted Blue Productions (www.taintedblue.com). Tainted Blue, which features an SSL 9080J console and a large array of new analog and digital gear, will be open to select outside clients, in addition to being used by the partners to develop their own productions.

The transaction between Tainted Blue and Quad owner Lou Gonzalez was brokered by David Malekpour of Professional Audio Design. Lawrence P. Swist Designs and Evenfall Acoustics handled the acoustical redesign of the control room, the complete redesign of the live room and the full facility redesign, including lounge area, offices and kitchen.

In addition to the sale of the penthouse, another deal for the sale of Quad's remaining studios, spread over four floors in midtown Manhattan, is reportedly in the works. Post-sale, that facility will retain the Quad name and Gonzalez will continue to be involved in its operation. Meanwhile, Gonzalez will also continue in his current capacity as owner of Quad Nashville.

—David Weiss

OCEAN WAY GETS RENTED OUT

Rent's upcoming soundtrack was recently recorded at Ocean Way Recording Studios (www.oceanwayrecording.com, L.A.), with Rob Cavallo producing and David Campbell handling orchestral dates. Pictured in Studio B are (from left) engineers Doug McKean and Allen Sides (studio owner), Campbell and Cavallo.

ON THE MOVE

Who: Jerry Gepner, Vitec CTO

Main Responsibilities: Foster growth on the product development and customer relationship front, as well as in the business development and expansion area.

Previous Lives
- 2001-2005, president/CTO at National Mobile Television
- 1998-2000, co-founder/COO at Sportvision Inc.
- 1994-1997, senior VP of field operations and engineering at Fox Sports
- 1993-1988, director of production services at CBS Sports

The last great movie I saw was...*Star Wars Episode III* for the effects and *The Aviator* for story and performance.

If I could do any other profession, it would be...a successful composer and musician.

Currently in my CD changer: All of my music is on hard drives of one sort or another. That said, I am currently listening to Collective Soul, Little Feat and U2.

When I'm not at the office, you can find me...puttering with computers, working on the house, deep-sea fishing, in the gym or being a soccer/basketball/baseball dad.

TEC AWARDS UPDATE
TICKETS NOW ON SALE

Tickets are now on sale for the 21st Annual Technical Excellence & Creativity Awards, to be held Saturday, October 8, 2005, at the New York Marriott Marquis. In addition to presenting TEC Awards in 24 categories of Technical and Creative Achievement, renowned producer Arif Mardin will be inducted into the TEC Hall of Fame, while Talking Heads founder David Byrne will receive the Les Paul Award, sponsored by Gibson Guitar Corp. Les Paul, who turned 90 this year, will present the award to Byrne.

Tickets are available online at www.mixfoundation.org or by calling the ticket hotline at 510/985-3214. Proceeds of the ceremony benefit the causes of hearing health and audio education, including the annual TEC Awards scholarship.

WHERE ELECTRONIC AND ACOUSTIC MERGE
WYATT WORKS ON NEXT ALBUM

Doug Wyatt (foreground) and Cristoffer Lundquist

Doug Wyatt—inventor of key music technologies including OMS (Open Music System) software, which he co-designed with Opcode's founder Dave Oppenheim—has returned to his musical roots. Fusing high technology and classic analog instruments and production techniques, Wyatt is currently ensconced in producer Cristoffer Lundquist's (Roxette, Ulf Lundell, Lio) Sweden-based studio, The Aerosol Grey Machine (AGM, www.junkmusik.com/agm.html), working on his next album, which is due out next month.

The team (including creative director/co-producer Justin Winokur) is digging into old pump organs, tube amps, cembalo (an ancient instrument like a harpsichord—only bigger), Hammond and Wurlitzer organs, Rhodes electric piano, vintage distortion pedals, tape loops for analog delay, and several acoustic pianos and toy pianos. The album will be recorded to 40 tracks of analog tape—a 16-track and 24-track locked together—and mixed on an analog console with vintage analog outboard effects and dynamics.

"Normally, the acoustic and electronic worlds have some objection to each other, but here they will be blended together seamlessly," Winokur said. "The music bridges and marries an organic feeling with ambient and electronics so that the style isn't defined by the gear."

MPSE ANNOUNCES 2005 OFFICERS

Twelve-year member of the MPSE's (www.mpse.org) Board of Directors, Bobbi Banks (ADR editor for *2 Fast 2 Furious, Son of the Mask*) has been elected president; she was formerly VP. Frank Morrone (*Cider House Rules, Sleepy Hollow*) fills Banks' former role, and Glenn T. Morgan (*Open Water, The Day After Tomorrow*) has been elected Sergeant-At-Arms. Re-elected were Devon Curry, treasurer, and Marc Lanza, secretary.

Bobbi Banks

Newly elected to the Board of Directors are sound editors Jason B. Arnold and Jay Levine. Re-elected as sound editors were Scott G.G. Haller, Suhail Kafity, Maciek Malish, Christopher B. Reeves and Solange "of Hollywood" Schwalbe. Marc S. Perlman and Michael T. Ryan were re-elected as music editors. They join existing board members Harry Cheney, Joanie Diener, Gary Friedman, Jeremy J. Gordon, Robert Hargreaves, Kevin Howard, Albert Lord III, Steven Saltzman, Ahmad Shirazi, Anne-Marie Slack, Roland Thai, Donna Walker and Steven D. Williams. MPSE president David J. Bondelvitch is leaving the organization due to recent illness.

YAMAHA AND NEXO ALLY
TECHNOLOGIES OFFER "TOTAL CONTROL"

As events, concerts and shows are becoming more complex, demand for total system control is increasing. Two companies recently announced that they have found a way to offer their customers an "all-in-one" system: Yamaha and Nexo have entered into a strategic alliance, whereby Yamaha has acquired 10.22 percent of Nexo's common shares. Company representatives cite that demand for integrated pro audio systems was key to both companies' decision to combine technologies and products through joint-development projects. Yamaha is now distributing Nexo products, with the company's Commercial Audio Systems Division handling the U.S.

For more information, visit www.yamaha.com/proaudio or www.nexo-sa.com.

INDUSTRY NEWS

Joe Etrick

New York City–based **Creative Group Inc.** has hired **Mike Buckner**, general manager, and **Joe Franze**, director of HD production/new business...**Paula Arnett** joins **Margarita Mix de Santa Monica** (L.A.) in the newly created position of executive director...**Bionic Meda** (NYC) added **C. Scott Gorman** and **Andrew Malenda** to its roster of editorial talent...New faces at **Photomag Sound & Image** (NYC) are **Stephen Ostrow**, director of sales; **Bill Ivie**, general manager/mixer; **Andy Rando**, executive producer; and **Billy Gardner**, audio mixer/sound designer...**Kyle Kjensrud** has been promoted to **Full Compass'** (Middleton, WI) product specialist...Filling the systems specialist installed sound role at **QSC Audio** (Costa Mesa, CA) is **Joe Etrick**...Based in **Euphonix's** (Palo Alto, CA) London office is **Eddie Jones**, digital product specialist...Representing MC[2] Audio and XTA Electronics for **Group One** (Farmingdale, NY) is **Michael A. Colon**, national sales manager for professional audio products... **Rick Fernandez** is **Gepco's** (Des Plaines, IL) new sales manager for Latin America...New representative deals: New organizations joining **Inter-M** (Chester, PA) are **Maximum Group** (Arizona, Southern California, southern Nevada), **Ellison Northwest** (Washington, Oregon, Alaska, Idaho, areas of Montana), **McFadden Sales** (Kentucky, Indiana), **Ouzunoff & Associates** (Maine, Massachusetts, Vermont, Connecticut, New Hampshire, Rhode Island, upstate New York) and **Pacific Coast Visions** (Colorado, Idaho, Montana, Nebraska, New Mexico, Texas, Utah, Wyoming); **Ultrasone** (Franklin, TN) hired **Elizonda Music** (Mexico), **Just Pro Audio** (Brazil), **Music Mall** (Brazil), **VGL** (Chile) and **SVC** (Argentina); **Aviom** (West Chester, PA) appointed **Amber Sound** for the UK.

CORRECTION

Mat Edgcomb's (front-of-house engineer for Ben Lee) name was misspelled in "Now Playing," July 2005 issue.

Mix regrets the error.

NEW!
Award-Winning Audio Unbeatable Value

Pros everywhere know that the Studio Precision 8 has become the monitor of choice for the musicians and engineers who make a difference—otherwise known as multi-platinum *Grammy* award winners. Now that same prized "mixes you can trust" sound is available in a new smaller format. Introducing the **Studio Precision 6**. Same system design philosophy as its famous big brother. Same amplifiers. Same crossover. Same high frequency driver. Same dual port configuration. Same classy Event logo. The only difference: a 6.5" woofer that delivers more low end punch than you ever thought possible from a small format monitor. Oh yes, and all at a price point that will put a *big* smile on your face.

The wait for the perfect small studio monitoring system is now officially over.

Studio
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MADE IN U.S.A.

EVENT
ELECTRONICS

The Alfred Hitchcock Theatre at Universal Studios

By Tom Kenny

PHOTO: GARY KRUEGER

When Universal Studios opened Blu Wave Audio—a digital transfer, mastering and restoration facility—on the lot in 2003, it was immediately seen as a smart move. Consumers were demanding DVDs; Universal had the catalog. Technical filmmaking had changed; facilities had to deal with new formats. Budgets were shrinking; studios needed to find new workflow efficiencies. In reality, Blu Wave was simply the first public glimpse at a five-year plan to revamp the entire sound services department.

Today, with the redesign or new construction of three feature film mixing stages, four TV stages, 54 brand-new 5.1 editorial rooms, a trailer mixing room and enlarged client areas, the five-year plan is all but complete. And Universal stands at the forefront of Hollywood's return to lot-based sound services.

"When I arrived here in 2001, Doc Goldstein, Jeff Taylor and I made a five-year plan," recalls Chris Jenkins, an Academy Award–winning mixer and senior VP of operations at Universal Studios. "We took it to the president and general manager, Jim Watters, and said that this is where we'd like to be in five years. Essentially, we needed to diversify into some of the non-seasonal business and more of the emerging businesses. And we felt the need to eliminate some of the fragmentation and be responsible for anything that has to do with sound on the lot."

While the streamlined, modern appeal of Blu Wave, the Harrison and Digidesign ICON consoles, and Gigabit Ethernet connectivity have created new synergies and generated a lot of appeal, when chief engineer Goldstein (now VP post-production engineering) moved over from Warner Hollywood, it was not a pretty picture.

"When I came here, the consoles still had tubes in them," Goldstein says with a laugh. "The Quad Eight consoles in the big rooms had 40 faders, room acoustics were all wrong, we were recording to mag machines with no erase heads and recordists didn't know how to align their own machines. The TV show *Airwolf* was in Dubbing Room 1 with a console built by

RCA in 1954, with Langevin EQs and Gliss faders. Next door in Dubbing 2, we had an RCA from 1953 with 16 rotary pots. No kidding."

Along with Bill Varney, Goldstein and crew then set out on an ambitious plan to redo sound services. Dubbing Rooms 1 and 2 came down—one Quad Eight was rebuilt and moved in, the other got a Harrison PP1—and transfer was remodeled. The TV rooms got similar upgrades, but perhaps the most important move was the beginning of a relationship with architect/ acoustician Jeff Cooper, who redid every sound room on the lot. It's a relationship that continues to this day.

Cooper did not, in fact, design The Alfred Hitchcock Theatre, built originally in the late 1970s and pictured on this month's cover. However, in 1987, he was brought in to redo the acoustics, followed by some tweaks and mods in the '90s. His signature is all over the room, which is considered one of the world's best-sounding mix stages.

The centerpiece of the Hitchcock Theatre is the three-position, 640-input Harrison MPC4-D with TFT metering and direct connectivity to numerous workstation bays on the stage itself. "Harrison came to us in 2003 and said they had their digital platform ready," Jenkins recalls. "So we

purchased one MPC3-D and then looked at each other and said, 'We have to buy three.' [Laughter] If capital got cut off and we had one room with the newest MPC and the other two were old analog rooms, then you have status issues, morale issues, technical issues and perception issues with the client.

"We went back to Bill Owen [of Harrison] and worked out a way we could buy three." The other two reside in Dubbing Rooms 3 and 6 (also newly redone by Cooper, with built-in, side-wing workstation bays) for the mix teams of Andy Koyama/ Chris Carpenter and Gregg Landaker/Peter Reale.

By all accounts, Harrison was solicitous in finding out what re-recording mixers most desired in a console. Then the company built the features in. "We talked about what we like in terms of filter sets, the features of the Neve, the tools and toys, and the plug-ins with Pro Tools," Jenkins says. "Then I went and mixed on a Euphonix and talked to Jeff about how great the heads-up display is. Then I went to NAB and they had it—and then some! It's got the best of the Euphonix, the best of the Neve and the best of the Harrison. Plus, it looks like a Harrison, so all of our guys can sit down and get to work right away."

Behind the screen is the JBL Cinema 5000 Series, with Bryston 4BST amplification and Turbosound subs, a combination that Goldstein has pushed throughout the facility, moving down to the 3000 Series for the edit suites. On the day *Mix* visited, Jenkins and his re-recording partner, Frank Montano, were finaling director Cameron Crowe's *Elizabethtown*, due for release in October.

Because the acoustics were all done by Cooper, translation up and down the line—from editorial to premix to final, then back to TV versions—is spot-on accurate, a point Jenkins, Goldstein and crew deemed absolutely necessary in today's tight post-production schedules. Likewise, because of the Gigabit Ethernet (point-to-point, 10-gig interconnect) connections and 24 terabytes of central storage, automation data and audio files can be pulled up for any project in any room. All Pro Tools editorial systems hang on the network, which can be accessed from any of the stages, including those at Blu Wave.

"We haven't gotten to the point that we're sharing recorder/playback technology between the rooms," says chief engineer Jeff Taylor. "That is more of a centralized topology like Blu Wave. Because we're working in existing infrastructure, especially in feature dubbing, we have isolated machine rooms that are islands unto themselves. But they're all connected to our Windows 2003 server families that are managed locally within the sound department."

Those machine rooms have gotten smaller, but not by much. While Tascam MMPs have replaced mag (and will soon be replaced by whatever company puts out a next-gen playback/recorder combo), a facility such as Universal, because of its vast investment in preservation and restoration, must be able to handle any and all formats, including 24-track and, yes, mag film, as they did on the restoration of *E.T.* Still, the machine rooms have been cleaned up; the team has installed computer flooring to get rid of overhead cabling. Quite simply, there's just not as much to wire: The Harrisons are all MADI interconnectivity and Pro Tools wires easily, according to Goldstein.

So many shakeups have happened in feature film mixing during the past five years—from shrinking budgets, mass consolidation and loss-leading competition—that the Universal makeover can almost be viewed as a sign of stability and a return to regular cycles. The studio is booked solid in television and feature film through the end of the year, and with the recent purchase by NBC (and preliminary talks on a purchase of Dreamworks SKG), there's no sign that the pipeline will trickle away anytime soon.

"It's become much more competitive, and there's a big tendency toward an ero-

Jeff Taylor   Chris Jenkins   Doc Goldstein

sion of rates by certain parties around town that have had a huge impact on the perception that you can get quality for cheap," Jenkins says. "We don't have our eyes closed to it, but we don't believe in that mentality. We're fortunate that at this point in time, we can equip well, staff well, pay well and keep the top talent, because that way, we can keep the jobs. We still believe that it's worth paying a premium price for premium-quality services. That's why we try to stay small enough; we didn't build nine feature stages and nine TV stages. We split our business out so that if features are off, digital mastering can help pick it up; if episodic is down, sitcoms can have a big year. So we're trying to interweave all these businesses."

It might seem odd that Jenkins refers to Universal as "small," but once you look past the large rooms and big consoles, there are pockets of productivity everywhere. On the lot are six ProControl rooms, two Digidesign ICON rooms, two more Harrison Series Twelve boards—not to mention the Foley, ADR and trailer mixing services. For Jenkins, it's about covering the spectrum and being nimble within a large framework. But it's also about keeping the talent happy—and in-house.

"The most important aspect of it all is that we have really put an emphasis on people, people, people," Jenkins says. "We value the machine room guy equal to the mixer. Their concerns and the situation we create for them is no less than what we create for Gregg Landaker or Frankie Montano. We value the clients, and we value the talent base extraordinarily.

"Our president and general manager, Jim Watters, once ran editorial here, then post-production," he continues. "Our success is dependent on Jim's support and [CEO] Ron Meyers' philosophy of how a studio should be run and how it should look. We have the two best people to work for in the world." ∎

One of the 54 Jeff Cooper-designed Pro Tools (JBL Cinema 3000 Series speakers) edit suites on the Universal lot.

Tom Kenny is the editor of Mix

BY STEPHEN ST.CROIX

Things That Changed My Life

Technical Advances in Audio

ILLUSTRATION: WILL TERRY

This month, we present part one of a list of historically significant advances in audio, advances that changed the way humanity recorded and listened to music. The list is compiled from data painstakingly gathered by extensively interviewing absolutely no one. This historical perspective reflects—shockingly, no doubt—the memories of a single individual. But fear not, for he is as sharp as a ball, has in his career successfully boosted all frequencies and even achieved the ultimate theoretical signal-to-noise ratio on multiple occasions by accidentally stepping on a wire or power cord in the middle of the loudest crescendo.

Each item was chosen for its impact on lifestyle, not necessarily in the studio itself, but on the street, as well. So here we go, semi-chronologically, no less.

1. SPRING REVERBS

This may be a uniquely important invention, as it marks the beginning of the unstoppable trend of inferior products replacing excellent products and eventually eliminating them because they are, well…cheaper.

To me, nothing sounded better for most rock applications than a well-tensioned stereo plate with a little pre-delay. Soft, full, no digital stutter or machine-gun graininess. Just blissful physical reverb. Not a room, something different.

Sure, people were killed when the tensioning clips flew off and, like snares, only three guys on Earth could properly tune one, though everybody who owned one thought they were one of those three. And yes, they weren't portable. (Anabolic steroids were rare then.)

What the world needed was a good alternative for $\frac{1}{100}$ the price. Coiled springs were first used to simulate the effects of long-distance telephone lines. But Laurens Hammond decided that the shortcomings of this technology, namely the repeat echoes and slurred quasi-reverberation, would actually be cool to use as an effect. And so by the early 1960s, Hammond (the company) had a practical portable system. Meanwhile, Joe Meek's father made a spring reverb unit from a broken heater in 1958.

And so it is written. Reverb for the masses and nary a DAC involved. Who says necessity isn't the mother of invention? And surf music could never have existed without it. Never.

2. MULTITRACK RECORDERS

Now, what can anyone say about the biggest and most fundamental change in music recording since the controversial change from wire to tape? Not much.

Everyone under 40 working in the music industry today believes that multitrack recording is guaranteed by the Constitution.

But, be you an ancient tape or modern DAW user, look up and give a nod to that picture of Les Paul you have

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hanging between your monitors. You got one, right? You *owe* him, you know.

Now, he was bouncing, but it took multiple tracks to do that, and the next obvious step was to stack the tracks and eliminate the need to bounce at all. I think between Les and The Beatles, bouncing hit its peak.

MCI, Studer and Stevens produced viable commercial machines that made multitracking a way of life. We, and the way we sound, have never looked back.

3. NOISE REDUCTION

Ah, noise reduction. Whether 'tis the thousand versions of Dolby or a few dbx systems, NR changed our lives. Seems 16 tracks of

Yes, one could now impress the hell out of women by playing live guitar on a plane or in a hotel room while sounding like the live concert from hell.

newly developed Paul-o-Sound technology happily delivered 16 tracks of Pile-o-Noise. Noise reduction was, as is the way of it, initially for the elite—and only the elite with good techs to keep them aligned. But now it hides in our cars and cell phones, as it is no longer needed in our digital multitracks. But for a couple of decades, it made our pro audio world a much quieter place.

4. CASSETTES

The day I bought my first cassette player I moved to Switzerland and relentlessly recorded and played cassettes until my Dolby button broke. I left my entire collection of open-reel jazz tapes back in the U.S. and never thought of them again until today.

Okay, I just went down to the vault and opened one. *Mmm*. Not too good.

Cassettes successfully brought tape to the masses by, ironically, hiding the tape from the masses. They were the first publicly accepted option to vinyl and radio. They offered a first taste of programming our own music.

And today? Well, some cars still ship with cassette players. I think it's so that you can use a cassette adapter for your iPod.

5. PORTABLE CASSETTE PLAYERS

How cool was it to carry my 40-pound Nakamichi portable cassette player on commercial flights and have all the Stewardesses* come sit next to me and hear music? I'll answer that. You couldn't be no cooler. Trust me. The 11,500 D batteries I went through were nothing compared to life in the air with a Nak and two sets of cans.

"What *is* that? NO! Really? Can I hear? Wow! What do you do? Are you a musician? Is that *you* playing? Are you staying in L.A.? In *Laguna*? Really?"

Need I continue?

Now, keep in mind that I actually did use it to audition dailies while I traveled, so don't judge me too harshly.

*The term Stewardess was the preferred title at the time. Back then, PC meant Pacific Coast, not rules of conduct or a Dell.

6. THE SONY WALKMAN

Oh, man! Just when people were starting to get comfortable with portable cassette players, Sony came out with a great-sounding pocket player that was literally the size of the cassette that it played! Lasted many hours on a single AA; was very, very cool looking; and instantly revived the waning in-flight pair-bonding ritual detailed in section 5 above.

The Walkman is also historically important for another not quite so personally fun fact. It introduced the entire concept of an

BY PAUL D. LEHRMAN

More Than Mice

Tomorrow's Musical Instruments at the NIME Conference

Last month, I wrote about a college class I teach, in which students from various disciplines get together and design new electronic musical instruments. While the course has some pretty unusual aspects, I don't want you to get the impression that it is unique. Far from it. There are dozens of courses and development projects dealing with the same subject matter going on at universities and research centers all over the world. So many, in fact, that they have their own convention: New Interfaces for Musical Expression, or NIME, which met for the fifth time this past May in the beautiful city of Vancouver, British Columbia. And when I submitted a paper that described my course, they were kind enough to accept it, so I had no excuse but to go.

Vancouver is stunningly set between the island-filled Strait of Georgia and Canada's Coastal Mountain range. Although real estate values are among the highest in the country, thanks in large part to an influx of people and capital from Hong Kong in the years preceding the Chinese takeover, it is still a very reasonably priced place for Americans, as the film industry well knows. I was there only once before—22 years ago—and I've always wanted to go back.

I was there for another conference called Digicon '83, which billed itself as the "First International Conference on the Digital Arts." You probably never heard of it, but for everyone there, it was a life-changing experience: dozens of digital luminaires and soon-to-be luminaries in the same place talking about music, video, graphic arts and what would eventually become known as multimedia. I met Bob Moog, Herbie Hancock, Todd Rundgren and Andy Moorer, and saw for the first time toys and tools the likes of which would soon take their place at the center of the production world, such as Lucasfilm's EditDroid and SoundDroid (which evolved into Avid's Media Composer and Sonic Solutions, and ultimately the tools we all use today), some of the very first CGI systems used by Hollywood, a sampling instrument called the Fairlight CMI and something called MIDI.

Among the speakers at Digicon was a prescient Canadian composer and computer scientist named Bill Buxton, who said, "It's time to rethink the interface between electronic instruments and the user. We have to get away from the 'overblown electronic organ' syndrome. If we want to expand the range of musical expression, why can't we use new gestures—blowing, sucking, squeezing, kicking, caressing—instead of emulating the past?" He spoke, for the first time that I can recall, of devices he called "gesture controllers."

Flash-forward to 2005, and gesture controllers are what NIME is all about. And Buxton, who had left the music world to work on projects such as Alias/Wavefront (which

garnered him a Scientific and Engineering Academy Award), is back, delivering one of the keynote speeches and still preaching the same gospel.

At Digicon, Moorer opened his presentation about the SoundDroid with a slide of Moviola and the words, "This is the enemy." I don't know if Buxton remembered that, but he started his presentation exactly the same way—only the picture was of a Revox reel-to-reel deck. In the days when electronic music was brand new, he explained, concert performances would too often comprise someone walking onto a stage, pushing a button on a tape deck and walking off. But those days aren't entirely over: People still do the same thing with laptops. "If you're sitting at a computer and typing, why should I care?" he asked. Audiences at a live performance want to see someone doing something interesting to create the music, he said. "The goal of a

> Music engages you in a creative activity that tells you something about yourself and is 'sticky'—you want to stay with it. The best musical instrument is one that is easy to learn and takes a lifetime to master.
>
> —Golan Levin

performance system should be to make your audience understand the correlation of gesture and sound."

The conference, which had about 180 attendees, comprised three intense days of papers, posters, concerts, demos and jam sessions, which were all about inventing new ways to make music and enhance expressiveness and creativity. "The computer mouse is about the narrowest straw you can suck all human expression through," said another keynote speaker, Golan Levin of Carnegie Mellon University. "Music engages you in a creative activity that tells you something about yourself and is 'sticky'—you want to stay with it. The best musical instrument is one that is easy to learn and takes a lifetime to master."

It would easily take a dozen columns to describe all of the clever hardware and inspiring performances that were presented at NIME, but I'll try to titillate you with a few. For more, go to the conference's Website (http://hct.ece.ubc.ca/nime/2005), where you can download all of the

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papers and posters and, by the time you read this, some pretty cool videos.

Ever wish you could turn a smile into a tune? Someone's on it. A group from ATR Intelligent Robotics and Communication Laboratories in Kyoto, Japan, showed a system that could create music by changing one's facial expressions. A camera image of the face is divided into seven zones and a computer continuously tracks changes in the image, so that any change in any of the zones triggers particular MIDI notes. Other parameters are controlled by the amount of displacement of the image.

How about playing a song using an eraser? Try the Scrubber from a team at the Media Lab Europe in Dublin (which unfortunately closed the day after the group submitted their paper). It's based around an ordinary white-board eraser fitted with two tiny microphones and a force-sensing resistor. The system analyzes the sound created by the eraser on whatever surface it is being rubbed and applies it to a wavetable or sample, playing it in granular fashion. The rubbing signal controls the sample's speed, volume or other parameters, and the system can even detect whether the eraser is going backward or forward. The presenters showed how it can work on a sample of a garage door closing—stretching, compress-

ing and changing directions; the applications for sound effects work were pretty clear.

Maybe you've been listening to those pentatonic wind chimes on your porch and thinking about how to get them to do something different for a change. A team from New York University showed a system called Swayaway, which may be the answer. Seventeen vertical plastic stalks, each with a wooden weight at the top, are attached to a base containing flex sensors that send out MIDI controller information. At the same time, ambient sound is continuously picked up by a microphone, analyzed and processed by Max/MSP software and converted to MIDI. The combined data control a synth module with a number of pre-programmed sounds that literally change with the wind.

For the headbanging set, a group from Aachen, Germany, exhibited Bangarama. Talk about a low-budget instrument: This comprises a piece of plywood cut vaguely into the shape of a Flying V guitar, with 13 pairs of aluminum foil squares running up the neck. The player wraps aluminum foil around one of his fingers so that moving along the neck shorts out a pair of foil pieces and closes a circuit, which then sets up a heavy-metal guitar sample. This player also wore a baseball cap onto which was attached a contraption containing a coin mounted on a pivot. When he swung his head forward, the coin came in contact with another piece of metal and that circuit closing triggered the sample. Even something

> [Perry] Cook also had a contraption that looked like it had crawled out of the wreckage from an accident involving a small MIDI keyboard and a Hohner Melodica played by blowing in one end while fingering a keyboard sticking out in front of one's face.

BY KEVIN BECKA

Hellacious Horns

CAPTURING TROMBONE, TRUMPET, SAXOPHONE AND FRENCH HORN

English conductor and obvious curmudgeon Sir Thomas Beecham said, "Brass bands are all very well in their place—outdoors and several miles away." But don't tell that to any pop music or jazz lover since the dawn of recording. For nearly 100 years, these instruments have helped drive popular music to new heights of popularity. The horns of Bix Beiderbecke; Louis Armstrong; Glenn Miller; Sly and the Family Stone; Chuck Mangione; Chicago; Blood, Sweat and Tears; Earth, Wind and Fire; and Kenny G still tickle the listener's musical palate—even years after their heyday.

The engineer's job is to capture this shouting ensemble and bring it to the listener. This studio role is especially challenging as horns do not fare well when forced into a smaller environment. Because of their sheer power, horns sound best when they can breathe—when you can hear them interact in an ambient space. In a roundabout way, Beecham had it right: There's something that adds to the excitement of a horn section when you hear it from a distance, when it's interacting with the room. For this reason, microphone and player setup become very important. This installment of our "Recording the Band" series explores what it takes to record the perfect horn track.

TRUMPETS AND BONES

The trumpet is by far the loudest of the horns, with a large dynamic range that can reach from soft melodies up to stabs and shouts that curl your hair. The instrument emanates sound from the bell and is best miked from a distance for a number of reasons. At its peak, a trumpet can easily overload even the most robust mic, but more importantly, the sound of the horn captured directly at the bell is too strident; trumpet sounds best as a blend of direct and reflected sound.

When tracking a solo trumpet, you have the luxury of recording it at varying distances by using room mics. You could, for instance, use a single cardioid condenser pulled back about four to six feet from the bell, with a pair of stereo room mics placed further in the room. Depending on the space's size, try varying the distance of the room mics to capture more ambience. Good mics for this application include large-diaphragms such as a Neumann U47 FET or U87 or a smaller-capsule mic such as a DPA 4011 or Neumann KM54. These mics can all take high levels and they sound great. A pair of omni or cardioid mics in the room—such as a Neumann KM 83i, AKG 451E or SE Electronics SE-3—would work well to pick up ambience. Room mic setup can vary from ORTF to spaced

pairs; spaced pairs provide a "larger" sound because of the spread between the mics. Ribbon mics such as the AEA R88, R92 or Royer 121 or 122 also work very well with trumpets, rounding out the transient edges and exhibiting an overall smooth sound.

If you are recording trumpets in a section with other horns, then the mic can be placed four to five feet back from the trumpets. Using one mic for two trumpets lets the players achieve their own natural balance and will be more economical, track-wise, especially if you set the section up correctly in the room as discussed below. Good mics for capturing the horn's timbre would be any of the mics mentioned above or even a ribbon mic. Even when the mic is pulled back a few feet from the horn or has a figure-8 pattern such as the ribbons, the instrument's sheer dynamic power will overcome any leakage problems from the other players in the section.

Trombones can rock the house with level but don't have as much power as a trumpet. Trumpets put out more sheer SPL and have a more piercing tone and a higher range. Techniques for recording solo trombone are similar to that for a trumpet. Pull the mic about two to five feet away from the bell, relying on your ear to determine whether you have as much of the room as you need. When recording trombones in a section, keep the mic about a foot from the bell of the instrument. This technique helps keep it well-isolated for the mix. Unlike with trumpet, if there is more than one trombone player, then it's best that each has its own mic. This setup keeps the "battle of the slides" to a minimum and the possibility of a collision low.

Mike a trombone approximately two to five feet from the bell of the instrument.

SAX AND FRENCH HORN

Saxophone is capable of subtle nuance but doesn't have the dynamic range of a trumpet or trombone, so putting mics closer to the instrument is ideal for section work. Like all horns, for solo work, you can experiment with moving the mic back to get more room, but generally, close-miking is the ticket to catch the sax's subtleties of dynamic range.

Techniques for recording saxophones vary across the range of the instrument family, with the common theme being that the sound of the horn does not emanate from the bell but from the keys and bell in combination. For this reason, when recording alto and tenor, place the mic a foot or so from the horn; placing it up toward the center of the horn works best when using a single mic. This technique can also be applied to solo or section work. For solo sax, try placing the mic further back into the room, positioned about ear-high and pointing toward the horn for more room interaction. A good multi-mic technique is placing one mic pointed directly at the bell and another up closer to the keys eight to 12 inches away. If the player has a tendency to move around a lot, then give the instrument more room.

Baritone sax is a bit different because its bell curves up higher on the horn than an alto or tenor, so you can't really get to the keys with a microphone. For bari, a single condenser mic pointed at the bell and placed about two feet away works well, as does pointing a second mic up close to the bottom of the horn to pick up the low-end sound that naturally emanates from there.

The Story Behind The Sound

FRED CATERO AND CHICAGO TRANSIT AUTHORITY

Recording expert Fred Catero's credits range from Big Brother and the Holding Company's *Cheap Thrills*; Blood, Sweat and Tears' *Child is Father to the Man*; and Herbie Hancock's *Headhunters*. His career spans back to the heyday of New York's Columbia Records, where he recorded the subject of this sidebar: Chicago's 1969 debut, *Chicago Transit Authority.*

"We recorded the album at Columbia's Studio A, a large room where they did Johnny Mathis, [Barbra] Streisand, Tony Bennett, Mel Tormé and the big bands," says Catero. "In those days, part of the sound was getting the ambience of the room because it was so good; that's how I was taught." Fred Plaut mentored Catero in the early days; Plaut was brought from Germany by Columbia's Goddard Lieberson to work in the label's U.S. studios. "[Plaut] was a master sound engineer and was responsible for 90 percent of the Broadway shows that came out of Columbia in that era," Catero says. "He balanced it and mixed it live, and it was all recorded live to a 2-track or even mono in the early days. It sounded gorgeous. His feeling was that if the room sounded good, use it. So that's what I tried to do."

The Chicago album was recorded and mixed during a two-week period to an Ampex 8-track machine. "The entire horn section was recorded as an overdub because the arrangements were fairly complex," Catero remembers. "If someone made a mistake, we did the whole part over." Catero set the whole section in a line in the large room and used either Neumann or AKG condensers to capture the sound. Catero is very specific about his horn recording techniques: "If you mike close, you don't get the horn, you just get the bell of the horn. In most horns, and even clarinet and flute, the entire instrument plays and it's not meant to be heard an inch away from the horn." He has always taken the approach that a mic is like the human ear: It is meant to "hear things" from a distance rather than at close quarters. As such, he records the players or the section from three or four feet away.

The console used for *CTA* was a 16-input, Columbia-designed board. For reverb, Catero used popular plates from companies such as EMT, but he also recorded in Columbia's seven-story echo chamber fashioned from a stone fireproof stairwell that was used for emergency evacuations. "They put a speaker on the seventh floor and on each floor was a microphone. You could mix all these great decays together from the mics," he says. "The huge explosion you hear in Simon and Garfunkel's "Bridge Over Troubled Water" is that chamber."

—Kevin Becka

Can you picture yourself owning an SSL console?

Songwriter Producer Mike Elizondo

[Eminem, 50 Cent, Fiona Apple]

Producer engineer Tal Herzberg

[Green Day, Counting Crows, Mya]

Producer David Kershenbaum

[Joe Jackson, Bryan Adams, Tracy Chapman]

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A ribbon can also work well on a solo bari sax because the mic naturally rounds out the transient edge of the horn on short notes while providing a nice warm and extended bottom end, especially in close proximity. However, a ribbon does not work well on saxophones in a section with other mixed horns due to leakage. In this situation, a cardioid condenser gives you the necessary dynamic range and the ability to cancel off-axis signals.

The soprano sax with its straight bell changes your mic placement a bit. Its bell points downward and the keys are oriented toward the listener. Like the other saxes, the soprano is capable of very quiet passages, so close-miking works well. And, like its brothers, the instrument emanates sound from the keys and bell, so a single mic also works well when placed in the lower third or the horn, pointing at the keys about a foot back. You will certainly get key noise when recording soprano this way, but that's the nature of the beast. Here, a condenser mic captures the instrument's upper range nicely. Two mics can be used: one pointing at the bell about six inches away and the other at the

When recording alto or tenor saxophone with a single mic, aim it toward the center of the instrument.

keys in front of the horn about eight to 12 inches from the instrument. This gives you the ability to mix the more strident sound at the bell and the warmer timbre emanating from the front of the horn to taste after the recording.

Kenny G's signature soprano sax sound

is achieved by placing a single mic pointed directly at the bell of the horn in close proximity. In this case, the artist prefers to listen through speakers rather than headphones, so it is critical that the mic be directional. He adjusts the optimum speaker level in the room so he can hear the track as he plays, yet doesn't get a lot of the track leaking into the mic. When recording, the mic is set directly between and in front of the speakers in the control room, just behind the listening position. The track playback level is then set to optimum and marked on the control room's volume knob, so if the setup is struck and then returned to days later, the level is the same. The best way to check the playback level is to record the mix played back through the speakers. Of course, feedback and leakage are an issue, so it's best to keep it as low as possible. On Kenny G's *Breathless* CD, a Neumann TLM 170 and EF Control mic preamp were patched directly (no EQ or compression) to a Sony 3348 HR digital multitrack tape machine.

The French horn is in its own category, sounding best when miked at a distance rather than up-close to capture a higher ratio of reflected energy reacting with the room. In fact, to truly capture a French horn's timbre, mike the horn where you can capture more reflected energy than direct energy. For this reason, the players should be placed with their backs to a wall or some other boundary such as a large gobo. Place the mic four to six feet in front of the player, five feet above the floor, facing the reflective wall or surface. If the sound isn't developing enough in the room at this

Case Study

L.A. HORN MAN JERRY HEY ON GETTING THE PERFECT SOUND

Los Angeles–based trumpeter, arranger and producer Jerry Hey has been at the forefront of horn recording for more than 30 years, with an extensive discography including projects for Quincy Jones, Michael Jackson and Dolly Parton. Most of the work Hey does involves a four-horn section comprising himself and Gary Grant on trumpet, Bill Reichenbach on trombone and Dan Higgins on sax.

As far as mic choices for brass, Hey prefers to bring his own mics to the session. His all-purpose favorites for trumpets and trombones are the Royer 121 and 122. ("John Jennings from Royer brought some down to the session and I was sold," he says.) However, when the session calls for a brighter tone, he goes with the Neumann KM54. "If the horns are battling it out on the track with guitars,

live drums and real bass and you need a little more edge to it, I go with the KM54," he says. Hey recently completed recording horns for a song on the latest Earth, Wind and Fire CD, which was produced and written by David Foster. "[Engineer] Humberto Gatica requests that I bring my KM54 to the session," Hey says.

As for sax, Hey has other preferences. "A ribbon doesn't work as well for a sax because it's a figure-8," he says. "With trumpets and trombones in the room and sax not being as loud, the brass tends to get on the backside of that mic, causing leakage problems." For that reason, he often uses a Neumann U67, KM54 or AKG C12 or 414 on sax.

When miking a horn ensemble, Hey likes to use one mic for every two trumpets and a single mic for each sax and trombone. His approach to processing during tracking is hands-off: "Generally speaking, if you don't add compression or EQ, you've got all the right mics and everyone plays like they're supposed to play, then it's going to sound like it's supposed to sound," he says.

—*Kevin Becka*

World Radio History

distance, try moving the mics even further back. Also, because the horn projects in all directions, it would be obtrusive in a section and should be recorded as an overdub for maximum flexibility when mixing.

SETTING UP THE PLAYERS

When setting up a horn section in the room, the goal is to have the players be able to communicate visually, hear each other and keep the louder horns from smothering quieter horns in their individual mic feeds. Because the studio is a controlled environment and it's not necessary to orient the players to an audience perspective, you can position everyone for optimal comfort, communication and isolation.

Jerry Hey, an L.A.-based trumpeter

One setup for recording a four-horn section comprising two trumpets, one sax and one trombone. Arrange the players in a wide "u" shape facing inward. Capture both trumpets with a single mic, placed four to five feet away. Have the trombone and sax face each other, with their mics placed no more than a foot from the instrument bells.

4 to 5 feet

1 foot

1 foot

with a discography that reads like a who's who in recording (see sidebar on page 38) has some very specific ideas on horn section setup, depending on the number of players involved. For a small section (two trumpets, one sax, one trombone), he sets players side-by-side in a line facing

their mics. For a larger section such as a big band (four trumpets, four trombones and five saxophones), he uses a non-traditional setup: Rather than set up the band as it would be oriented onstage—saxes in front, trombones behind them and trumpets at the back—he sets the brass

More Tips From the Pros

By Gary Eskow

Orchestral engineer Keith Johnson engineered on two Grammy-winning albums and has been nominated six times in the Best Engineered Classical Recording category.

On his favorite mics for recording brass: "I use some special and unique mics that are hard to find these days, principally the Sennheiser MKH 404 and 405, which I've extensively modified and, on occasion, a pair of AKG CK 26 mics with vacuum tube electronics [Nuvistors] that I place near each other in the hall to produce back slap when we need that triumphant brass sound. I also place Sennheiser MKH 104 or 105 omnidirectional mics along the sides of the hall to record the brass chorus spreads."

On matching mics with instrument characteristics: "Let's take the accent sting sound that French horns produce. I'll take the modified 404s or 405s and place them very high above the horns. The ultra-thin diaphragms and internal slope upward EQ adds harmonics to the main mix. These microphones also double up for percussion accents.

Doug Oberkircher tracked Sting's 2000 Grammy-winning performance on the Jason Miles–produced Telarc CD, A Love Affair: Celebrating the Music of Ivan Lins. He has also worked with Gato Barbieri, Spyro Gyra and Blood, Sweat & Tears.

On recording saxophonist Jay Beckenstein: "Placing a U89 on both sides of the soprano and a TLM 103 to pick up the bell works beautifully. Saxophonists tend to

move around a lot when they play, and small condenser mics produce lots of fluctuation in level. This method of recording takes care of that problem."

On recording solo tenor sax: "I've had to experiment to get the character of that instrument down as powerfully as I'd like. It's hard to pick up the full vibration of the tenor. I've tried to place the player in front of the glass and put a PZM mic onto the glass, but that produces too much of an ambient sound. It's mic position more than anything else, and you have to experiment within the environment."

Over the course of the nine years Antonio Oliart spent at WGBH in Boston, he has been nominated five times for the New England Emmy Awards, winning three of them. Oliart has engineered for the likes of Telarc, Koch International and Philips.

On maintaining a natural acoustic sound in classical recording: "I'd rather mike sections than individual instruments. I like to spot a couple of aerial mics on the brass along with the main stereo set that gives me the blend and distance that I want. I want to keep depth in a classical recording."

On tried-and-true orchestral miking techniques: "I use B&K—now DPA—4006s for my main orchestral pair; they yield a very natural string sound without getting brittle or bright. I also blend in a pair of Neumann KM130s. The 130s give me an enhanced bass that the 4006s by themselves don't capture. I set up the Neumanns in the center and use the 4006s as outriggers.

Antonio Oliart

Keith Johnson

Doug Oberkircher

up in a wide "v" with the musicians playing into the open room, giving the horns room to breathe. The "v" is set up with the trumpets and trombones on either side of the "v" and the saxes behind the trombones. This keeps the brass from leaking into the saxophones. As a side note, leakage is not bad when recording a section; rather, it can add a touch of reality and ambience to the track. The thing to watch out for is making the leakage unmanageable in the individual tracks. For instance, having too much trumpet in the trombone and sax tracks will make your mix a nightmare.

For a smaller section of four players—two trumpets, one trombone and one sax—setting the musicians in a "u" shape playing into the center works well. The trumpets are positioned at the bottom of the "u," with the trombone and sax facing each other at the sides. (See the figure on page 40.) This setup lets the trumpets adjust their mixes to their mics and keeps the trombone and sax off-axis from each other. Because the trumpet is the loudest of the three instruments, it's expected that you'll get leakage into the other mics. But with the sax and trombone each having their own mic, you can make them louder in the mix by bringing up their respective tracks.

Once you set up the players and get their instruments miked up properly, you can experiment with some stereo pairs to bring the room more into play. A stereo pair placed across a section (such as a Royer SF-24 stereo ribbon) can give you an extra bit of ambience to play with during the mix, bringing the section more into focus with the rest of the track. If the horn section is larger, then individual pairs can be placed across each section, providing you with a lot to play with during the mix. Depending on how you set up the players, the stereo pair can be pulled back further in the room to add ambience.

If need be, a touch of compression can help tame down a section that jumps too

Large-diaphragm microphones work well on trumpet.

far out of the track and is uneven, but wait until the mix, as adding compression and EQ during tracking can paint you into a corner that could be difficult to get out of later.
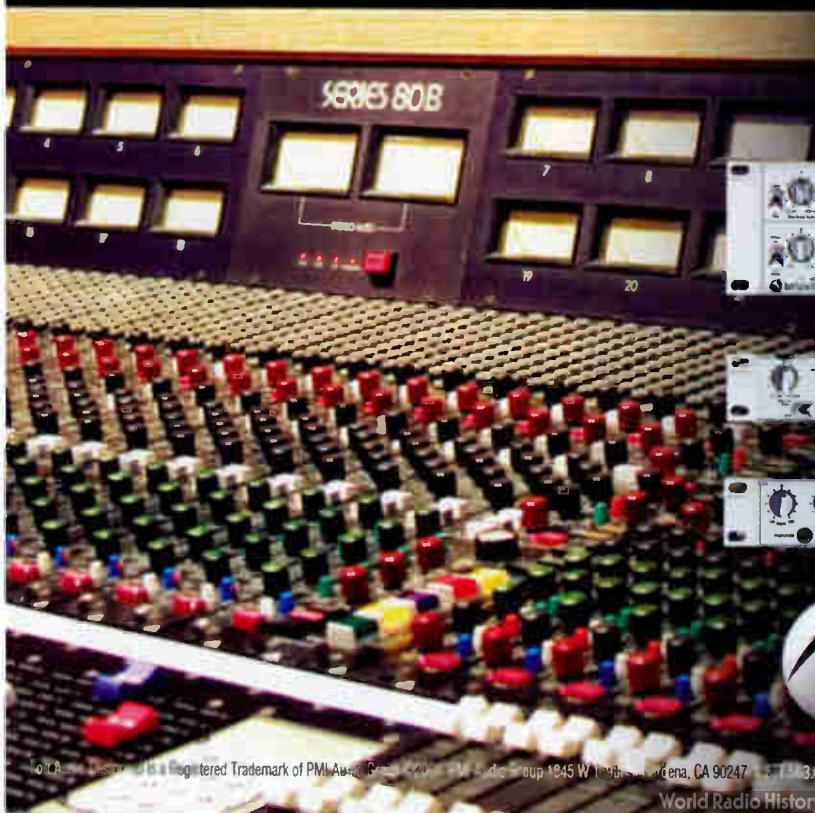
IN THE MIX

Reverb and delay work very well with horns. A simple delay can make a solo horn sound haunting, such as the solo trumpet from Jerry Goldsmith's *Patton* score. A simple two or three notes with a medium delay with many repetitions acted as a theme for Patton's past life experiences and is a signature part of the score.

Bruce Swedien's use of a reverb with a long decay on his mix of Michael Jackson's "Don't Stop Til You Get Enough" rocks the track. On the flip side, no one can argue that the "dry as a bone" horns on an Al Green track certainly stands the test of time. The rule is, there are no rules. Let the music dictate the treatment.

When mixing the horns as a section, if they are recorded as mentioned above, you should not have problems getting each horn to be heard in the mix. One nightmare would be if you had so much brass leakage on sax tracks that you couldn't get enough sax in the mix. This is why getting it right at the tracking session is so important, as fixing it in the mix is not an option.

Trumpets will naturally dominate the horn section mix with the trombones, saxes and even French horns playing a supportive harmonic role. There will be leakage from the other section members in the trumpet mics, and if "more me" is needed, you can get it from the close-miked trombones and saxes or overdubbed French horns. Panning is to taste, but if you have multiple passes, straddle the center image a bit to keep the horns out of the vocal's way. Solo instruments will most likely be panned in the center.

When dealing with EQ and compression, you'll often deal with the horn section as a single unit. As mentioned above, EQ and compression are best added at the mix stage. Sometimes a bit of high-end boost will dig the section out of the overall mix when the background is thick with guitars, keyboard pads and other space-gobbling instruments. A bit of mild compression can smooth out the section, sitting it down nicely in the mix.

Whether you're recording solo horn or a big band, capturing the excitement of the instrument when it's played to the top of its game is an experience an engineer will never forget. Horns are definitely some of the best icing on the cake that music has to offer.

Kevin Becka is Mix's technical editor.

ONYX·80 Series
PREMIUM 8-BUS LIVE SOUND CONSOLES

Designed from the ground up for superior sound and reliability.

Right from the start, we designed our new Onyx 80 Series Premium Live Sound Consoles to provide superior value in every detail—ergonomics circuitry, performance, sound, and yes, even knobs.

Our industrial design team started with 10 different knob prototypes. Their criterion was both comfort and precision, with feel, shape, and ergonomics at the top of the list. After two months, they came up with a tapered design that felt just right, and allowed users to "feel" the setting without having to look at the knob itself.

This exacting development process was employed throughout the entire Onyx 80 Series Console. We started with the highest quality analog components available — from premium op-amps to custom chip sets costing exponentially more than previous designs. Most notably we developed all-new Onyx mic preamps and Perkins EQ circuitry from the ground up specifically for optimum performance within the total Onyx system.

As a result, Onyx mic preamps deliver outstanding, verifiable specs like 123dB total dynamic range, –129 dBm Equivalent Input Noise and 0.0007% Total Harmonic Distortion. And our all-new Perkins EQ circuitry—based on the Wien Bridge topology found in hallowed "British" desks of the '60s and '70s—offers all the warmth of British EQ with greater boost/cut capabilities.

Additionally, the Onyx 80 Series offers features never before found in its price range. Its eight Auxiliary sends are logically divided into pairs with each pair assignable as pre- or post-fader. Plus, every pair offers a Stereo button that reconfigures the Aux sends to perform level and pan functions for simple and intuitive control of up to four stereo In-Ear Monitor mixes.

Of course, all these features are for naught if a live console is not built to last. So we designed the Onyx 80 Series console upon a tough-as-nails modular monocoque design, reinforced with beefy aluminum extrusions and strategically placed steel bulkheads. The design was torture-tested continuously for impact, shock, heat vibration, humidity, and even dropped repeatedly from a height of three feet. In other words, it's ready for the real world.

Introducing the new Onyx 80 Series 2480, 3280, 4080 and 4880 Premium Live Sound Consoles—the best value in the history of live sound—from Mackie, of course.

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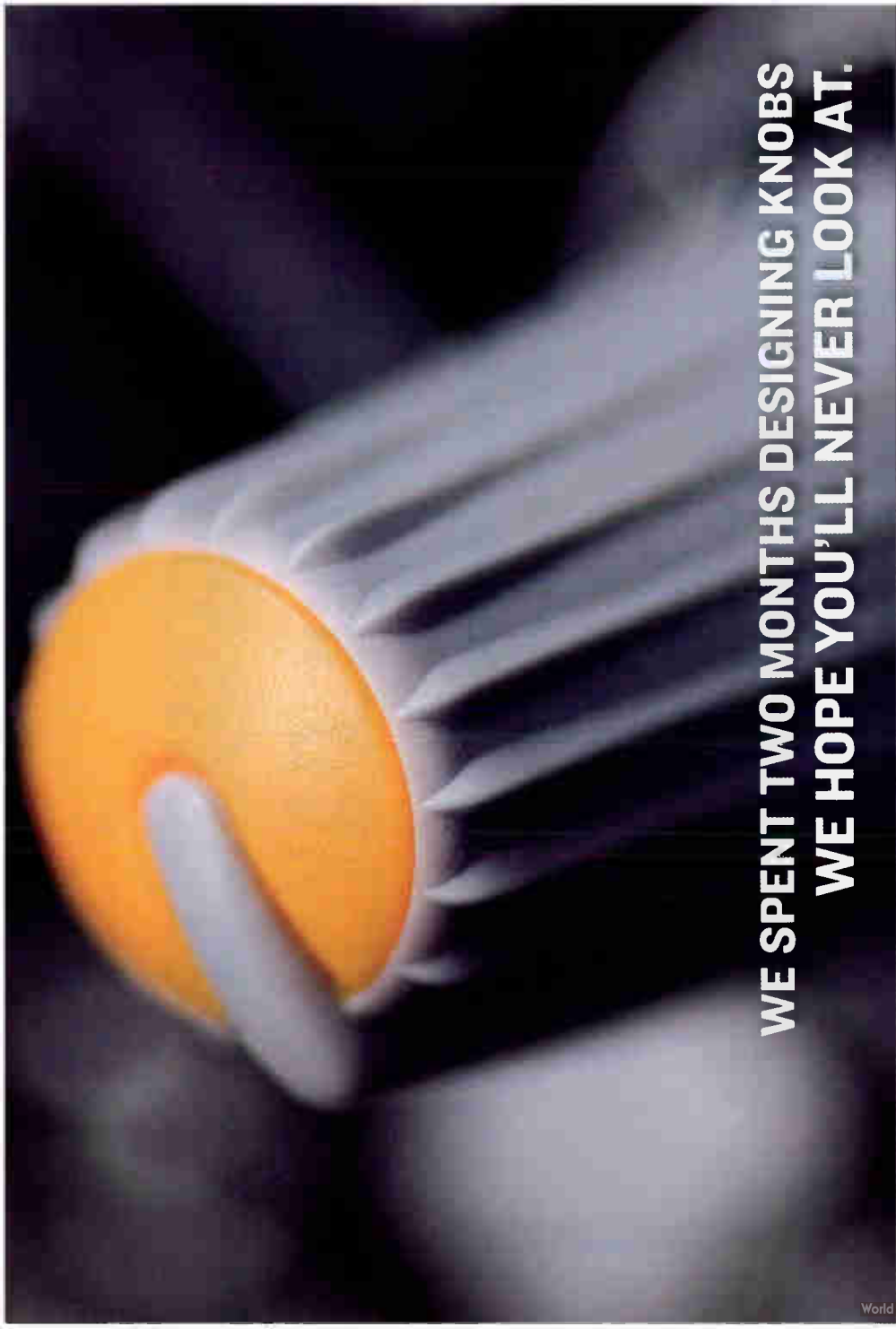
WE SPENT TWO MONTHS DESIGNING KNOBS
WE HOPE YOU'LL NEVER LOOK AT.
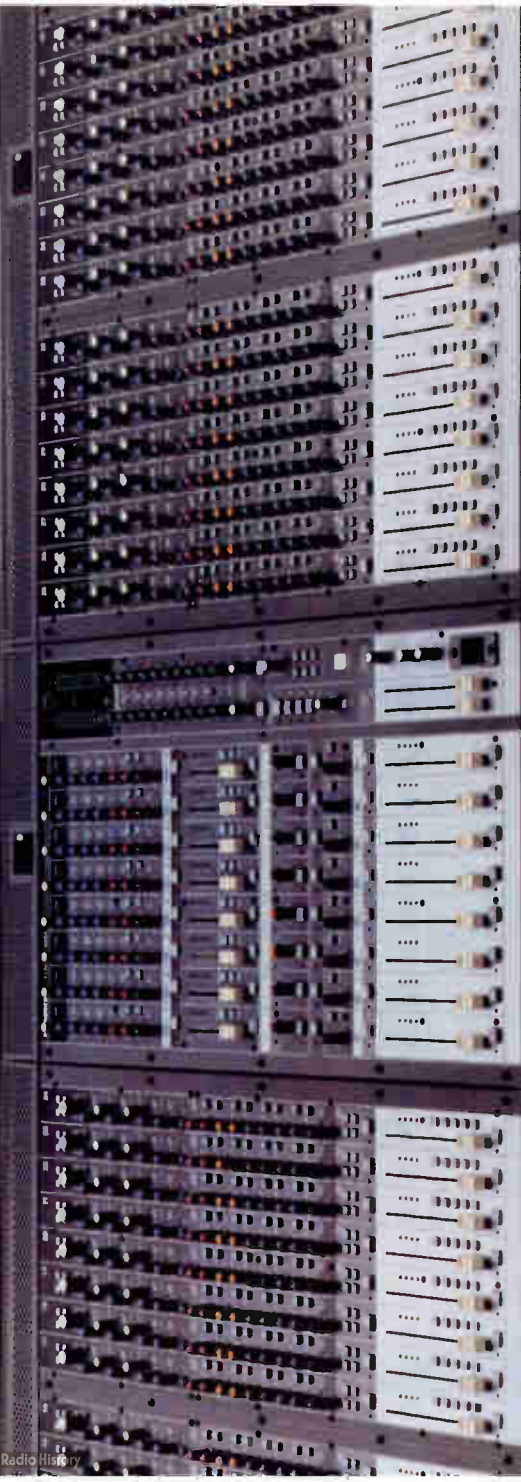
MACKIE ONYX 80 SERIES: SUPERIOR PREAMPS, NEW EQ, PREMIUM CIRCUITRY AND FEATURES. PLUG IN TO QUALITY.

MACKIE.

Accessorize
Your DAW

Essential Add-Ons for
The Well-Equipped Workstation

BY GEORGE PETERSEN

By now, even the most ardent analog holdouts have conceded that computer-based production is here to stay. And the well-tempered modern digital audio workstation can even sound pretty good. Just as hot rods and custom motorcycles are coming back—bringing high performance back to the world of stock production vehicles—interest in optimizing a digital production system's specs and speed is revving up.

Adding some new DACs or ADCs can put some pep into an older DAW. But upgrading converters doesn't require replacing 48 channels of I/Os. Sometimes adding a high-performance 2-channel unit—used mainly for overdubs while tracking or interfacing a couple channels of tube EQ during the mix or for routing the output bus for mixing to analog 2-track—will provide a huge quality boost at a minimal cost-per-track.

The more devices connected in a system—DAW or otherwise—the greater the need for a stable, external clock signal to eliminate the possibility of spurious clicks and pops, reducing jitter and boosting audio performance. And as with everything else in a studio, master clock units range from basic no-frill generators to elaborate boxes with distribution, format conversion and more. A little clocking goes a long way toward improving the sound of any digital audio system, and DAWs are far from immune to the effects of poor clock sync.

Monitor controllers (stereo or surround) and mix control surfaces simplify life for those who mix in the digital domain. There are more than a dozen monitor controllers on the market—with some incorporating elaborate control room/talkback facilities and multichannel stem busing/routing—to handle nearly any application. But for those who simply need a straight-wire approach to turning it down, the stereo NHT Pro's Passive Volume Control (PVC) does the job with minimum fuss.

Mix controllers run the gamut from small, inexpensive fader units from JLCooper and M-Audio to large-format entries such as Digidesign's ICON, the Smart AV Smart Console and the Euphonix System 5-MC. Blurring the lines between console and controller are systems combining full console capabilities with layers for DAW control like Yamaha's 02R96 or Solid State Logic's AWS 900. Of course, once you're in this league, the word "accessory" hardly applies.

POWER AND SPEED

Add-ons may ease life in the DAW lane, but what workstation users really crave is power and speed—and lots of it. There are obvious ways to take your DAW to the next step, such as increasing RAM, adding more storage,

Digidesign Accel card

TC Electronic PowerCore Compact

Solid State Logic AWS 900

World Radio History

upgrading your CPU or installing the latest (and hopefully most bug-free) version of your software and/or operating system. In terms of the latter options, sometimes the best way to go is to stick with the software rev you've got, unless other circumstances demand it. DAW software and the way it integrates with the CPU, OS, various plug-ins and I/O devices forms an extremely intricate, complex system where the slightest incompatibility at any link in the chain can occasionally have disastrous and extremely difficult-to-diagnose results. The old adage "if it isn't broke, don't fix it" certainly applies to DAWs: Waiting a month or two before installing that hot new OS or upgrade can be good advice.

The best place to begin the search to turbo-charge your DAW is with the manufacturer itself. Companies that build DSP-based hardware (non-native) workstations specialize in providing all kinds of upgrade paths for adding channels, I/O capability and signal processing punch.

Designed to work with Digidesign's Pro Tools|HD systems, the company's $4,995 Accel card has almost twice the power of HD Process cards and four times the punch of MIX Farm cards, while dramatically increasing a system's voice count. Accel cards support up to 192kHz operation and the TDM II architecture in Digi's HD pack plug-in suite, as well as third-party signal processing software. Accel cards can be added to any Pro Tools|HD rig running software Version 6.2 or higher and integrates with all existing HD-compatible plug-ins, as well as TDM, HTDM, RTAS and AudioSuite formats

This OEM booster concept is not unique to Digidesign. Sonic Studio's HDSP FX Processor adds additional channels of real-time processing to its SonicStudio HD workstation, simply as an add-on full-length card for the system's HDSP main board. Similarly, Soundscape's Mixpander 5 or 9 PCI cards add five or nine additional DSPs to a Soundscape DAW (Soundscape 32, Soundscape 16, R.Ed or SSHDR1-Plus) for additional mixing, effects and processing crunch with 336 internal mixing buses and 64 bidirectional audio streams between the Soundscape Mixer and the host PC.

Fairlight takes a slightly different approach with its DREAM family of DAWs, which include a suite of software processing. The company's Plug-Ins Managers are multiprocessor cards (adding either six or 15 DSP chips) that operate within the host computer that's running the DREAM soft-

ware or on an outboard PC, thus sidestepping the need for a card cage. In addition to offering dedicated 40-bit floating-point processing, the Plug-Ins Manager cards bring support for third-party VST software to the Fairlight platform.

Even hardware-based DAWs have gotten into the act. Roland's VS8F-3 Plug-In

NHT Pro Passive Volume Control (PVC)

Effect Expansion Board is compatible with the company's VS Series—from the top-end VS-2480DVD down to the VS-1680—giving tens of thousands of Roland users the opportunity to upgrade their systems at any level. The VS8F-3 boasts 56-bit processing and sampling rates up to 96 kHz, depending on the V-Studio host. Each VS8F-3 can run two plug-ins; Roland includes five plug-ins with each board, and third-party developers for the platform include Antares, IK Multimedia, Universal Audio, George Massenburg Labs, McDSP and others.

NON-OEM POWER SOURCES

Outside suppliers of hardware processors for plug-ins are on the rise. Moving the CPU load off the computer and onto auxiliary DSP not only provides more horsepower to run more toys, but can also give users more life out of their computer and possibly put off a much-needed upgrade until some future time when faster, more powerful (and, hopefully, cheaper) machines arrive. And the auxiliary DSP hardware can later be moved onto the new computer for even more fun.

The grandpappy in this genre is Universal Audio's award-winning UAD-1, now sold in pre-packaged bundles with the UAD-1 DSP card and a suite with up to 24 software plug-ins. This PC/Mac-compatible, short-form, 7-inch card is PCI 2.1–compliant, supports up to 192kHz sampling and its bus mastering DMA provides zero host loading.

Supporting native processing workstations—Mac or PC—TC Electronic's PowerCore platform offers a wide selection of plug-ins that run on inboard (PCI card) or outboard hardware to suit various production needs/styles and integrate with any VST, AudioUnits or RTAS-compatible DAW. The newest system is PowerCore PCI MkII,

a much-enhanced second-generation of the company's original PCI card and marketed in a bundle with 14 plug-ins. Designed with the laptop user in mind, PowerCore Compact combines 12 plug-ins with a small processor that communicates to the host via FireWire. For those needing more, PowerCore FireWire bundles 14 plug-ins with a larger hardware package in a single-rackspace chassis. The system has an open architecture for third-party support, and multiple units can be used for more power.

The newest hardware DSP accelerators on the block (so new they aren't scheduled to ship in quantity until next month) are the APA32 and APA44-M from Waves. The APA32 is a one-rackspace unit, while the more powerful APA44-M is a half-rack unit that can be ganged side-by-side with a second unit, providing maximum power in a small portable package. Up to eight units can be connected to the host computer via standard 100M or 1G Ethernet cable, and can be switched or shared among several DAW workstations via a suitable V-LAN configuration. These PC/Mac-compatible units support Pro Tools 6.9, Nuendo/Cubase SX 3.0.2, Logic Pro 7.1 and Digital Performer 4.52. Both include Waves' IR-L Convolution Reverb and Q-Clone plug-ins.

Of course, with most of these cool system boards, boosters, graphics/display cards, etc., one snag you may encounter is running out of PCI slots in your computer; you may need to budget for some kind of expansion card cage. One leading provider in this field is Magma, a company that makes one- to 13-slot PCI expander systems that support PCs and Macs. Space (at least in terms of PCI slots) is still the final frontier.

INBOARD/OUTBOARD

Two companies offer outboard hardware products that can play multiple VSTi virtual instruments or VST plug-ins simultaneously, either with a DAW or as a stand-alone unit, bringing VST to traditionally *non*-computer–based environments such as music performance or live sound mixing.

The Muse Research Receptor has 16 total I/O channels split among stereo analog (balanced TRS jacks), stereo coaxial S/PDIF, four USB ports, 8-channel ADAT Lightpipe out and a convenient front panel ¼-inch hi-Z input for guitar. Parameters can be edited by plugging in an optional VGA monitor and PS/2 keyboard/mouse or

Accessorize Your DAW

from a Mac or PC connected to Receptor.

Manifold Labs' Plugzilla ships with some 300 plug-ins and has 16 balanced XLR I/Os (+4/-10 dB, selectable), AES/EBU and S/PDIF digital I/Os, FireWire and USB ports and word clock sync. Two footswitch jacks add pedal control for virtual instruments. It includes PZView® software for connectivity to a Windows PC, Hot Knobs® parameter automation and Ethernet for direct Internet loading of presets, software updates and plug-ins.

Both systems are housed in two-rack-space boxes, feature up to 24-bit/96kHz operation and can be controlled via the front panel, MIDI or USB. Besides the advantage of reducing CPU load on a host computer while mixing, these units also open the world of VST into non-VST environments such as Pro Tools.

MORE POWER FOR (ALMOST) FREE
So far, all of the cool products mentioned in this article cost money; however, a number of affordable (meaning free)

Steinberg VST System Link

productivity boosts are available to the resourceful homebrew type who has access to another CPU—perhaps that machine you used before you upgraded to your current system. One such example is Steinberg's VST System Link, which lets a user simultaneously take advantage of the entire CPU and storage muscle of several computers regardless of platform. By using a single bit from an audio stream as a carrier for transport and sync information, audio data can be transferred over standard digital audio cabling (i.e., ADAT Lightpipe, TDIF, AES or S/PDIF) using VST software and ASIO hardware. VST System Link is supported in current ver-

sions of Nuendo and Cubase SX/SL.

On the Apple side, the Logic Node application for Logic Pro 7 creates a distributed audio network using two Macs running OS 10.3 or 10.4, with a 1GHz G4 or faster computer designated as the master and any number of node computers (G5 recommended) providing shared processing for Logic 7. Just connect the Macs using a standard Ethernet cable (Gigabit preferred), switch on the node in the Arrange window and you're ready to spread the CPU workload (plug-ins, virtual instruments, etc.) over several machines. The system is ideal for using a PowerBook as a sketchpad and then plugging into your main studio rig and continue working, but with a huge horsepower increase.

Wormhole2 from Plasq allows routing audio between machines on a network to take advantage of all your studio's processing power. For example, one could dedicate a machine for complex instruments or effects and route its audio back into your DAW; move audio between a PC and a Mac for the best of both worlds or share audio between laptops onstage. Wormhole2 is available for Mac VST and AudioUnits.

Beyond adding power, the right accessories can ease the production process. And little things—such as Contour Design's ShuttlePRO (with its programmable buttons and jog/shuttle wheel), Frontier Design's TranzPort wireless DAW controller or simply plugging a $10 USB gooseneck lamp into your keyboard for easier typing/naming/parameter entry in a dark studio environment—can make a difference without emptying your bank account. Digital devices may not offer the adventure of recapping an input module or the joy of hearing the difference when you swap a Sylvania for a Mullard 12AX7, but with a little customizing, you can replace digital's "one-size-fits-all" approach for a system that is tailored to the way you want to work.

MIX **ONLINE** EXTRAS

George Petersen is Mix's editorial director.

"Cubase has always been my creative companion"

Harry Gregson-Williams, film composer

Films like *Shrek II*, *Kingdom of Heaven* and *The Chronicles Of Narnia* wouldn't be the same without his original, evocative scores. Award-winning film composer and Cubase veteran Harry Gregson-Williams has provided music for blockbusters viewed by millions of film fans around the globe. And with projects as complex and demanding as a smash Hollywood score, Harry needs music production software that supports him creatively.

Everything begins with creativity.
And what does "Creativity First" mean to you?

'CUBASE HAS ALWAYS BEEN MY CREATIVE COMPANION, SO WITHOUT IT I'D FEEL A BIT NAKED. CUBASE SX3 IS AN AMAZING LEAP FORWARD, AND I SHOULD KNOW, BECAUSE I'VE BEEN USING CUBASE FROM THE MOMENT I STARTED COMPOSING SOUNDTRACKS ON MY COMPUTER. I CAN'T IMAGINE HAVING TO LEARN ANOTHER PROGRAM FOR ME, THERE IS SIMPLY NO BETTER TOOL FOR COMPOSITION.'

Cubase SX 3

"Chicken Run"   "Shrek 2"   "Spy Game"   "Team America"

Original score by Harry Gregson-Williams

Foley artist Marnie Moore at Berkeley, Cool's Fantasy Studios

Foley Recording

Film Sound's Misunderstood Art

BY BLAIR JACKSON

One of the most critical, yet underappreciated links of the film sound chain is Foley recording. You probably know the basics. It was named after the great Universal Studios sound man Jack Foley (see "You Don't Know Jack!" sidebar on page 54) and covers an incredibly wide range of sounds that are added in post-production: everything from car door slams to footsteps, to garment rustles, to jingling keys, sloshing water, furniture moving, sword hits: you name it. Basically, Foley is everything that isn't covered by sound effects or through the production track. Occasionally, the Foley department will also supply the base sound materials for effects editors.

And though the work may seem simple as compared to, say, recording the sounds of Sherman tank treads on location (an effects task), it's actually a very demanding and precise job that, when done well, adds immeasurably to the success of a film's soundtrack. Recently, *Mix* spoke with three of the best Foley artists in the business to get a sense of the demands and peculiarities of this important craft.

Originally from Radnor, Penn., John Roesch started out in acting but later got into filmmaking, even sharing a prize with some colleagues at the San Diego Film Festival in 1976. Stints at NYU Film School and the American Film Institute followed, "but after a while, I realized I didn't really dig

directing," he says. "Then one day, I got a call from somebody to work on sound for a film, just to help out. It turns out I was the only guy who had sneakers on and they needed some Foley...and the rest is history!" he says with a laugh. "I was lucky enough to work with some really talented supervising sound editors who gave me a lot of on-the-job training—Gordon Ecker Jr. being one and Chuck Campbell the other. They would be on the stage with me all the time, directing, if you will: 'Can you give me a little more scuff here?' 'Can you try that again but with a lighter touch?' And by osmosis and by doing it, I got better."

Roesch has been working in the business for the past 25 years—the last 12 at Warner Bros. Studios' facilities at The Lot in Hollywood—and in this time, he has been one of the busiest Foley artists in L.A., working on close to 300 films in every genre, including *Poltergeist, Trading Places, Gremlins, Fatal Attraction, The Fugitive, Schindler's List, Braveheart, Pocahontas, Twister,* all three *Matrix* films, *8 Mile, Black Hawk Down, Blade: Trinity, Collateral* and *Starsky & Hutch,* to name a smattering.

Marnie Moore, an independent Foley artist living in the San Francisco Bay Area, began her sound career working as a music engineer in conventional recording studios; she spent eight years at Russian Hill Recording. There, she first worked on various film soundtracks and encountered the leading Foley walker in the area at the time, Dennie Thorpe. "I started helping her out and I liked the work so much that a year later, I left the music business and went to apprentice for her," Moore says "We did a lot of schlepping of props back and forth between Fantasy [Studios in Berkeley] and Skywalker [in Marin]. I worked with Dennie for about four-and-a-half years, and it was both scary and amazing because she was working on some really big films—the second film I ever worked on was *Indiana Jones and the Last Crusade*—so I was terrified." Today, Moore usually works with fellow Foley artist Margie O'Malley.

Moore's credit list is also long and diverse, and includes such notable flicks as *Backdraft, Jurassic Park, Bugsy, The English Patient, The Sixth Sense, Boogie Nights, Rushmore, Lost in Translation* and the forthcoming Sam Mendes film, *Jarhead,* among many others.

In New York, C5 has been a leading sound editorial company for many years, attracting most of the top directors in the area. While the company's main offices are in Manhattan, its new Foley facility is across the Hudson in Northvale, N.J. There you'll find veteran Foley artist Marko Costanzo and his engineer

C5's Marko Costanzo, pointing, and engineer George Lara

of many years, George Lara. Both got their starts at Sound One in Manhattan, where they credit former owner Elisha Birnbaum as the person who got them into Foley. "He's the one who showed me how to bang two things together," Costanzo says, chuckling, "but I also learned most from people like Skip Lievsay, Ron Bochar, Phil Stockton and Bruce Poss. I worked for every sound editor in New York and had all of them asking me for every quirky sound they could think of. My attitude always was, 'Well, if that's what you want, we're going to figure out a way to get it.'"

Costanzo's staggering filmography includes more than 300 films during the past 21 years, including multiple titles from directors Woody Allen, Spike Lee, the Coen Brothers, Martin Scorsese, Barry Sonnenfeld and Ang Lee, and also such works as *The Silence of the Lambs, The Accused, Eight Men Out, Angels in America, Robots* and *Y Tu Mamá También.* His 2004 list alone will tire you out: *Eternal Sunshine of the Spotless Mind, Maria Full of Grace, The Ladykillers, Silver City, The Stepford Wives, The Manchurian Candidate, Vanity Fair, Closer* and *The Aviator.*

WHERE TO BEGIN?

What kinds of traits are common to Foley artists? Certainly patience and an incredible attention to detail. "One of the most important qualities of a Foley artist is the ability to focus in the here and now, kind of like a musician, because it's a performance in real time," says Moore. "Obviously, you have to have very, very good hand-eye coordination. You also have to have that kind of personality, similar to a recording engineer's personality, where you can put up with a lot of crap with a smile on your face because there's a lot of pressure in the business and there are people with strong personalities, so you have to be as accommodating as you can manage to be.

"You also have to be observant about the world

around you, enough to think, 'Does that car door sound too heavy?' 'What is the sound of those boots scuffing through those leaves?' You have to be someone who's paid attention to that kind of stuff. I've always been very interested in materials, and I'm also mechanically inclined, so I understand the relationship between size and weight. I've always been curious about what things are made of and what they might sound like."

A typical Foley stage usually comprises one or more "pits": areas that can be quickly converted to different surfaces as a film requires—from cobblestone to hardwood, dirt to linoleum. Some studios have areas that can be filled with water for scenes that require splashing or walking through puddles or mud. Usually adjacent to the Foley stage is a warehouse or storage area housing every imaginable prop. Besides the obvious different shoes, boots, walking surfaces, fabrics, zippers, locks, clasps, etc., there are often many different car doors (for opening, closing, etc.), tools, weapons, common household objects—anything that makes

noise. It is usually the Foley artists who track the inventory, which constantly grows because, one learns, Foley artists are inveterate collectors of *stuff*.

"My warehouse has been a work in progress over the 24 years I've been in the business," Roesch says. "We get stuff from *everywhere*. There's no garage sale I don't like going by, and all the people who are associated with me—like my Foley partner Alyson Moore, mixer Mary Jo Lang and recordist Scott Morgan—if they see something unusual at a garage sale or on the street, they'll pick it up and bring it in. Basically, you can't have too much stuff, as long as there's a place to put it and you can keep track of it. You never know when the weirdest little thing is going to come in handy for a scene."

"We're always looking for things that squeak or clank or make springy, sproingy noises," notes Moore. "If you go to a swap meet or garage sale, you're always putting your ear up to things and listening. The weirdest thing is when you listen to things in the grocery store—tap on vegetables and rustle them and crunch them a little.

I always try not to call too much attention to myself when I'm doing that. Dennie [Thorpe] once went to the grocery store and bought a bunch of fruit that was way past its prime and the cashier said, 'You know, we have *much* better fruit than this. I really don't want you to buy it.' And Dennie said, 'But I really want the rotten fruit…I *need* it.' I can't remember what film she was working on at the time."

ON THE STAGE

Warner's Hollywood Foley area—Stage F— was originally built in the mid-'70s, "and it's been updated a bit since then to give us a little more flexibility," Roesch says. "It used to have a series of pits—this one for gravel, this one for sand—but awhile ago, we pulled out the dividers and made one super-pit. There are still areas I can walk to—a little more sand here or gravel there."

At the new C5 stage, which Costanzo describes as "a big rectangular room with an 18-foot ceiling," there is a "dry side and a hot side, depending on what you're looking for. There's a main reflective wall, too, and, of course, we have all sorts of

You Don't Know Jack!

His name is synonymous with film sound effects, and his moniker is occasionally joined descriptively with words such as "pit," "stage," "walker" and "editor." But do you know who Jack Foley was? Not many people do.

Foley was born in Yorkville, N.Y., in 1891 and raised mostly in the Coney Island section of New York. He went to school with James Cagney and Bert Lahr, but after high school moved to California, working for a spell as a stuntman and a double in silent films before eventually settling in rural Bishop, which is located in the foothills of the Sierra, many miles northeast of Los Angeles. There, he raised his family and worked in a hardware store, while on the side writing film scripts. He also used his movie industry contacts to promote Bishop and the surrounding area as a great location for shooting Westerns and other films; this led to his being employed as a location scout. A little later, he held a number of odd jobs for Universal Studios in L.A., and it was while working at the studio's Stage 10 as a props assistant (among other things) that Foley got his first experience dabbling in the new medium known as "talkies." *Showboat* was his initial triumph, and it immediately made him an in-demand soundman.

The first sound pictures concentrated on dialog and music, but there wasn't much attention paid to other sounds. Foley was not the first person to separately record footsteps and add them into a film—that was done by several directors using 78 rpm records of footsteps. But it was Foley's idea to have the film projected on a screen on a soundstage and then to record sounds synchronized to the actor's movements. He was also the first to pay attention to the differing qualities of footsteps on film—varying the surfaces he walked on, using different shoes, etc.—and mimicking the sound of rustling fabric and other effects.

"Jack's technique was to record all of the effects for a reel at one time," commented director George Pal many years ago. "Jack added the footsteps, the movement, the sound of various props—all on one track. He used a cane as an adjunct to his own footsteps. With that one cane, he could make the footsteps of two or three people. He also kept a large cloth in his pocket that could be used to simulate movement."

Part of what Foley brought to recording, too, was a certain attitude. As his colleague Joe Sikorsky once noted, "Jack emphasized that you have to act the scene. You have to *be* the actors and get into the spirit of the story the same as the actors did."

Most of Foley's work through the years went uncredited—there was no title in those days for "Foley artist"—but he worked on many popular films during the years, from the original *Dracula* in 1931 to Stanley Kubrick's epic *Spartacus* in 1960. The latter film is the source of an oft-told tale of Foley's prowess. The story goes that Kubrick was unhappy with the sound of the Roman legions marching in one scene and was set to order a costly reshoot involving hundreds of extras. When he heard about the problem with the sound, Foley went on to a soundstage with a few fellow "walkers" and a set of jingling keys to simulate the sound of clinking armor and single-handedly saved the scene, eliminating the need for a reshoot!

Foley died in 1967 after working on literally hundreds of films and walking, by his own estimate, 5,000 miles doing film footsteps. His name will live through sound history—and deservedly so.

—*Blair Jackson*
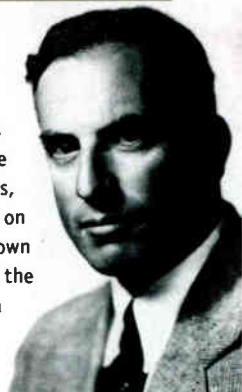
foam and cushions and other things that can affect the acoustics in the room.

"There have been a lot of changes in the way Foley is recorded through the years, and one of the trends is toward bigger pits," he continues. "In the old days, you'd commonly have a bunch of three-by-three surfaces [for walking], but now with bigger spaces, there's not as much walking in place. After all, the actors [on screen] aren't walking in place, so the sound should move a little bit. Before, the engineer would make various adjustments to create that effect; now, it's more complementary between [the artist] and engineer."

Not surprisingly, the equipment that is used to capture Foley has also changed through the years—recording media more so than the microphones.

"Early on in my career," Roesch says, "everything was done to mag, and if we wanted to get artsy, we'd fly something onto ¼-inch and speed it up or slow it down. Then the next step was 24-track recording. The film business is usually at least 10 years behind the regular recording business, so we didn't get to that point until about the mid-'80s. We used Dolby

Behind the scenes at C5 Foley, where noisemakers and everyday objects are stored for future use.

A mostly, then SR. The beauty of 24-track, of course, is that you had a lot more information available to hear back at one time versus mag, where you could maybe have 6-track. Then, in the early

to mid-'90s, you're getting into digital audio workstations. We used a Fairlight for many, many years; in fact, my feeling is that until Pro Tools came out with HD, the Fairlight was a much better machine.

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But we switched to Pro Tools when HD came out."

"It has been such a wonderful experience to go through the changes

Alyson Moore and John Roesch in the moment, in the Foley pit at Warner Bros.' Studios The Lot

from mag through to digital," echoes C5 engineer Lara. "[At Sound One] in 1986, we used two 6-track magnetic recorders and a stripe recorder at the same time; the stripe recorder enabled us to bounce sounds and move them into sync with picture. In 1990, we moved to the Sony digital multitrack and that gave us 22 tracks instead of the 12 we had on the mag, so that was a step up. But we encountered the problem that we had a lot of 'runaways' [where the multitrack loses the timecode], so that created some problems.

"Then we started to explore different digital platforms like the [Doremi] DAWN, Sonic Solutions and Pro Tools. When we first got into Pro Tools [at C5], it was still very quirky because it seemed like it was based for music, not film at that time, and it used to take too much time for it to lock up to picture. In 1995, thanks to Akai, we were able to cross from analog to the digital domain, and we never looked back. Now, we use Pro Tools|HD, which is a great mixing, editing and recording platform."

As for microphones, "I think we might do it a little differently in the Bay Area than in L.A. or New York," Moore asserts. "For years and years, we've been using Klaus [Heyne]–modified Neumann U87s for almost everything. Both Fantasy and Skywalker have those mics, and I just love them. The preamp was modified so

they're much higher output, so we can record a tiny cloth that's very quiet without getting too much noise.

"We often like to get two perspectives so we'll use two mics: one close and one far away," she continues. "With the two engineers we work with the most—Ben Conrad and Frank Rinella—one likes closer sounds better and the other likes more distance in the shot. It's all a matter of taste. They're both great engineers."

Lara says that at C5, "We use different microphones for different types of things, but I mainly use the shotguns—the 81 Neumanns; I'm very happy with them. We use four of them. If Marko is on the exterior pit, we'll have one mic [pair] on the pit and one on the other side of the room. So we'll have two primary mics and two secondary mics, and then we also have another one mounted—the Schoeps stereo small-capsule [mic]—which gives us more ambience. By having all these mics mounted on both sides of the room, it makes it much easier to get different perspectives on-the-fly while recording. On some close-ups, where there's also going to be a very detailed sound out front, I might use three different mics: left, center, right. I'll make the two Neumanns a stereo pair, figure-8, and then use one of the Schoeps small-capsule for the center to get a fuller sound and record it on three tracks."

And down at The Lot, Roesch and his colleagues are mostly using KMR 82 shotguns as close mics, with a Neumann U'67 as a room mic. "The old thinking

was to do everything pretty close-miked," Roesch says. "Some people used to mike directly behind the [Foley walker]—six inches to a foot!—because that was going to get 'good signal.' But what you really got was a huge bashing footstep that had no detail to it. But technology has changed that. Now, [the mic will] typically be between three and six feet away on a mic stand, in front and/or to the side, but only about 15 degrees or so. And, depending on how resonant the surface is, we might have it up on something that will decouple it from the surface it's sitting on.

"We'll use a lavalier mic from time to time—an ECM 50—and that's for some unusual effects," he continues. "We can put down a shooshy, zuzzy Duvatyne material and we can spin the mic with our hands on it in a circle and create the feeling of wind or even fire if you spin it a different way. We're definitely getting more creative all the time."

EXPANDED FOLEY

And this coincides with evolutionary changes in what exactly constitutes Foley. Roesch says that when he came into the business, "there was an old guard [of Foley artists] that said, 'Okay, we'll do some footsteps here, some key jangle there, but we're not going to do a glass break, we're not going to do a body fall, we're not going to do some rain effect on a window.' It was never considered that Foley could fill those holes; they came under the category of effects. I'm not being critical here, that's just the way things were.

"But around the time [*Star Wars* sound designer] Ben Burtt came along, things started to change in film sound. From that point forward, you had a loosening of the grip on rules. And there were some of us who didn't know there were limits to what Foley should do, and we did our own thing and had a lot of fun with it and, I guess, in the process helped expand the role of Foley a bit. Now, of course, it wouldn't be at all unusual for someone to request some rain pitter-pattering on a window."

Though much of the Foley stage's work continues to be representational audio, walkers are also increasingly called upon to contribute to sound effects—their sounds are often combined creatively by editors or, later, re-recording mixers. It's usually up to the supervising sound editor to make that call. "On *Schindler's List*, where the train was braking to a stop, [the effects editors] cut the sound of the couples and we did some of the

squeals—this great steel-on-steel sound—on the Foley stage," Roesch says. "We knew we were part and parcel of that.

"The amount of CGI in films has also affected us," he adds. "Is it huge starships cruising by? Well, there's probably not much Foley there. But if it's stuff like *T2* or *T3* and you've got the robot liquefying and coming through a screen, that's a decision point: Should we do that in effects or as Foley? In the '80s going into the '90s, a lot of things moved from effects into Foley, and now the pendulum has swung back

a little bit. Foley budgets are smaller on some films now, and where we had 'x' days previous, you can lop off two to four now and you will not have as much done in Foley or as much Foley time, except for large-budget films."

Moore agrees: "The amount of time was established a long time ago when we used to work

Marnie Moore worked on Sam Mendes' upcoming film, Jarhead.

with 1,000-foot reels, which were about 10 minutes long," Moore says. "Generally, you would figure that for a full-coverage film, you have one day per 1,000-foot reel. That was pretty good, but unfortunately, we usually don't get that anymore. Now they have digital reels, which are like double reels basically, but they still think we should be able to do a reel in a day!"

Moore works on huge films but still contributes to lower-budget independent features. She says, "Not everyone has realistic expectations. If you're working on a low-budget movie with someone who's really experienced, that's the best situation because they know what they can and can't use and how much time it's going to take. We work as a team and figure out how to get the best sound possible for the smallest amount of money. But that's often not the case. You'll have people who aren't very experienced and they'll want you to do full-coverage Foley in five days on a feature-length film. They don't understand that Foley can be fairly slow and tedious. So then they start backpedaling and the quality usually suffers."

Minor complaints aside, these Foley artists clearly love their jobs: They love the variety of the projects, the mental and physical discipline involved, the camaraderie of sound professionals up and down the line and the satisfaction of contributing to (hopefully) great art and/or entertainment.

"It's always changing," says engineer Lara. "One day we're working on a Woody Allen film and maybe that's a 'walkie-talkie' with a lot of footsteps and 'cup-downs'—glasses and utensils and things like that—because he's always shooting in restaurants or at dinner tables. And then the next you're on *The Hulk* and it's a whole other set of challenges and things that are required. It's *never* dull."

Blair Jackson is Mix's senior editor.

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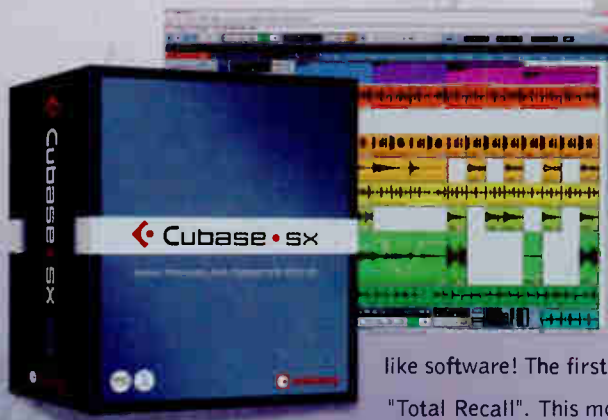
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Manage That

BY STEVE LaCERRA

t wasn't too long ago when "snapshot recall" on a live console meant that you took a Polaroid photo of the desk after the soundcheck was over. Today, snapshot or scene store and recall are standard features on virtually every digital console. Resetting the entire desk at the push of a button makes digital consoles a natural choice for multi-act tours, where each engineer can quickly and accurately access settings for their band with a minimum of soundcheck time, as well as for theater productions, where each act requires reconfiguration of audio I/O. Along with snapshots, most digital desks offer extensive internal processing, such as dynamics, multiband EQ, polarity reverse and delay on every channel; onboard effects processing with complete factory and user libraries; busing and auxiliary output options; and the ability to control any

Digital Consoles

Take Control

To the Next Level

to install a large desk at front of house. Further, placing converters at stage-side shortens the analog signal path for optimum audio quality.

Just about every digital console incorporates some means of storing data, whether on a memory card via MIDI SysEx or direct connection with a computer running proprietary software—all of which means that engineers can travel with their programs and have a favorite console provided locally, reducing the tour's transportation costs.

This month, *Mix* surveys live sound digital consoles. If you're considering purchasing a digital desk for your next tour, make the following buyer's guide the first stop in your shopping spree.

DiGiCo's (www.digiconsoles.com) D5 Live 56 digital mixing system comprises a 64-channel work surface, a DiGiRack stage interface containing 56 A/D and eight D/A converters, and a second local DiGiRack residing next to the console, providing 56 external I/Os for inserts, effect send/returns, local monitoring and playback. The D5 Live is split into four sections of eight channels, each with an LCD touch screen. The center of the desk incorporates a "selected channel" section with dedicated hardware for channel control and an onscreen frequency display showing the EQ curve. Two master banks provide 16 faders that function as a matrix, group or aux out masters. Features include expansion slots for additional DSP and optional effects processor, snapshot recall, MADI port and a modem port for diagnostics and software updates. MSRPs: D5 Live 56 EX (40 analog, 16 digital I/O), $175,874; D5 Live 112 EX (with a second stage DiGiRack), $202,231; and D5 Live 112 FMX (monitor/FOH package), $352,436.

Featuring 40 mic/line inputs and 24 outputs, the D1 Live 40's local DiGiRack enables it to function as a direct replacement for an analog console by using existing copper multipair from the stage. The D1 Live handles 64 mono/stereo channels and can be expanded to 160 channels, with access to 224 inputs, 224

DiGiCo D1 Live DiGiRack

audio channel via any control strip.

Though many digital desks have onboard audio I/O, more advanced systems employ outboard AD/DAs. Removing I/O hardware from the control surface allows manufacturers to cram an incredible amount of control over a large number of channels into a small package—16 or 24 faders control as many as 192 channels in several layers and a single dedicated channel "strip" facilitates control over a selected or active channel. This is a boon for small venues that are hesitant to give up seats

Live Mix

Harrison Trion

outputs and 40 buses. The D1's six independent effect processors generate reverb, delay, pitch change. multiband compressor and 28-band graphic EQ. Sixteen IPCs (insertable processing channels) include 6-band parametric EQ, compressor and delay, and may be inserted across any input or output. The D1 Live 48DP (Dual-Purpose) system extends the Live 40's facilities with a total of 48 mic/line inputs and 16 IPCs. System packages start at $68,718.

Based around the D-Show mixing console, Digidesign's (www.digidesign.com) VENUE system features an expandable DSP mix engine. A standard VENUE includes 48 mic inputs and can run 64 input channels with 24 graphic EQs and enough DSP power for dozens of plug-ins. All channels feature a remote-controlled head amp, delay, 4-band parametric EQ with analog emulation mode and dual dynamics processors. VENUE includes D-Verb, delay, pitch and dynamic plug-ins, and supports plug-ins from other manufacturers. The Assignable Channel Section (ACS) enables adjustment of all parameters for any selected channel. Optional sidecars may be added to increase fader count.

VENUE's 19-inch Stage Rack provides analog audio I/O for stage signals, accommodating up to 48 remote-controlled mic/line preamps and A/D converters. The FOH Rack contains the D-Show mix engine and furnishes audio connectivity at the mix position. Automation includes snapshot store/recall (999 scenes), MIDI program change and response to incoming footswitch events or MTC cues. VENUE can be interfaced directly to Pro Tools using Digidesign's FWx card or TDM Record Option. A standard VENUE system is $62,995.

Jointly developed by Harrison (www. harrisonconsoles.com) and Showco, the LPC's extensive automated input selection system greatly reduces the number of active channels required for a given section of a performance, while proprietary IKIS™ event-based automation provides instant recall and reset of every function on the console (up to 10,000 setups). The LPC provides three mic and one line input per channel, motorized faders and pots, and 5.1 panning. Up to 32 mix buses or aux sends are available, as are 32 matrix outs. Audio I/O is 24-bit, while internal signal processing uses Harrison's 40-bit Wide Pipe™ path. A TFT interface, alphanumeric display on all faders and 16 remote VCA faders help users manage shows with large numbers of inputs.

Designed with a small footprint and employing the company's Wide Pipe signal path, Trion runs on Harrison's IKIS platform and features built-in 15-inch monitors for a dedicated view of channel settings. Harrison's PreView™ waveform envelope display gives the operator a 20-second-long waveform view of any audio source. Trion can incorporate from 32 to an unlimited number of dual input channels, each with 16 or 32 aux sends and 24, 48 or 96 bus assignments (dependent upon configuration). Channel controls and assignments are instantly accessible as vertically oriented strips or "folded out" across eight faders for true knob-per-function adjust-

Digidesign VENUE

ment. The DTC™ (Digital Tools Card) adds a 20-second loop recorder and 32 digital bus limiters with look-ahead intelligence—becoming a gateway to DSP plug-ins. Adding a portable 8-fader panel and screen, a remote operator can control FOH or monitor mixes from anywhere in the venue.

InnovaSon's (www.innovason.com) Sy80 provides 80 inputs, 80 outputs and 48 mix buses operating at 48 kHz/24-bit, with 32- to 40-bit internal processing. Fader-per-channel architecture provides simultaneous access to all 80 channels. In addition to the motorized fader, each channel has a dedicated LED meter and Cue/Select/Mute buttons. A Channel Control section provides instant, dedicated control over channel settings, while a 15-inch retractable screen displays channel information. InnovaSon's XFAD™ expansion fader combinations allow an engineer to group several sources for control under one input fader. The Sy80 is controlled by Sensoft 8 PC-compatible software for editing and

InnovoSon Sy48

archiving of up to 1,000 pages per show. Export and import functions allow file transfers from console to PC and vice versa.

Housed in a compact package, Innova-Son's Sy48 provides 64 channels with 48 local mic/line inputs, 16 local line inputs and 16 local line outputs for aux, inserts and bus sends. The Sy48 maintains InnovaSon's fader-per-channel architecture, with Level Meter, Mute, Cue and Select buttons per channel. Faders are user-configurable as inputs, VCAs, groups, buses, aux, XFAD, matrix or crossfaders. Console features include a central control panel for channel parameters, 12-inch fold-down screens and stereo monitoring with PFL, AFL and APL (After Processing Level) listening on headphones or via allocated outputs. The Sy48 includes InnovaSon's Sensoft management software, facilitating instant recall of console configurations; snapshot automation with manual or MIDI synchronization-enhanced Q/Page display and control for theater applications; and offline programming for show preparation.

Lawo mc² 66

Lawo's (www.lawo.de) mc² 66 digital mixing system comprises a mixing surface with integrated control system, HD Core DSP and routing matrix, and DALLIS audio I/O. Control surface size may be configured via 8-fader modules with systems from 16 + 8 faders to 48 + 8 faders, controlling up to 192 DSP channels and 144 mix buses. All console surface modules are "star-linked" to the control system so that configuration may be changed during operation without unwanted noise or data loss. Audio processing is performed at 48 or 96 kHz, with 24-bit resolution and 40-bit internal processing. Each input channel offers dynamics with look-ahead function, delay, insert, panning up to 7.1 and 32 aux sends. The DALLIS modular I/O system can be loaded with any combination of mic/line, AES, serial or SDI interface boards and up to 80 I/O per system. Comprehensive snapshot options store control panel assignments, DSP settings, matrix routing and I/O parameters.

The CueConsole from LCS (www.lcs

LCS CueConsole

audio.com) is a modular control surface that works with the company's Matrix³ digital audio mixer. The 48kHz/32-bit system supports up to 280 inputs, 512 outputs,

256 buses and a 256x512 matrix controlled by Space Map®, the multichannel panner standard with every LCS system. A CueConsole/Matrix system incorporates dedicated hardware, negating the need for a computer while running the show. Automation features one-button capture of all controls and individual wait and fade time settings for each fader, panpot and matrix. Additional features include unlimited presets and multiplatform software support (Mac OS X, Windows XP Pro, Linux). Options include built-in digital multitrack playback and a Variable Room Acoustic System. Pricing is dependent upon configuration; a FOH system with 48 inputs, 16 outputs, I/O processing and 32 motorized faders starts at around $110k.

Mackie's (www.mackie.com) TT24 is a midsized, 24-bit/96kHz digital console optimized for live sound. Each of 24 mic/line channels includes a 100mm motorized fader, rear panel XLR/TRS balanced input and TRS insert. Eight additional line inputs include 4-band EQ and can be stereo-linked (as can the mic/line inputs). A Select Follows Solo function automatically brings a soloed (or selected) channel to the desk's QuickMix section for fast adjustment of EQ and dynamics. Three internal 31-band graphic equalizers can be used to process left, right and center outputs. Rear panel XLRs are provided for 12 aux sends, L/R and mono/center outputs. Digital connectivity includes ADAT optical, AES/EBU, S/PDIF, word clock and MIDI I/O. A USB port links the TT24 to a PC running Mackie's TT Control software for control over every desk parameter. Two expansion card slots facilitate a variety of I/O options. Pricing starts at $7,199.

LightViper Update

Lifechangers Church • Chicago, IL
Installation by Audio Analysts

The scope of the project was to design and build a state of the art Vertec line array system with the installation of 2 projectors and screens for their video staff. The audio system was to have a three way split. One for FOH, one for a future monitor desk and one for broadcast.

"We chose Fiber Plex because of the flexibility. We didn't know what the format would be for future broadcast or monitoring but, because of the simultaneous analog AES/EBU signal we could do what ever we wanted at a later date and be compatible with any desk they would put in. We also realized that we could save the client a substantial amount of money over copper and get much better performance.

Buddy and the guys were great and were at our beck and call throughout the installation. They stand behind their product and gave us a guaranty on performance. Manufacturers' support is very important to us. We won't work with anyone who won't stand behind their line. Besides I like those guys.

"Right now LightViper is the only system that does what I want it to do at the price I want."

—*Robert M. Langlois, Audio Analysts, Colorado Springs, CO*

The LightViper System

LightViper is the ONLY digital fiber optic snake system that's light enough to be a carry on! It gives you limitless lossless splitting and routing options, built in phantom power on every channel, 24bit/96kHz sampling, balanced/unbalanced analog and AES/EBU digital outputs on every channel and no need for DI's – ever!

LightViper is as transparent and easy to use as any snake you've ever used – plug and play – that COSTS FAR LESS than other digital snake systems. One that lets you focus on your show – not the snake.

Its 1/4" fiber optic cable can be run more than 1.25 miles with no loss and no ground loops, while standing up to tough military standards. Now, the only way you'll encounter that scenario is on a USO tour, but the point is LightViper can handle ANYTHING that's thrown its way and still come out shining.

The LightViper Advantage

- 32 x 8 fiber optic snake
- Cable runs over 1.25 miles with no loss
- Rugged fiber cable smaller in diameter than standard mic cable!!
- Native 24 bit / 96 kHz - 48 kHz capable
- Phantom power on every channel
- High quality Neutrik® connectors
- Optional lossless 3-way split of all 32 channels on stage end
- Simultaneous analog/AES3 digital outputs on all 32 channels
- Heavy-gauge steel construction
- Extended range and flexibility means limitless routing options

- Flat frequency response and better than 100 dB dynamic range– delivers true, crystal clear sound
- Every channel accepts balanced or unbalanced connections... No need for DIs!
- Rack mount and wall panel options available
- Perfect for installations of all kinds (Houses of Worship, Clubs, Corporate), broadcast and for touring sound

The LightViper VIS-4832 Digital Snake Head   NEW!

The **VIS-4832 Digital Snake Head** is the newest member of the LightViper family. It features 16 AES3 inputs (32 audio channels) via (2) 25 pin D connectors and 4 AES3 returns (8 audio channels) via (1) 25 Pin D connector with simultaneous line level analog outputs via a second 25 pin D connector. Natively, the VIS-4832 will pass 96KHz digital data. However, by synching the VIM 1832 (at front of house) with a 48KHz word clock, the system will pass 48KHz digital data as well.

The VIS-4832 also offers the option of two additional fiber outputs, providing lossless digital splitting of all 32 inputs for use in monitor mixes and/or broadcast or recording mixes. These optical outputs must be used in conjunction with a VIM 1032 at the tail end for each split output.

VIS-4832 Applications:

Mic Pre-amp snake: Provides a perfect solution for transporting 32 channels of digital outputs of remote preamps to a digital console.

Digital Drive Snake: Gives you a complete 32 channel drive snake. The VIM 1832 at the tail end puts out both analog and AES3 digital signals, so you can address amps that have digital inputs and amps that have analog inputs simultaneously.

Digital Audio Transport System: Connecting the outputs of a digital console to the inputs of the VIS-4832 allows you to create a digital audio transport system. Example – If you need the identical outputs of your digital console to route to stage, amp room #1 and amp room #2, you simply use the VIS-4832 on the outputs of the console and route these signals via fiber to one VIM 1832 (stage) and two VIM 1032 (one located in amp room #1, one located in amp room #2).

sound at the speed of light

LightViper
FIBER OPTIC AUDIO SNAKE

Mackie TT24

Stagetec's (www.stagetec.com) AURUS provides access to as many as 300 channels via up to 96 channel strips. Microphone inputs feature the company's 28-bit TrueMatch A/D conversion, while line inputs feature 24-bit TrueMatch A/D conversion. AURUS operates at sample rates of 44.1/48/96 kHz, with 40-bit internal processing. A central channel panel provides all settings typically needed during normal operation. AURUS works with Stagetec's

Stagetec AURUS

NEXUS audio network. DSP is integrated into the chassis of the NEXUS STAR, a rackmount unit housing all audio processing components and provides routing (as required by the user) for analog mic/line input and line out or a variety of digital I/O. Two different channel types (full and short) adapt available DSP resources to project-specific applications. PC-compatible software facilitates automation for compete store and recall of all system settings on- or offline, though a computer is not required for use during production. Pricing is dependent on configuration.

Yamaha's PM1D (www.yamaha.com/proaudio) Version 2 system comprises a CS1DV2 control surface and DSP1DV2 or DSP1DV2-EX rackmount processing engines, both of which deliver 28-bit A/D and 27-bit D/A conversion. The CS1DV2 has four 12-channel assignable input control sections; the console's Flip switch provides access to an additional 48 channels. Controls for the selected channel are accessible via analog-style controls with a color LCD showing channel settings. The DSP1DV2 engine supports 56 channels, while the DSP1DV2-EX runs 112. Output complement includes two main stereos, 48 mix buses and 24 matrix, each with 6-band parametric EQ, delay and compressor. Inserts and direct outputs are available for all channels, while 12 DCA groups simplify complex mixing systems.

Version 2's Add-On Effects include a studio-grade compressor, vintage EQ, tape-saturation simulation and Yamaha's Reverberator REV-X. The PM1D V. 2 provides data backup via USB or serial port, as well as PCMCIA card. The CS1DV2 control surface starts at $66,000; DSP1DV2 at $17,400; and DSP1D-EX at $19,500.

Yamaha's PM5D ($49,800) and PM5D-RH ($67,000) come in two basic configurations: The PM5D includes 48 analog XLR/TRS inputs with manual mic pre's, while the PM5D-RH offers 48 analog XLR mic inputs with recallable gain. A 24-channel work surface mixes up to 64 inputs. Using the PM5D's internal digital patchbay and four rear panel mini-YGDAI slots, a user can instantly scene-switch between totally discrete stage setups of up to 130 inputs. Separate stereo and LCR buses are furnished, along with 24 submaster or aux send mix buses, eight DCA faders and an 8-output mix matrix. Eight independent SPX2000-class multi-effects processors can
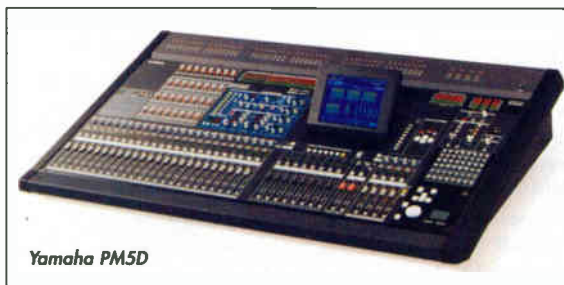
Yamaha PM5D

be patched into any channel. The PM5D supports surround panning from 3.1 to 6.1, and has a 500-scene memory. The PM5D is ready for Yamaha's Add-On Effects and includes the REV-X Reverb. Other effects such as the Compressor276, Compressor260, EQ601 and Open Deck can be obtained by purchasing the Channel Strip and Master Strip packages.

The company's DM2000 ($18,600) controls 96 channels in four layers of 24 at any sample rate up to 96 kHz with 24-bit resolution and 32-bit internal processing. Twenty-four channels of balanced XLR mic/TRS line-level input feature phantom power, trim control, pad and balanced insert send and return. Additional inputs may be added via six rear panel mini-YGDAI card slots. A Selected Channel section provides dedicated encoders to adjust channel parameters. In addition to independent compression and gating on each channel, six 31-band graphic EQs may be patched to any desired signal path. Thirty output buses (eight subgroup, 12 aux, L/R stereo and four stereo matrix) may be assigned to any output connector. Eight onboard effect processors can be fed from auxiliary buses or inserted directly into input channels. All DM2000 V. 2 inputs, outputs, effects and inserts can be assigned to any of the console's channels via internal digital patching. The DM2000 features snapshot recall, complete DAW control, MMC and Yamaha's Automix dynamic automation. Studio Manager V. 2 software places control of every desk parameter into a PC or Mac. The DM2000 V. 2 also offers 96kHz effects, access to Yamaha's Add-On Effects package and memory card–based data management.

The DM1000 V. 2 ($5,599) handles 48 channels of audio at sample rates up to 96 kHz/24-bit with 32-bit internal processing. The DM1000 is equipped with 20 analog XLR inputs and 12 analog XLR outputs. Two mini-YGDAI slots allow the DM1000 to be used with ADAT, Tascam or AES/EBU digital formats, as well as additional analog I/O. Channels are organized in three layers under 17 touch-sensitive motorized faders. Eight auxiliary buses can be patched anywhere in the system, and patch setups can be stored in the onboard library for instant recall. In addition to scene recall, the board features Yamaha's Automix Automation and Studio Manager software for computer control and management. The DM1000 can be used for DAW control over Pro Tools, Logic Audio and Nuendo. A mini-joystick, multichannel routing with bass management and independent speaker delay facilitate surround mixing. ∎

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

think
inside the box

From the maker of the world's first digital audio product, and whose legendary reverbs are found in the world's best studios, comes the world's first stand-alone reverb that's also a hardware plug-in: **the MX200 Dual Reverb/Effects Processor.**

All the control and automation you want from a software plug-in, with the uncompromising quality you expect in a dedicated hardware box from Lexicon®.

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MX200 Dual Reverb Effects Processor

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World Radio History

10th Annual
Mix L.A. Open

ALL PHOTOS BY PAUL LESTER PHOTOGRAPHY UNLESS OTHERWISE NOTED.

The players get ready to move out to the course.

Second place goes to Absolute Music (L-R): Ryan Andrews, Joe Milla, Johnny Hagan and Jeff Benninghofen.

The weather couldn't have been better for the 10th Annual Mix L.A. Open, held June 13, 2005, at the Malibu Country Club. Winning for the third out of four years was the Artist Tribe team, with a score of 55. Second place went to Absolute Music and third place went to Record Plant. The Closest to the Pin contest was won by Tomas Sidenfaden. Josh Morton was the Longest Drive winner, and Mike Greene captured the Longest Putt Award.

Through the generous support of the event's sponsors, the Mix L.A. Open was once again a huge success. Proceeds from the golf tournament and silent auction will go to the House Ear Institute's Sound Partners program and the Sound Art program of Los Angeles. For more information and photos, please visit www.mixfoundation.org.

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Tomas Sidenfaden receives the Closest to the Pin Award from Honorary Chairman Ed Cherney (l) and Mix magazine's associate publisher Erika Lopez.

Artist Tribe wins again! (L-R) Ed Cherney, Erika Lopez, Andy Greene, Mike Greene, Mix Foundation president Hillel Resner and Dusty Stump; missing from the foursome is Sydney Miller.

Players warm up before
the big event!

Ed Cherney (L) and Erika
Lopez (R) present Josh
Morton with his award
for winning the Longest
Drive contest.
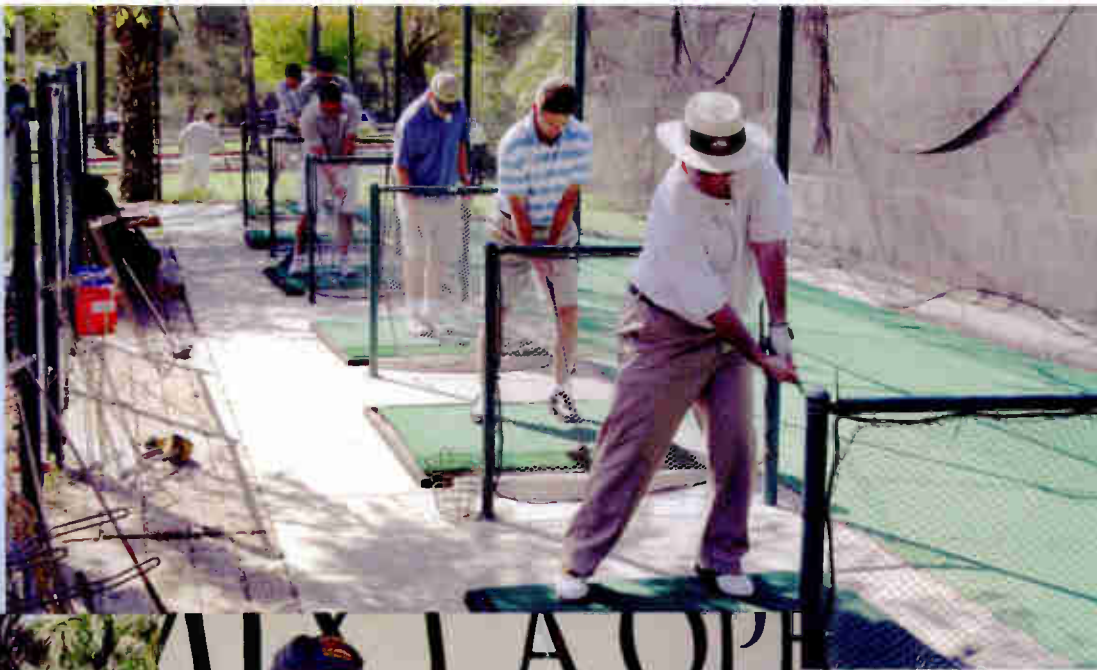
(L-R) Gary Lux, Erik St. Anthony and
Bob Michaels of the 5.1 Entertainment
Group team

Team Record Plant's (L-R)
Kenny Gradney, Paul
Barrere, Dan Suter and
Tony Braunagel take
home third place.

Nathaniel Kunkel
relaxes before the
tournament.

The Best Effort Award went to Shure
Inc.'s team of (L-R) Al Hershner, Bart
Chiate and Tom Krajecki.

PHOTO MAUREEN DRONEY

The 2005 TECnology Hall of Fame

Innovations That Changed the Pro Audio World

BY GEORGE PETERSEN

A year ago, the Mix Foundation for Excellence in Audio, which produces the annual Technical Excellence & Creativity Awards, announced the TECnology Hall of Fame. It debuted by honoring 25 innovations that shaped the course of pro audio during the past 125 years. The task of selecting so few from audio's vast heritage was difficult, yet with the help of an elite committee of 50 industry leaders, we settled on the first 25 inductees, available at www.mixonline.com/TEC20.

This year, we've added 15 more honorees from 1913 to 1995. To keep these in historical context, inductees must be more than 10 years old, hence the 1995 cutoff. So if your personal fave isn't included, look again next year; the competition can be fierce. And, as always, your comment/suggestion/corrections are welcome. Drop us a line at mixeditorial@primediabusiness.com. Meanwhile, let's take a step back and explore the roots of pro audio.

EDWIN ARMSTRONG
Regenerative Feedback (1913), Superheterodyning (1918), FM (1933)

Born December 18, 1890, Edwin Armstrong developed an interest in wireless technology as a teenager. He later entered Columbia University's Electrical Engineering program, where he investigated practical applications for Lee De Forest's Audion triode tube. In 1913, in an effort to improve radio reception, Armstrong fed the output of the triode back into its input, a process he called "regenerative feedback." It greatly amplified the signal and, if enough feedback was applied to the input, it also acted as an oscillator. Armstrong eventually raised the funds to patent the circuit, which became the basis for today's continuous-wave radio transmitters.

In 1918, he invented superheterodyning, which used the principle of heterodyning (combining two frequencies to create new signals equal to the sum and difference of the original pair), and applied it to radio receivers. Ironically, one of his most notable developments was frequency modulation (FM) in 1933, which didn't make its mark until decades later. To promote the technology, he built the first FM radio station in 1940, but despite the band's improved sound, he was unable to convince networks and broadcasters to support FM. After years of legal battles and despondence over FM's lack of success, he committed suicide in 1954.

WESTERN ELECTRIC/BELL LABS
Electrical Recording (1925)

No technology breakthrough in audio recording created such a stir as the development of the electrical recording process. Essentially, this revolution marked the demise of acoustic recording, whereby audio signals entered a sound horn pointed at the source and sound waves within the horn vibrated a diaphragm attached to a needle that etched a groove in the wax record master. In the early 1920s, the threat of competition from the fledgling radio industry sent record companies on a quest to improve disc quality.

Although unveiled in 1925, electrical recording resulted from several successive technologies, ranging from Western Electric engineer Edward C. Wente's development of the condenser mic in 1916 to the availability of improved carbon mics—such as Western Electric's venerable model 1B. But the breakthrough came with Henry C. Harrison and Joseph P. Maxfield of Bell Labs, who created a matched-impedance recorder that had a bandwidth of 50 to 6k Hz—greatly improved from acoustic system's limited 250 to 2.5k Hz range. After paying a $50,000 fee (plus a per-disc royalty), record companies invested in the technology with new names such as Columbia's "Viva-Tonal" and the Victor Talking Machine Company "Orthophonic" (VE, or Victor Electric) process.

True to form, many critics hated the electrical process, claiming it brought out individual instruments, thus destroying acoustic recording's smooth ensemble sound; other detractors believed that this new technology sounded harsh and unnatural. (Sound familiar?) Meanwhile, engineers with years of experience working with acoustic horns were faced with a need to know and understand electronics. But along with improved 78 players in the home and other record labels joining the electrical recording revolution, there was no turning back. Within a few years, acoustic recording had completely disappeared and the era of modern recording had arrived.

HARRY F. OLSON AND LES ANDERSON, RCA
Model 44 Ribbon Microphone (1931)

When engineers Les Anderson and Harry F. Olson joined RCA in 1928, talking motion pictures were the rage,

Bing Crosby (left) and Bob Hope working both sides of an RCA 44B

radio was king and sound reinforcement systems were coming into their own. However, mics with any kind of true pattern control were nonexistent. Noting the earlier research of some Siemens engineers on replacing speaker voice coils with a metal ribbon design, the pair applied the ribbon approach to microphones, first with field coils and later with permanent magnets, resulting in the first ribbon mics (the PB-17 and PB-31), which offered the advantage of a bi-directional pickup pattern.

In 1931, the PB-31 was replaced by the 44A, which was enormously successful and highly regarded for its smooth tone and defined pattern control, which not only reduced the effects of reverberation on soundstages, but also offered higher gain-before-feedback in live sound applications. The 44A was updated with improved magnetic material in the 44B/44BX models. RCA also launched the unidirectional 77A/77B models and the multipattern 77C/77D mics. Nearly three-quarters of a century later, all of these RCA ribbon models are still hard-working audio tools prized by engineers worldwide.

ALTEC LANSING
604 Duplex Speaker (1944)

Altec Lansing's famed 604 was not the first Duplex® coaxial speaker; that honor goes to the company's 1941 model 601, which mounted an HF compression driver onto the back of a 12-inch woofer with a hole cut into the center of the magnet, forming a throat for a small multicell horn in the center of the cone. However, it was Altec Lansing's model 604 coaxial that created a splash that continues to this day. The 604 was based on a 15-inch woofer with a 3-inch voice coil within an Alnico V permanent magnet, combined with a large HF driver and a six-cell horn. The 604 was capable of a then-impressive 30 watts of power handling, but due to its high efficiency, wide bandwidth and point-source imaging, it was soon adopted as a standard monitor in studios.

Altec continued improving the 604 through the years, and the drivers have been used in numerous variants, either in stock "utility" cabinets, custom enclosures, modified third-party designs (Big Reds) or with an alternate crossover such as Doug Sax's Mastering Labs model. The affinity for the 604 may have waned in the studio, but it later regained popularity as the basis for UREI's 811/813/815 monitors.

PULSE TECHNIQUES
Pultec EQP-1 Program Equalizer (1951)

Pultec founders Gene Shank and Ollie Summerland unveiled the first passive program EQ in 1951. This EQP-1 was based on filter circuits licensed from Western Electric and sounded great, but suffered the gain insertion losses typical of any passive filter, so the duo upgraded their original unit to the EQP-1A, which followed the EQ section with a gain makeup stage using a push-pull design with 12AU7, 12AX7 and 6X4 vacuum tubes. Designed for broad equalization of program material, the EQP-1A had four low boost/cut frequencies, three high-cut frequencies and a choice of seven HF boost points, along with a bandwidth control for shaping the high boost curve.

Like many boutique entrepreneurs, Shank and Summerland built every unit to order by hand in their true two-man operation. Other Pultec units included the EQ-H2 high-frequency equalizer, the MEQ-5 mid-band EQ and the EQP-1A3 (an EQP-1A in a two-rackspace chassis), as well as solid-state versions, which had silver-

face front panels. The company folded decades ago, but its spirit lives on in products such as Manley Lab's Enhanced Pultec EQP-1A, an updated version with improved sonic performance.

GEORG NEUMANN COMPANY
48-Volt Phantom Power (1966)

Phantom power is nothing new; in fact, the concept hails back to the early days of telegraph and telephone technology when it was discovered that low voltages for carbon mics, ringers and buzzers could be run down a two-conductor signal line. Originally, there was no need for phantom power in the audio industry, where the choice was dynamic or ribbon mics (which require no powering) or tube mics, which typically draw high currents that are inappropriate for phantom powering. With the advent of transistor-based condensers, the alternative to an external power supply was battery powering or the 12-volt AB power system (sometimes called T-powering) developed by Hamburg's NWDR Labs.

Neumann KM84

Neumann's first mic with AB powering was the 1965 KTM, but the company's engineers were not impressed with the 12V system. In 1966, Neumann launched the renowned 48V powered KM 83/84/85 condensers (now the KM 183/184/185 line), and with no voltage potential between the two conductors—hence the name "phantom"—the system could withstand shorts, polarity reverses and connection to dynamic mics without damage. The KM 80 Series mics were a hit, the 48V standard was adopted

throughout the industry and, today, 48V phantom power makes life a little easier for thousands of audio engineers.

GEORGE MASSENBURG
ITI ME-230 Parametric Equalizer (1969)

With so many tools available at our fingertips, it's hard to imagine a time before parametric equalizers existed, but we have George Massenburg to thank for this development. In 1967, Massenburg was using a prototype sweepable EQ designed by his friend Bob Meushaw. The unit had noisy early op amps and an odd interface, but offered advantages over the graphics,
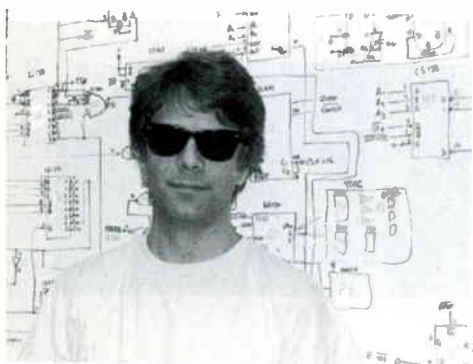
program EQs and filters available at the time. Two years later, Massenburg wanted to create a more elegant interface on a 3-band equalizer (with independent control of gain, Q and frequency for each band) for a console he was designing for ITI. Only one ITI board was ever built (it's currently at the bottom of the Baltimore Harbor), but the ME-230 parametric EQ it featured was shown at AES in 1971.

It was somewhat crude, and many of the components (particularly op amps) were hardly up to today's standards, but the parametric equalizer was finally born, and Massenburg presented his findings on parametrics in an AES presentation a year later. Massenburg never patented the circuit or trademarked his term "parametric," but continues to build (much improved!) parametric EQs sold through George Massenburg Labs.

ROBERT MOOG
Moog Music Minimoog Synthesizer (1970)

Even though his name is nearly synonymous with synthesizers, Bob Moog didn't invent the instrument. In fact, his Minimoog wasn't even his first creation or the most powerful. But the Minimoog found its

way into the studio, where session players wanted a compact synth to use on dates. Sensing a new market, Moog took the most requested modules from his large modular systems and put them into an easy-to-use package that didn't require patch cords or programming knowledge. It was unveiled at AES in 1970 and priced at $1,200.

The pro community saw the Minimoog as an audio tool, but the response at NAMM from music dealers was less rosy, especially in an era when synths simply weren't sold in music stores. But with time, sales took off, and by 1980, when production was halted, more than 12,000 Minimoogs had been sold, although Moog had sold his interest in the company by then. Years later, Moog bought the company back, and today, Moog Music offers keyboard and rackmount versions of the Minimoog (now updated with MIDI, preset memories and more), but its thick, chunky, phat, classic sound remains faithful to the original.

DOLBY LABORATORIES
Dolby Stereo Theater Sound (1976)

The roots of multichannel theater sound hail back to Disney's *Fantasia*, which, in 1940, appeared in certain theaters with a "steered" 3-channel optical track played by a truckload of equipment. After World War II, interest in stereo films increased, and in 1953, *The Robe*, the first CinemaScope film, featured four tracks of stereo sound on magnetically striped film stock. This single-system approach simplified the presentation, but stereo film releases were rare, as mag-striped prints were fragile and expensive and distributors had to maintain inventories

of mono and stereo prints.

Everything changed in 1976 with *A Star Is Born*, the first film released with a Dolby Stereo soundtrack. The format used phase matrixing to store four channels (left/right/center/surround) onto a 2-channel format, which, in this case, was two closely spaced optical tracks on a standard 35mm film. The beauty of the system was compatibility: A 35mm Dolby Stereo film could be played anywhere, whether in a non-Dolby mono drive-in or in a theater upgraded with Dolby cinema decoders and a 4-channel playback system. And, with no appreciable cost increase in manufacturing stereo prints, film studios were receptive to the idea. By 1977, the success of blockbusters such as *Star Wars* and *Close Encounters of the Third Kind* helped push exhibitors into upgrading to the new format. Interestingly, the tens of thousands of Dolby Stereo tracks encoded onto Beta/VHS HiFi video releases laid the groundwork for a revolution in home theater, fueled by the arrival of Dolby Pro Logic–equipped stereo components in the years to come.

Today, movie prints with digital sounds have Dolby Stereo analog soundtracks for backup and compatibility with all cinemas. Dolby Surround is also used on nearly every TV surround broadcast.

AMPEX
ATR-102 Mastering Recorder (1976)

Unveiled nearly 30 years ago at AES in 1976, the Ampex ATR-102 (the 2-channel version of the company's ATR-100 Series recorders) is still considered by many to be the best mastering deck ever built. Unfortunately, it wasn't always that way. Early units were sometimes erratic and

Dolby Stereo Optical Playback in the Cinema

Signal flow in a Dolby Stereo system

unreliable due to some substandard assembly line work and uneven quality of parts from outside suppliers. But after a few years of such growing pains, the ATR-102 emerged as a favorite of studios and broadcasters alike.

Created by Ampex hardware engineers, the ATR Series incorporated advanced aerospace techniques with clever design details. The transport's gentle pinchroller-less design with capstan and reel motors under servo control provided smooth, continuous tension and tape handling, with almost nonexistent speed drift and extremely low flutter due to the large capstan. A unique plug-in head block let users change heads/guides in a matter of minutes, while its layout and convenient thumbwheel made for fast, easy editing. In all, some 3,000 machines (mono, stereo and multitrack) were made until the series was discontinued in 1982, but ATR-100s are still quite alive thanks to parts, service and even new designs (such as the 2-inch 8-track and 1-inch 2-track) from ATR Services Inc.

FAIRLIGHT
CMI (Computer Musical Instrument) (1979)

Fairlight was founded in 1975 by Kim Ryrie

Kim Ryrie shows lightpen control of the CMI.

and Peter Vogel, who were interested in using the newly available microprocessors to create digitally controlled synthesizers. Fairlight began shipping its revolutionary Series I CMI (Computer Musical Instrument) in 1979, with the first two units going to Peter Gabriel and Stevie Wonder.

Based on two 6800 processors, the CMI provided digital synthesis with a 6-octave keyboard, 8-note polyphony, two 8-inch floppy disk drives (one for the operating system, the other for archiving/library storage of sounds) and a whopping 208 KB of RAM. The system offered onscreen displays of waveforms, which could be modified via Fourier synthesis or simple light-pen redrawing of the waveform.

It also offered sampling, with the ability to pitch-shift sounds or make modifications via the CMI processor. An onboard sequencer stored note velocity information, and up to eight 8-bit audio outs were available for routing to a mixer or multitrack. Things can (and will) change over time. Now celebrating its 30th anniversary, the company's latest generation of digital consoles integrate for 24-bit/96kHz DAWs and are based on a 240-channel, 72-bus QDC engine.

ROGER LINN, LINN ELECTRONICS
LM-1 Drum Computer (1979)

It isn't often that an inventor creates a musical instrument that almost overnight changes the course of popular music, but Roger Linn is one such innovator. The concept of the drum machine wasn't exactly new: Kimball received the first auto accompaniment patent decades before and Roland had its first drum box back in the 1960s. However, Linn's LM-1 Drum Computer was the first programmable drum machine with realistic sampled drums and was an instant success among recording

Roger Linn in 1982, with the LinnDrum

pros—even at a retail of $4,995.

The LM-1 had 18 8-bit/28kHz drum sounds but no cymbal samples because of the huge memory requirements of long sounds. Only some 500 units were sold—seemingly all to producers and composers who previously hired session players—putting studio drummers on the endangered species list. Suddenly, jobs sprang up for drum machine "programmers." In 1982, the LM-1 was replaced by the LinnDrum, a lower-cost (only $3,000!) unit that added cymbal sounds, live drum trigger inputs and sounds that could be interchanged by swapping socketed internal ROM chips. But either way—LM-1 or LinnDrum—pop music would never be the same. In his post-LinnDrum life, Linn created Akai's MPC Series and now operates Roger Linn Design, makers of the AdrenaLinn beat-synched multi-effects processor.

DAVE SMITH, SEQUENTIAL CIRCUITS
MIDI Specification (1983)

The Musical Instrument Digital Interface (MIDI) had its origins when Sequential

Dave Smith (R) demos MIDI at Winter NAMM, 1983

Circuits' founder (and designer of the Prophet-5, the first fully programmable polyphonic synth) Dave Smith presented a 1981 AES paper for a Universal Synthesizer Interface (USI) based on his meetings with Tom Oberheim and Roland's Ikutaro Kakehashi. USI proposed a common note-on/off communications protocol between electronic instruments from different manufacturers. In a rare example of insight and cooperation, U.S. and overseas companies began working together to refine USI into the more powerful MIDI standard. MIDI was first publicly demonstrated at Winter NAMM 1983, when a Prophet-600 was connected to a Roland JP-6.

As computers became affordable and more powerful, MIDI became a staple in studios, along with growing racks of synths, drum machines, sequencers and samplers, with control rooms expanded to house all of this gear. During the years, the original MIDI spec was enhanced with features such as MIDI Sample Dump, MIDI Time Code, MIDI Show Control, MIDI Machine Control and General MIDI, as well as incorporating MIDI sequencing into the DAW environment. Smith later joined the development team on Reality—the first professional soft synth—and, more recently, started Dave Smith Instruments to design new, enhanced analog synths such as the Poly Evolver Keyboard.

AUDIO PRECISION
System One (1985)
In 1984, four former Tektronix engineers formed Audio Precision with the intent of becoming "the quality leader in the audio test equipment market." Armed with decades of experience in designing audio test gear, the group set out to accomplish that task. A year later, the company unveiled its System One, which was three to 10 times faster than other systems on the market, while setting new performance standards with residual distortion and noise specs that could handle the CD players and 16-bit digital products that had just come to market.

One of the first PC-based instruments, System One combined dedicated hardware with software that simplified the creation of automated test procedures, which was ideal in manufacturing environments where non-technical users often run quality control tests. Within a few years, the System One was accepted as the standard in consumer and pro audio, but the company continued to refine the product with software updates and new hardware platforms that added DSP (FFT analysis, waveform displays, etc.), digital domain testing and full 192kHz measurements. In 20 years, more than 10,000 Audio Precision systems have been sold and thousands of the original System Ones remain in operation worldwide.

YAMAHA
02R Digital Console (1995)
At the APRS (UK studio) show in 1995,

Yamaha unveiled its less-than-$10,000 02R 20-bit 8-bus console, offering 24 analog inputs and 16 digital tape returns for a total of 40 inputs in remix. To say this product was a "hit" would be an understatement: "Revolution" would be a far more accurate term. In addition to providing digital domain mixing, the 02R offered moving faders; instantaneous reset of all console parameters; limiter/compressor/gate on every channel and output bus; programmable 4-band, true parametric EQs; four I/O card slots

accommodating ADAT, DA-88, S/PDIF and AES/EBU signals; and two SPX-quality internal effects processors. A slick feature was the ability to create "libraries" of favorite DSP settings, while a central LCD panel showed EQ curves, DSP parameters, console setup/routings, etc.

Perhaps one of the 02R's coolest features was a simple cascade port on the rear panel, which allowed multiple consoles to be linked for more I/Os, creating a fully loaded 80-input board for less than $20,000. And as the 02R was software-based, later updates added new functionality such as surround mixing.

Eventually, the 02R was replaced by Yamaha's 02R96, a 56-input, 24-bit/96kHz board with full mix interfacing with popular DAWs. But in its time, the original 02R was a hugely successful product that broke all the rules, and, paired with a couple of ADAT or DA-88 recorders, the notion of the affordable all-digital studio was no longer a fantasy. ∎

George Petersen is Mix's *editorial director.*

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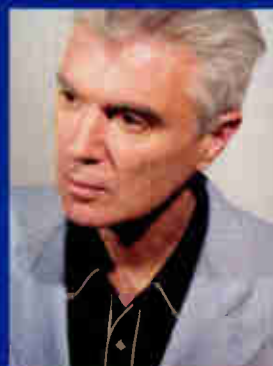
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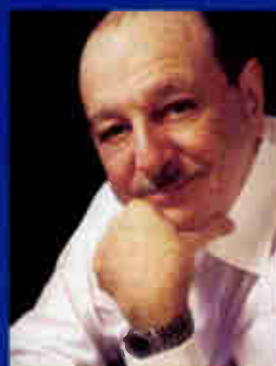
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Craig Sharmat

Guitarist's Career Finds New Life in Composing

K ids don't usually launch their music career composing or arranging; those gigs evolve over time. Craig Sharmat (www.scoredog.tv), for example, grew up in Irvington, N.Y., playing guitar in high school bands. After studying at Syracuse University and the University of Arizona, he settled in California, graduated from the Guitar Institute and headed to Las Vegas. Lounge and showroom gigs (he backed Englebert Humperdinck!) eventually grew old, so Sharmat headed back to L.A. Soon, he was on the road with Ronnie Laws and Randy Crawford.

In the mid-1980s, he landed his first scoring gig for Disney's *Kids Incorporated* and hung onto it for three years. Bitten by the composing bug, Sharmat hung up his road shoes and began looking for scoring assignments. These days, the guitarist, who admittedly has limited keyboard chops, is an A-class orchestral emulation specialist. When he's not composing music for *America's Most Wanted* (a gig he's held for 10 years) and animation and other nationally broadcast shows, Sharmat can be found in his home studio churning out show pieces for several major sample libraries, including the Vienna Symphonic Library and Sonic Implants. He has recently worked with trumpet player Rick Braun on game sound arrangements for Sony.

Computers, of course, are now spread throughout Sharmat's studio. His current console-less rig includes four PCs and a 2GHz dual Mac G5. "I mix entirely within Digital Performer or Logic," Sharmat says. "Logic 7 is excellent—there are some new EXS sounds that are really good—and I'm starting to make it my main sequencer.

"Once you start getting into large track counts—I typically run up to 60 and sometimes even more—it's critical to set up templates that you can use over and over again," he advises. "It's also important to decide which libraries you prefer for different tasks. With strings, I'll have multiple tracks for all sections. Take the cello section: I'll set up tracks for staccato and legato cellos, and another that can handle runs. The Sonic Implants library is my overall favorite straight out of the box; it has the most natural sound. The samples are placed in the proper positions with just the right amount of hall ambience. I use the EastWest Quantum Leap Symphonic Orchestra for a number of things—mostly when I need power. I also use the SAM libraries. The new True Strike percussion library is my go-to percussion source. I also like their brass; they come with more effects than any other library.

"I use VSL a lot because their articulations and tools are so well-thought-out, but when I apply reverb, the work needs to get a little more detailed. Once it's set up, though, I don't have to think about it again. With VSL, I

Craig Sharmat surrounded by his computer-centric composing rig

need to create the early reflections of the stage. I'll take a convolution reverb that has different stage distances and apply them on a per-section basis. Just as you'd hear them in a hall, I set up the strings closest to the listener, then the winds, brass and finally the percussion. This is how I create depth in a mix. Then I'll put a large room on top as I would with the libraries that have built-in reverb."

The other computers in Sharmat's studio are Lightpiped into his G5 mixing station. "Everything goes through a MOTU 2408 Mk III. I have two other MOTU devices: a 1224, which I use for analog inputs, and a 2408 Mk II for other audio inputs. I've eliminated most of my MIDI devices by setting up an Ethernet network and using MIDI Over LAN." Sharmat has had little call for surround mixes, holding onto a pair of Event 20/20s. "I've gotten to know how the mixes I create on the 20/20s will translate, and they work well for me."

As difficult as it has been to capture orchestral sections' expressive potential, sampling solo instruments to yield satisfying results has been more difficult. Sharmat is quite partial to the Synful modeling device. "They've done a great job modeling these instruments and I've begun to add them onto my sample libraries with excellent results," he says. In addition to the commercial products integrated into his studio, Sharmat also relies on the custom library he and several colleagues created in 2004. "Several of us went over to Prague to record an orchestra. We wanted to capture articulations that were not available in commercial libraries. We also wanted to create a library that didn't have a sound you could buy off the shelf. It feels more personal."

As clever as he's become with the sample manipulation, Sharmat still holds onto his six-string. "I have my old Roland GR50 rackmount guitar controller. I use it with a Brian Moore guitar that I really love. I play gigs with it and the guitar makes its way on top of many of my sequenced tracks." ∎

Gary Eskow is a contributing editor to Mix.

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Make Way for *Family Guy*
Mixing for Every Word at Wilshire Stages

By Maureen Droney

Y ou wouldn't expect people who listen to *Family Guy* jokes all day to look so, well, *normal*. But in person, the post-production sound crew for *Family Guy* looks like any average group. This probably comes as a surprise to anyone familiar with the lightning-paced, over-the-top and screamingly funny (Huh?! Did he just actually really say what I *think* he said?!) animated TV series.

A little background for those who aren't (yet) into Stewie. *Family Guy* revolves around the lives of the majorly dysfunctional blue-collar Griffin family of Quahog, R.I.: dim-witted father Peter, sophisticated baby Stewie and the sardonically talkative, alcoholic family dog Brian—all voiced by show creator Seth MacFarlane—along with teenage sister Meg, brother Chris and Lois the mom. Although canceled in 2002 after three seasons, thanks to unprecedented DVD sales (reportedly more than 4 million units) and a top slot on Cartoon Network's Adult Swim block, *Family Guy* is back with a vengeance.

Holed up at Los Angeles' Wilshire Stages, the crew is immune to all of the hype, mostly because they have so much to do. They're mixing 35 episodes—quickly.

An episode is mixed during a two-day period and then airs on Fox television the following Sunday. The same team also mixes *American Dad!*, the new animated series also by MacFarlane. They've also put together in surround—with all the usual commentary, deleted scenes, etc.—the DVD movie *Family Guy Presents Stewie Griffin: The Untold Story*, comprising three of the new episodes and the edited-out-for-network-TV material.

Wunderkind MacFarlane was only 24 when he created *Family Guy*; now, he oversees a franchise. And he still does the bulk of the voices, much of the time changing from character to character on-the-fly.

The scene recalls shades of the '50s, where Mel Blanc did the voices for Bugs Bunny, Daffy Duck *and* Porky Pig. In fact, much of *Family Guy*'s cutting-edge comedy is deeply rooted in classic television. For one thing, its music is recorded with live orchestra at Fox's Newman Stage, with venerable scoring mixer Armin Steiner at the controls. And one of the show's trademarks is rapid-fire cutaways, often to parodies of vintage movies and television.

Those cutaways are one of his biggest *Family Guy* challenges, comments supervising sound editor Bob Newlan. "We have to distill the essences of those TV and movie parodies," he explains. "The bit might only take 10 seconds of screen time, but I've got to research the movie and figure out what went into its sound effects. We don't have much time and there are no effects predubs. We've just got to come up with something quickly.

"It's a challenge of animation in general: A character will fire a gun twice, jump in a car, peel out and hit a pedestrian—all in two seconds," Newlan continues. "The effects can't hang on at all. But with the

From left: Family Guy's recordist Matt Duncan, music editor Stan Jones, supervising sound editor Bob Newlan, effects mixer Sam Black and music/dialog mixer Jim Fitzpatrick. Sitting: associate producer Kim Fertman

Sounddogs.com
From Pets to Jets and Everything in Between

By Maureen Droney

Online sound effects distributor Sounddogs.com definitely has it together. Punching up the company's Website on July 4, 2005, I was immediately presented with a large selection of fireworks sounds. Pretty clever, huh? Say I'm an editor at a TV news station and the production sound for the town fireworks display didn't turn out too well. Or, maybe I'm putting together a little home video of the July 4th family reunion, or—well, you get the picture. If you work with sound design, Sounddogs. com wants to make your life easier.

"We try to hit it like that: target what customers might be looking for," says Sounddogs.com VP of production Paul Virostek. "One of our main appeals is that we make it really simple. For example, the site is quick to load and there are no unnecessary graphics. It's just a tool for customers to quickly find exactly what they need."

Launched in May 1997, Sounddogs .com sells— mostly over the Internet— sound effects, production music, samples and loops to a client base that works on productions of all sizes and budgets, from feature films to home videos. The library, which has 260,000 discrete sounds, is vast and growing. It now includes the Casablanca Sound Library, Master's Workshop and *Amadeus* collections, among others, as well as the personal libraries of such notables as Craig Henighan (*Sin City, Requiem for a Dream*), Dan O'Connell (Foley on *Pirates of the Caribbean, Gladiator*) and Andy Newell (*The Wild*). The company's latest acquisition is the

Sounddogs.com co-founder Rob Nokes

prestigious SoundStorm library, a wealth of material recorded by Bruce Stambler (*The Fast and the Furious, Stealth*), John Leveque (*The Fugitive, L.A. Confidential*) and the other acclaimed SoundStorm editors.

The original Sound Dogs Inc., established in Toronto in 1991 by Greg

SmartSound Software
Expert Music Editing in Sonicfire Pro

By Barry Rudolph

Speed is everything in commercial music production. A three or four-hour booking for a 30-second spot doesn't leave a lot of time for final music tweaks. And, with the increased number of video changes at the last minute, timing music to video can sometimes be problematic. SmartSound (www.smartsound .com) Software of Northridge, Calif.—a provider of music soundtracks with a huge library of license-free music tracks and its flagship product, Sonicfire Pro 3.2—believes it has a solution.

Traditionally, needle-drop music libraries are sold via music CDs, where cuts at a set length are manually auditioned before users import and cut in a video editing system to the required length for the picture. All of SmartSound's library music has been pre-encoded using a patented technology that allows any track to be instantly rendered into a new and unique musical arrangement, featuring intro, main body and ending sections, and ranging in length that is anywhere from three seconds to more than 30 minutes. The resulting transformation sounds natural, musical and without digital artifacts, as neither pitch shifting nor time stretching is used. Music tracks retain their original keys, tempi and tempo variations (hard quantization is not a requirement for encoding), and legato, rubato or accelerando sections, grand pauses and key changes are kept intact after encoding.

Kevin Klinger, president and CEO of SmartSound Software, says, "Sonicfire Pro 3.2 is the most efficient way for commercial and broadcast media creators and editors to create a compelling, high-impact soundtrack, especially when there is neither time nor the resources to hire a professional scoring composer. Sonicfire does the
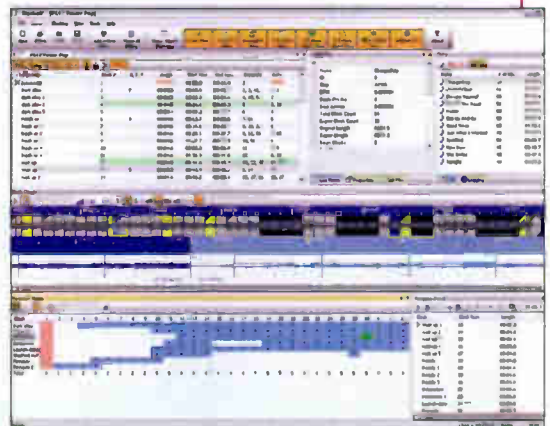
The Timeline window in Sonicfire Pro

work of an experienced music editor by creating a professional-quality soundtrack that is perfectly timed."

Sonicfire Pro is now bundled with Avid Xpress® Pro V. 4.5 and Media Composer® Adrenaline™, and includes 40 tracks of pre-licensed SmartSound music tracks. For multimedia creators, Sonicfire Pro has advanced integration with Macromedia Flash. Recently, SmartSound entered a partnership with Megatrax, a music library production company, to launch a new SmartSound-enabled music library comprising more than 260 songs on a single, dual-layer DVD entitled *The Scene*. This marks the first time that a needle-drop music library has been encoded to work with SmartSound technology.

THE ENCODING PROCESS

During a three-step process called "blocking," SmartSound's proprietary software, Block Aid, encodes stereo music tracks supplied by SmartSound's network of professional composers. Music tracks can be in any format when they're submitted to a staff of in-house musician/engineers, aptly called "blockers," who meticulously guide Block Aid through a four to five-hour session per two to five-minute music piece. All musical editing decisions are made on a case-by-case basis.

First in the process is zero-axis crossing digital editing: slicing and dicing the music into blocks. Block length can be anywhere from a single 16th note to eight measures long, depending on the music, the demands of the song's arrangement complexities and potential variations. To accommodate length variations in sub-second exactitudes, the endings of songs are chopped up

even more finely to ensure natural and smooth transitions to the very end of the song—even during a ringout after a shock ending.

Once all blocks are determined, the blocker tags all possible begin blocks. A begin block is a section that can also serve as an alternative intro, giving an editor more than a single intro choice. Next is the assignment of compatible blocks. The most time-intensive portion of encoding, this is an auditioning process in which blocks are connected together and checked for musicality and sound quality at the moment of transition. Both good and bad compatibilities are logged, with good compatibilities indicated in green.

Once all good compatibles are entered into a database, a list of possible variations is built and displayed in an onscreen matrix table. The power of Sonicfire Pro is that you can quickly audition all the variations without having to do any editing—just find one that you like and move on. Usually, there are at least three and up to six variations for each song. More variations are possible as you increase length. There may be only a single three-second variation possible of an originally four-minute song, but as many as 12 choices if you opt for a minute-long variation of the same four-minute song.

The encoding process is complete after the database is annotated with keyword names, block names, publisher and licensing data, and composer information. The files are outputted using a special SmartSound file format that can only be read by Sonicfire Pro. All SmartSound library CDs are arranged by style, with up to 26 different songs per style.

USING SONICFIRE PRO IN THE STUDIO

In the video editing bay, using Sonicfire Pro 3.2 (PC/Mac) and any SmartSound-encoded track, editors can load their video and drag out a timeline for the music and then select from several variations or arrangements of the selected song. Editors can freely experiment with substitutions, repeats, crossfades, fades and more using all of the familiar digital audio editing tools. Warning indicators will respond if you've selected the same block more than once in a row or if you attempt to join incompatible blocks.

Unique to Sonicfire is a comprehensive search engine to find just the right music for every clip. Considering that there may be thousands of songs in your library, you can search by style first and then drill down further using criteria search such as intensity, instrument or descriptive keywords. There is a Preview window to listen to a song snippet before loading its entire file.

You can preview new songs that are not in your library against picture by visiting SmartSound's Website. If you find one that works, it can be downloaded directly into a session. All billing, file capture, and reorganization and background processing is done behind the scenes without slowing down an edit session.

Once a song is at the appropriate length, you can output audio in any format and sample rate your project requires—including 22.05 kHz for multimedia applications. Available sample rates currently go up to 48 kHz, with higher resolutions coming soon. ∎

Family Guy

pace of this show, it's even more so. You've got to condense, condense, condense."

At Wilshire's Stage C, three Pro Tools systems are used for the mix: one each for effects, music and dialog playback. The dialog rig also does double-duty with stem mixes routed back to it through Stage C's Harrison console for peak limiting.

"I use the console's faders to mix on," says dialog and music mixer Jim Fitzpatrick. "I also do my sends, returns and panning on the board. All of the processing—EQ [except on music], compression and reverb—is in Pro Tools."

For dialog, Fitzpatrick generally has seven tracks of principal voices and five to eight tracks of group walla. The vocals that arrive for the mix are, he says, "reasonably consistent. For a while, we got lines that were recorded in different environments with changing early reflections, which gave us some challenges. But things have settled down. Now I just deal with the different distances from which the actors are working their mics."

In the mix, Fitzpatrick applies little compression to individual vocal tracks. "That sounded too crunched," he explains. "I work more with overall levels in the traditional style where everything goes through a dialog chain. It's simple, really: a Waves Renaissance compressor adjusted gently for a soft knee and the Waves L1 set for brickwall limiting. Then I play with it, adding gain into the chain, lowering the threshold—tickling it all the time."

Sound effects are plentiful and punchy,

but, as sound effects mixer Sam Black notes, the directive on how they're used is unequivocal: "Dialog is king," he states. "If a character is talking, effects don't play. There could be a gunshot behind a line of dialog, but they'd rather not have it at all than put it in at low volume. We had one scene where somebody puked on a wall. You see it dripping and we had sound effects for it. But during the first two drips, there was dialog so we didn't play the drips. The second two drips, no talking, so we played them."

Black generally works with eight channels of Foley and 24 of effects. "Everything is covered," he explains, "and almost all of the sounds I get have multiple elements. A face punch, for example, will have four or five elements to it. But it's either play it or *don't* play it. Stay out of the way of the dialog and then play it as big as you can. The same thing with backgrounds: We very seldom use any."

Black and Fitzpatrick admit that *Family Guy*'s mixing style took some getting used to. "They don't want processing and they want everything in-your-face," notes Black. "If a character goes into a bathroom, your reaction as a mixer is to add some slap. But we do very little of that. Basically, everything is dry and loud."

"Also, we seldom play 'perspectives,'" adds Fitzpatrick. "If Stewie's yelling while he's carried up the stairs, instinctively you want to pull away and put some reverb on it. But he stays at one level. It's all part of the joke, so every word needs to be heard."

MacFarlane is adamant about using orchestra, calling that type of recording

one of the "most fun parts" of the production process, citing "a big, fat, quality of sound that you can't get from electronics." Almost all of the show's music, composed by Walter Murphy and Ron Jones, is recorded live.

"We've used up to 55 players," comments music editor Stan Jones, who's worked on *Family Guy* since the first season. "Or it might be just brass with no strings, or guitar, bass and drums. It depends upon the show. We record 24-bit, 48k, and Armin does 5.1 mixes that get delivered to the dub stage."

Although a session may run just four hours, prep time is extensive. "We figure out where the music will be," says Jones. "Then the music editing department does a full breakdown of timings—every laugh, smile and cut. There's click track and streamer [visual timing cues that run with picture] preparation. There are a bunch of guys working on arrangements who need notes and copyists who break it down and write out the parts for the different musicians. Files are sent back and forth—iChat, iDisk and FTP—between the composers and arrangers, and we get MIDI files so we have the exact tempos. Each cue gets a Pro Tools file, then they're merged into a session that has all of the cues."

Anywhere from 12 to 24 tracks of music arrives for the dub, where Fitzpatrick brings them up on the console. "It's such a pleasure to have the live music," he says. "I rarely have to do anything except get the levels right."

In addition to *The Untold Story* DVD, the TV episodes also get 5.1 mixes. The focus,

for them, however, has to be on stereo for the immediate airdate. "We take our first pass through on the big JBL speakers in 5.1 just to get everything in place," explains Fitzpatrick. "After that, we do our playbacks through smaller Audix speakers, just listening in left and right. It's Dolby surround–encoded LCRS, but we stick with the left/right and work with what we hear on the small speakers. When Seth comes in, we turn the level even lower; that's how he likes to listen."

Family Guy episodes make an unusually seamless sonic transition between program and commercials. "It's not hard to get it loud enough; getting it loud enough without having it sound squashed is the problem," offers Fitzpatrick, who also relies, at this final stage of the mix, on the L1 and Renaissance compressors in his Pro Tools. "For the discrete stems, I just use clip protection. For the Lt/Rt stems, I use a combination of compression before the Dolby encoders and limiting to Fox's requirements after the encoders. It took a

lot of experimenting, but the system works well. In a traditional studio, I never had enough compressors to do all this. But here, even though we're doing so many mixes simultaneously [5.1 stems, Lt/Rt, M&E], I have the tools that help me tame all of this at once while optimizing for the air signal."

"We get our first finished pass of the show on day 1," notes Black, "and we make a DVD for Seth. He gives us changes and then comes in to view. He's got really sharp ears and a great memory. He can say, 'I hate that cue, play one from show 103,' which was five weeks ago."

So is there time to laugh at the jokes? You bet. "It's the writing that makes this show," says Black. "I've worked on a lot of comedies, but this one has the most concentrated jokes I've ever seen. They slap you in the face and your mouth drops open. You can't believe what you heard: 'What did they say?!' and—boom—they're on to the next joke. It's an animated feature, but it's a *writer's* soundtrack." ∎

Wilshire Stages

Maybe it's the smaller, friendlier, indie-style vibe. Maybe it's the talented staff. Or maybe it's the fact that getting in and out is no hassle—unlike at many of the major film studios these days where just getting on the lot and parking can take half-an-hour. Whatever the reason, Wilshire Stages (www.wilshirestages.com) in the centrally located midtown section of Los Angeles has become known as a low-key, unpretentious and extremely tech-savvy place for film and television post-production and mixing.

With its three main Harrison console–equipped dubbing stages, ADR and Foley stages, and sound editorial rooms, Wilshire has amassed a string of cool credits and staked a claim as the foremost independent in town. "What's interesting about us is that, under one roof, we do so many different kinds of work," comments senior VP Paul Rodriguez, "from IMAX movies to features to episodic television and ISDN ADR."

"We're kind of under the radar," adds chief technician Mike Morongell. "In our Studio B, we do feature film work and some of the higher-profile TV shows with more complicated sound. Our mixers have film backgrounds that they've adapted to television. A lot of TV shows have tons of effects these days, so that gives them an edge.

"With TV, it's about getting the level," Morongell continues. "You've got to be able to not just mix, but also control dynamics and meet the criteria of the broadcasters and their different rules. Our mixers are really good at that. Also, everybody wants to make 5.1 stems for their DVDs, but shows are often broadcast in Lt/Rt stereo. Here, they can record and monitor in all of the different ways.

"There's a lot of information and media to be managed. The audio technician role has changed, in many ways, to being an IT job. We do all that, but we also really want our projects to sound great. I go to the movie theater and listen to all of our shows on the air. What comes out of here definitely holds up."

Wilshire Stages' credits include feature films such as *The Fast & The Furious*, *Far From Heaven*, *Disclosure* and *The Mighty Wind*, as well as TV's *The Shield* and *Las Vegas*. Recent projects have included mixing for TV's *The Inside*, *Family Guy* and *American Dad*; on the film side, work includes ADR for *War of the Worlds* and mixing for *The Wendell Baker Story*, Mike Judge's *Idiocracy* and *My Life in Idlewild*.

— *Maureen Droney*

Sounddogs.com

—FROM PAGE 83

King and Nelson Ferreira, was a feature film sound editorial house. King, Rob Nokes and Robert Grieve formed Sound Dogs U.S. in 1995, and went on to work on such movies as *The Cable Guy*, *Big Momma's House*, *Red Dragon* and many more. Sounddogs.com began as a side business, evolving, as Nokes says, "in off-hours—before broadband! We learned the market and worked out the kinks."

A self-described "kid hacker," Nokes made the Internet company his baby.

Convinced that online delivery was the way to go, he kept at it. "In the beginning, everyone told Rob to dump the concept," says Sounddogs.com marketing manager Doug Bossi. "He loves sounds and operated it at a loss, sticking with it a lot longer than most people would have because he believed in the concept. Now he's starting to reap the rewards."

"We knew from our editing experience that there's always a hole you need to plug with that one effect you don't have," Virostek says. "The fact that you can grab that sound from anywhere in the world and pull it down

means you can work in all sorts of facilities, on different projects and still have access to the same collection of sound effects."

Sound Dogs Inc. and Sounddogs.com split amicably in 2002 and remain close working partners. Not only did Nokes keep at the Internet business, but he kept—and keeps—adding to its library by acquisition, his own work and the work of the Vancouver, B.C.–based Virostek.

While they're now also Internet entrepreneurs, Nokes and Virostek are fundamentally still just sound junkies. Recording remains, they avow, their favorite part of the job. They're often to be found recording and creating sounds for top Hollywood sound supervisors, including for such high-profile films as *Million Dollar Baby*, *Seabiscuit*, *Dukes of Hazzard*, *Shaggy DA* and *Stealth*; the sounds they've recorded for those films are now part of the library, as well.

Exotic sounds abound—like camels from Kazakhstan, caves from the Czech Republic, soccer crowds from Brazil and a fish market from Hong Kong—as do the most mundane: Think baggage claim at Newark airport, haircuts, nose blows and teeth chomping on ears of corn. Some of the most popular sounds are fanfares, applause, dogs, DJ scratching and cartoon effects. Also available are unpublished specialty libraries by Sounddogs.com's friends that, Virostek says, have "a bit more character and distinctiveness," as well as embedded metadata that provides info on the origin of the sounds.

Customers can preview selections in MP3 format before buying in .AIFF, .WAV or MP3, with purchased sounds available at the sample rate and bit configuration a customer requests, up to 16-bit/48 kHz. (Some are also available at 24-bit.) Prices range from $1 to $15, based on length, quality, number of channels and the sound effects creator. The company also sells CDs and compilations, including the new 24-bit Dog Packs.

Sounddogs.com's material has been used in everything from feature films such as *Collateral*, *Meet the Parents* and *Titanic*, to television, toys, games, Websites and commercials. The company now also offers production music and is gearing up to sell ringtones. Actually, says Bossi, the market these days looks limitless. "Internet advertising and streaming are taking off," he points out. "And digital signage is projected to overtake regular advertising. All of those things need content and they all need sound. What's coming around the corner is really exciting: a continuing need for sound—and for new sounds." ∎

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New Sound for Picture Products

SONIFEX
DELAY SYNCHRONIZER

Part of the popular Redbox Series, the RB-DS2 audio delay synchronizer from Sonifex (dist. by Independent Audio, www.independentaudio.com) is used to resynch audio to video following delay processes such as standards conversions and transmission lags. The stereo/dual-mono unit features XLR balanced analog and AES/EBU digital I/Os and up to 10.5 seconds of delay at 24-bit/96 kHz or 42 seconds at 16-bit/48 kHz. An internal Compact Flash expansion adds up to 2 GB of memory to delay times of more than 3.5 hours, delay program output across different time zones or shift a broadcast by an hour for satellite rebroadcast. Delay times can be selected in samples, fields/frames (NTSC or PAL), milliseconds and, with the Compact Flash expansion, in hh:mm:ss.

M&K MPS-1611P

The MPS-1611P from M&K Professional (www.mksound.com) is a more compact, less-expensive monitor based on its popular MPS-2510P. The bi-amplified 6.5-inch, two-way, near- to mid-field MPS-1611P is suitable for stereo or multichannel

applications, has internal mag shielding and can be used stand-alone or with any of M&K's powered subwoofers. The driver complement is a 6.5-inch polyproplyene woofer with a 1-inch fabric-dome transmission line tweeter with an aluminum faceplate. A tapered cabinet port has a removable plug for converting the system to a sealed box or a ported design for adapting the monitor to different room and/or subwoofer configurations. Inputs are XLR/TRS balanced and unbalanced RCA; all are buffered, allowing simultaneous connections of pro (console, DAW, etc.) and consumer (DVD, surround decoder, etc.) gear without switching or repatching.

RØDE VIDEOMIC

The VideoMic from RØDE Microphones (www.rodemic.com, $249) is a professional-grade shotgun mic designed specifically for use with prosumer DV camcorders. This supercardioid condenser model is powered by a standard 9V battery (providing more than 100 hours of operation) and features a low-battery LED indicator, a switchable -12dB/octave 80Hz lowcut filter, a foam windscreen and an integral elastic suspension shock-mount. The VideoMic attaches to any camera with a standard hot-shoe fitting and has a stereo mini jack output cable. Optional accessories include a mini tripod mic stand, 1/8-inch-to-XLR adapter and the RØDE DeadCat, a fur-style windsock for use in high-wind conditions.

HOLOPHONE MINI

Now in pre-production—deliveries begin later this year—is the Holophone Mini from Holophone (www.holophone.com). Housed in a smaller, less-expensive package than the original, the Mini is a 5.1 mic (six discrete outputs) designed to mount directly on a camcorder. A Pocket PME unit encodes the discrete 5.1 audio streams from the mic in real time into SRS Labs' Circle Surround (Dolby Pro Logic and Pro Logic II–compatible) format and outputs a matrix-encoded, 2-channel stereo signal that can be recorded via standard L/R stereo input jacks on any camera. The Mini/PME pair is slated to be priced around $2,500.

GALLERY METACORDER 1.2

Gallery Software (www.gallery.co.uk) announces an upgrade to its Metacorder software that turns your Mac OS X laptop and favorite Core Audio interface into a full-function location recorder with sample
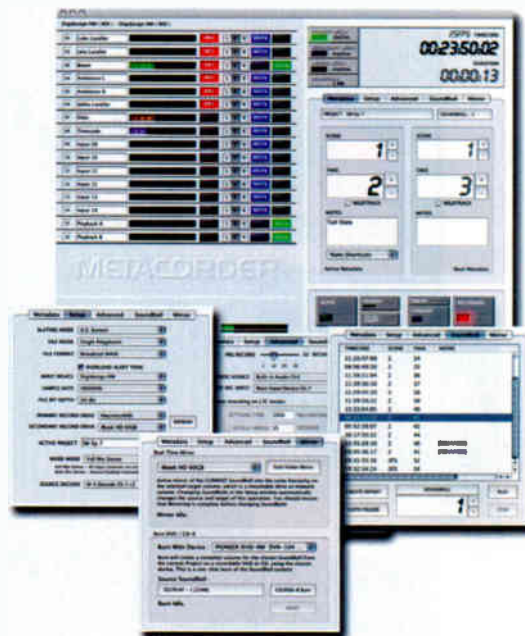
rates up to 192 kHz. Version 1.2 adds OS X Tiger support and the ability to record/play up to 96 simultaneous tracks. Other features include dual-media recording and the ability to back up completed sound rolls to DVD-R or CD-R drives (via FireWire) while recording continues. Also standard are M/S decoding, an LTC reader and the writing of iXML and Avid/Pro Tools–compatible "bext" metadata. ■

On the Road

PHOTOS STEVE JENNINGS

Santana

Carlos Santana is currently finishing up his touring year promoting his new release, *All That I Am*. Out with Santana are FOH engineer Robert Mailman from Sound Image (Escondido, Calif.), monitor engineer Brian Montgomery, system engineer Satoshi (Son) Nishimura and audio techs Robert McCrillis and Nathan Klaeser. *Mix* caught up with Mailman between tour dates.

Are you carrying production?

I am carrying a P.A. provided by Sound Image and two Midas XL4 consoles, a Meyer CP10, 52 JBL VerTec 4889 speaker enclosures, 20 JBL VerTec 4880 subs and QSC PL 9.0 and PL 6.0 amps. We're also using eight BSS 366 processors and eight VariCurve EQs to drive the system. Monitors is carrying a Yamaha PM1D, Shure PSM700 and HW600 in-ears, Sound Image 1x12 wedges and 16 Crown IT8000 amps.

What are some must-have items?

A good systems engineer that I trust to install and make the proper adjustments to my P.A. system. That person currently is Satoshi (Son) Nishimura. I can't do the show without him. The second is a console that I am really comfortable with.

What's your mixing philosophy?

I try and use the least amount of the best-quality equipment I can. As far as the mix goes, I listen to what the artist has to say and integrate their needs with what I feel I need to do.

What are your favorite venues?

My favorites are usually because they sound good and not necessarily because they are easy to work in. Red Rocks [Colorado] comes to mind. I love the place, but it is a real pain to get in and out of. The Gorge in Washington, Pine Knob in Michigan, Xcel Energy in St. Paul, The Target Center [Minn.], The Greek in L.A., Irvine Meadows [Orange County, Calif.] and Chastain Park in Atlanta are all favorites.

Now Playing

John Prine

Sound Company: Nomad Productions
FOH Engineer/Console: Dan Lance/Yamaha DM1000
Monitor Engineer: Paul Franzen
P.A./Amps: EAW KF730s (8), EAW SB730s (2), EAW JF80 (front-fill, 2)/QSC
Monitors: EAW SM15s (8)
Microphones: Shure Beta

PHOTO JOHN CHIASSON

Foo Fighters

FOH Engineer/Console: Bryan Worthen/DiGiCo D5
Monitor Engineer/Console: Ian Beverage/Yamaha PM5D
P.A.: Rat Sound V-DOSC
Monitors: Sennheiser HSP4-EW, SK300G2 bodypack, EM300G2, Evolution EW300IEM-G2s
Microphones: Sennheiser Evolution 600/900, 431, MD431-II, KM185, MD431II; Audix i5 (snare top); ATK 4100,
Outboard Gear: Avalon 737s, rest of gear is onboard

PHOTO GETTY IMAGES

Built to Spill

FOH Engineer/Console: Ian Waters/Midas Heritage 3000, Soundcraft, Yamaha spec'd
Monitor Engineer/Console: house-provided
P.A./Amps: house-provided
Monitors: house-provided
Outboard Gear: Roland Space Echo, house-provided reverb/delays
Microphones: Sennheiser 609, Shure Beta 58

PHOTO AUTUMN DEWILDE

Songs of *Carmen* Surround Audiences

Austria's opera season once again opened in surround this year thanks to sound company Mister Master and Europe's largest natural stage: a Roman-built quarry in St. Margarethen. The city's OpernFestSpiele 2005 debuted with *Carmen* on July 13, 2005, which ran through the end of last month. Console and P.A. were provided by Multisound Veranstaltungstechnik GmbH (Vienna).

PHOTO FRANZ BALDUAF

On location at St. Margarethen for Carmen

Mister Master's team, including Martin Mayer (sound design, production manager and FOH), Phillip "Fips" Rauchwarter (FOH operator), system engineers Paul Legat and David Lucka, and Diana Mayer-Blaimschein (assistant, artist and wireless supervisor) set up 5.1 sound using 16 Bose 802s driven by Crest 6001 amps mounted on flagpoles in a U shape. Onstage, four Bose 802s were driven by Crest 6001 amps and six d&b L-160 active speakers, with JBL EON 15 speakers backstage. The main P.A. included six d&b Q1s and two d&b D12 controller amps for each position. Mayer worked on a Yamaha DM2000, with Yamaha and Quantec outboard gear. Schoeps and Sanken mics were featured throughout, as well as Shure bodypacks.

F resh from the release of his first solo CD, *TheFutureEmbrace*, Billy Corgan (of Smashing Pumpkins fame) has hit the road with a vibrant aural and visual show that was specifically designed for intimate venues. Following the show's European leg, *Mix* caught up with Corgan and camp in the midst of their North American tour at San Francisco's Fillmore in mid-July. The tour will soon head out to Australia and Japan.

Photos & Text by Steve Jennings

BILLY CORGAN
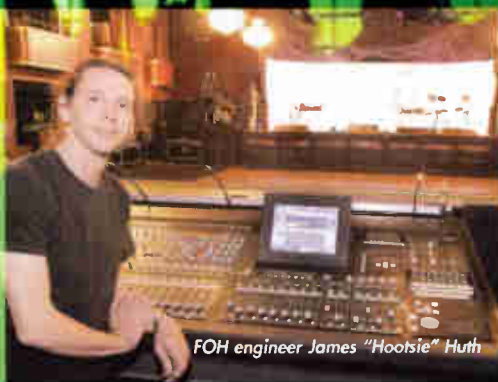
FOH engineer James "Hootsie" Huth

Front-of-house engineer James "Hootsie" Huth travels with a Yamaha PM5DRH, citing the board's recall features as important for the show; Huth normally works on a Harrison, Midas XL4 or other large-frame analog console. "We have 40 inputs including 24 channels of stems from an HD24 machine. I also have a couple Clair iOs for system EQ."

Gear at the house position includes an Eventide H3500, TC Electronic 2290 and a Summit Audio DCL-200 tube compressor "for staples, as digital gear can be so cold," Huth says. "For Billy's vocal mic, we started with a Neumann 105, but with our video wall encompassing the stage like a parabolic reflector, we had to go to a Shure SM58. We've been happy with it.

"This is one of those short, small tours that requires the crew working together as a tight unit," Huth continues. "Billy consistently asks the audience to be open to new ideas. I have worked with him before and admire his confidence in his own ability and to not be a puppet for the masses."

According to backline tech Mike Dean, keyboardist Brian Lissegang's setup comprises an M-Audio Radium 61 keyboard connected through USB to an iMac G4 running OS 10.4. All sounds are created in Propellerhead Reason. The audio interface is a MOTU 828 mkII with a simple left/right send. "We also send a guitar part to a Korg Kaoss pad," Dean says, "and returned to FOH to have it effected manually."

Keyboardist Linda Strawberry plays on an M-Audio Radium 61 keyboard that is MIDI'd to a Clavia Nord modular keyboard.

Matt Walker's drum sounds come from a Yamaha DT-Xtreme II drum trigger module. "We mostly use our own sampled sounds triggered by seven Yamaha drum pads," says backline tech Mike Dean.

Monitor engineer Dave "Ski" Lagodzinski is working on a Yamaha DM2000. "Hootsie and I had long discussions about what we were going to use," he recalls. "We had a very small footprint first. Then we had to take into account flying around the world with them, so weight was also a big issue.

"Mixing for Billy is a challenge," the engineer continues. "He's really a full-on studio guy so his ear mix [he uses Sensaphonics] reflects that. His mix has to be a fully mixed-down studio sound." Lagodzinski is also carrying Sennheiser 300 IEMs, which are "the only transmitters I'll use," he says. "I've got a Drawmer tube limiter inserted on Billy's ear mix to warm up the sound. But Billy is truly the artist; I'm just the guy holding the brushes. The picture is a fully finished work in his head. It's my job to bring it to life."

Monitor engineer Dave "Ski" Lagodzinski

BECK

Front-of-house engineer Sean "Sully" Sullivan

Hand-Clappin' Table-Slappin' Fun Onstage

BY SARAH JONES   **Photography by Steve Jennings**

There will be dining room tables onstage," Beck recently said in *Rolling Stone*, "and meals will be had." Hinting at culinary surprises, the reigning champ of rock 'n' roll irony announced his upcoming U.S. tour, which follows his latest release, *Guero*, the wildly successful result of his latest collaboration with the Dust Brothers. Beck played a string of early West Coast dates in July to warm up for the "official" fall tour; *Mix* caught stops at the San Jose Civic Center and the Bill Graham Civic Auditorium in San Francisco.

Sound for the tour is provided by Clair Bros.; front of house is being mixed by Sean "Sully" Sullivan, a touring veteran who recently wrapped up arena gigs with Mary J. Blige, Justin Timberlake and, most recently, Ashlee Simpson, joining the Beck crew for five-and-a-half weeks in Europe before the U.S. schedule.

The pre-tour shows hit mid-sized venues, ranging from 2,000 to 8,000 seaters. Used to working in arenas and at open-air festivals, Sullivan faced P.A. limitations in the smaller halls. "The weight restrictions are way lower than what you really need; I have to spec a lot of front-fills for that reason, but I'd much rather be able to put the P.A. up," he says. His rig is a Clair Bros. i4 curved linear array with T-2 double-18 subs. The band is relying on wedge monitors (Clair 12am and double 12am; sidefills are a Clair R-4 over a Showco Prism II sub per side), so the sound team recently began experimenting with Clair's version of cardioid sub stacks to help keep the "wall of sound" under control. "The monitor engineer [Maurizio Gennari] and I both have a lot of firepower. We don't necessarily fight each other, but we're not necessarily helping each other," Sullivan continues "This show has a tremendous amount of bottom end, and Beck's not always a really loud singer, so it kind of makes it hard for him to hear

himself onstage at times. The drummer is the only one on in-ears, so the amount of low end that I'm mixing is killing the stage. What I'm trying to do is not necessarily a cardioid sub pattern, but there's a lot of cancellation behind the stack by the way we're doing it." Although the thick Dust Brothers–influenced tracks lean toward heavy bass energy, the arrangements add definition to the stage mix. "His music has a lot of space: When he's wailing on guitar, he's not trying to sing. He helps me on that point."

THE INCREDIBLE SHRINKING FOH

Sullivan spec'd a highly compact FOH rig based around a Yamaha PM5D board and a pared-down rack of outboard essentials: a TC Electronic 2290 delay, two Eventide Eclipse multi-effects units, a Big Muff stomp box for distortion on vocals and a Focusrite ISA430 Producer Pack mic pre/compressor/EQ. A minimalist, Sullivan shies away from schlepping overblown gear rigs and large-format boards around the world. "I don't have an ego problem. I just bring what I need," he jokingly says.

Keeping Beck's restrained vocal clearly defined in the mix is paramount. "I'm definitely compressing and EQ'ing it to get it in front of everything else out here," Sullivan says. "The mic goes straight into the Focusrite and into a line input." All EQ and compression on Beck's vocal is through the Focusrite 430. "I don't have to worry about scenes, and the vocals will sound consistent from song to song," he explains. "There are 75 to 80 songs rehearsed and I have a scene for almost every one of them." Mixing Beck can be an exercise in spontaneity; the 90-minute set list changes every night, based on "whatever he feels like putting together," Sullivan says. "We'll soundcheck 12 songs and won't do any of them that night. But we always have similar starts and endings."

All other dynamic processing is done inside the console. Sullivan also taps into Yamaha's channel strip plug-in package and runs Studio Manager on his laptop. Sullivan says he's "pretty happy with the PM5D. It's limited on channels—56 mics in and eight lines in at a time—and I'm using every single one of them. I'm even 'Y-ing' a lot of microphones onstage. But since we are carrying our consoles with backline, we didn't want a massive set of board groups and I prefer a programmable console." He archives the shows with MOTU's Digital Performer, running on a G4 Powerbook rig with a Metric Halo 2882+DSP Firewire interface. The monitor

setup largely mirrors FOH, including another PM5D, and a TC Electronic 2290 delay and 1128 EQs for all mixes except the drummer, who mixes his in-ears with a Yamaha 01V.

MULTITASKING MUSICIANS, MULTITASKING MICS

Instruments clutter the stage— "We always say it looks like Guitar Center threw up onstage," Sullivan says—and backline includes two guitars, bass, synth bass, keyboards and drums; all bandmembers double on percussion at their stations. Congas, bongos and even a cocktail kit are shared by Beck, the keyboard player, the second guitar player and an interpretive dancer. In addition, the drummer plays loops and triggers from an Akai MPC, and the keyboard player runs loops, effects and samples in Reason and Ableton Live. "It's really just for the exotic stuff—sounds that were not made with traditional instruments, which he has a lot of," Sullivan says. "It's controlled chaos."

The mic list is routine, with a few exceptions. Beck sings into an Audix OM6, while the rest of the band use Shure Beta 58s; guitars are all Shure KSM32s. The drum kit is mostly Shure, with a VP88 on overheads, "which isn't really that standard, but for me it is. The VP88 is a mid-side [M-S] configuration. I use the PM5D's internal M-S decoder to vary the width from near-mono to beyond stereo. Placement is behind the drummer, kind of above his head for more of a kit sound," Sullivan explains. "I'm not really a fan of close-miking overheads, so that's more like a drum ambient kit mic." Snares are 57s, kick is a Beta 52 and toms are Audio-Technica Artist Elite AE3000s. As for the hi-hat, "It is not really just a hi-hat mic; there's a bunch of percussion stuff he has over there, so one KSM32 is used as an area mic for all of it."

ABOUT THAT MEAL

About halfway through the show, the dining room scene Beck alluded to finally materializes onstage, when the band gathers around a dinner table to share a meal while Beck works through a solo guitar set featuring medleys of acoustic ballads and, occasionally, somewhat bastardized versions of pop hits. (Nelly's "Hot in Herre" and Prince's "Purple Rain" were covered at the San Jose show.) Little by little, the bandmembers quietly begin swirling their water glasses, tapping their plates

Monitor-engineer Maurizio Gennari

and bowls and thumping on the table, eventually building to a crescendo for the percussive grooves of "Clap Hands."

Miking the frenzied table action was a double challenge: Because the tabletop was projected onto a large overhead screen, mic visibility had to be kept to a minimum. Sullivan also needed to minimize mic inputs going into the PM5D. Shure SM91 boundary mics were a random experiment that ended up working perfectly. "I had never miked a table; what do you put on it?" Sullivan questions. "Beck happened to have a 91 in his trunk. We tried it in rehearsal, and it worked really well."

Two contact pickups mounted on the wine glasses' stems are routed through a Smokey mini amplifier that "looks like a cigarette pack with a cigarette in it," Sullivan describes. "We point that at the 91s. We really don't have inputs; that's why we're doing it like that. It's quiet [onstage then]—if there was anything else going on, we wouldn't be able to do it." There are no effects on the feeds from the tabletop. "I tried putting a little ambience on it, but you know most of these buildings have that built-in," he says.

Glasses are tuned so that the keyboardist can play them during a song. The crew researched using pre-tuned glasses, but "we found that they were a couple hundred bucks a piece," Sullivan remembers. "We use Crate and Barrel [glasses]; you take five of them out of the box, they all look the same, three sound like garbage, one will sound good and one will sound great. None of us ever knew [what it would sound like] until we miked a table and listened to it." He adds that the bass tech is doubling as a glass tech.

This month, Beck returns for his full-fledged U.S. tour, including select dates opening for the Rolling Stones. Hopefully, that fine stemware will hold up. ∎

Sarah Jones is Mix's *features editor.*

ROBERT PLANT

PHOTO: DAVE VANN

THE CRAFT OF MUSIC AND LIVE SOUND

BY CRAIG DALTON

PHOTO: DAVE VANN

Thunder Audio VP Paul Owen; front-of-house engineer Roy Williams declined to be photographed.

A name synonymous with rock 'n' roll for more than 35 years, you would expect a Robert Plant show to sound technically good. After all, who's had more resources and access to the best skilled audio professionals in the world? As in the past, Plant's performances were put in the hands of sound reinforcement masters with years of experience.

Thunder Audio (Taylor, Mich.) received the nod from the Plant organization based on the years of experience that company VP Paul Owen brings to the table. As a monitor engineer, Owen has spent 19 years with Metallica, as well as riding the monitor faders for AC/DC, Def Leppard, Tesla and many more. He's known Plant's front-of-house engineer, Roy Williams, for 25 years.

The live sound business is filled with big egos, but you won't find a more reserved sound professional than Williams. Camera-shy and soft-spoken, he's had a longtime friendship with Plant and was involved in bringing the right mix to concertgoers during the beginning of the Page/Plant reunion in the early '90s.

Mix caught up with the tour at Meadowbrook Music Festival, a beautiful 7,500-person capacity shed tucked away in the woods at Oakland University in Auburn Hills, Mich., in early July. While the night brought seasonal Midwestern humidity and menacing thunderstorms, the sound crew maintained their focus on the task at hand: adjusting equalization using the Lake Technology Mesa software and tablet.

TESTING THE VOCAL MIX

Running through his currently air-played "Shine It All Around" during soundcheck, the technically adept Plant makes suggestions on the vocal mix. "He likes to hear it coming back from the front, what the audience hears," says Williams. "He's very old-school; not afraid of technology at all, mind you. But look at the stage setup: It's very tight so he can be in touch with the band at all times."

Backing Plant is The Strange Sensation, a stellar group comprising old friends and new: John Baggott, Moogs/Wurlitzer

World Radio History

pianos; Justin Adams, guitar; Billy Fuller, bass; Skin Tyson, guitar; and Clive Deamer, drums. There are a variety of instruments used during the show—lots of guitars, of course—including various rhythm and acoustic instruments; analog keyboards provided a true variety of sonic architecture in each song. With new versions of Led Zeppelin classics and the Celtic/Middle Eastern/pop/jazz/Zeppelin influences, there's quite a challenge in keeping it all correctly mixed as the bandmembers frequently change instruments throughout the show.

Williams and Plant have a surprising approach to all of this. These days, where compression and gates are staples in controlling what happens where in the mix, Williams uses very little. "Most of the mics are open all the time; I do very little to them. It all kind of bleeds and works together well when you have pros like this," Williams says. When asked how he works with a voice with so much character and a readily identifiable sonic signature, Williams points out that the sound is basically all Plant, with a bit of Yamaha SPX-90 and Lexicon MPX550 added in at different times for vocal effects processing from Plant's Shure SM58.

"I particularly like that little faint sizzle sound that the 550 tends to give off when Robert's really pushing it," Williams says. There is no exact choreographed vocal effect plan, as you might expect, "he just trusts me to do what's appropriate at the song and moment." As far as instruments go, he uses a little compression on the Moog synthesizer at times, particularly when a song called "The Enchanter" from Plant's new album, *Mighty Rearranger*, hits huge low-register notes during the choruses.

FINDING THE RIGHT P.A.

While Williams is busy paying attention to his Midas XL3000 board during the show, the crowd delights to an excellent mix: not overwhelming in volume, but subtle, warm and powerful at all the right moments. Williams walks from the mix position shelter during the show and motions me to walk down five rows under the roof of the shed to get the full sound of the system. At the end of the show, the highest SPLs have been reserved for the new rendition of Zep classic "Whole Lotta Love," which leaves the crowd screaming for more.

Both the crew and sound company share an enthusiasm for the Meyer Sound MILO high-power curvilinear system (including 34 cabinets) used on the tour, which Thunder Audio recently purchased specifically for this tour. Both Owen and Williams express enthusiasm for the system on all counts, including sound quality, reliability and ease of servicing. As an added bonus, "just being able to eliminate all those power amp racks is great for us," comments Owen.

Serviceability is also a key factor. "One night, something didn't get loaded exactly right, and in transit, a cabinet got bumped hard from behind on the truck, smashing the jacks. It was simply a matter of sliding out the power amp, throwing a couple new ones in and putting it back in—only taking a few minutes. You can't do that with a lot of other powered cabinets!"

But while the tour is carrying a slew of high-end gear, the relationship between the engineer and performer remains paramount. "Robert's always reinventing his music, and I'm pretty old-school," Williams says between the soundcheck and the show. "If it isn't broken, don't fix it. I've known Robert for many years; he trusts me to do what I think works best. You know when you're having a good night, and the trick is to try to make that happen all the time. That's the real challenge." ∎

Craig Dalton is a Chicago-based writer and musician.

World Radio History

New Sound Reinforcement Products

AUDIO-TECHNICA 3000 SERIES

Audio-Technica (www. audio-technica.com) has enhanced its 3000 Series UHF true-diversity wireless systems with Automatic Frequency Scanning, which automatically determines and sets the best available open frequency. Particularly useful when using multiple wireless systems, AFS avoids interference and intermodulation. The frequency-agile 3000 Series offers up to 16 simultaneous systems per frequency band, for a maximum of 32 simultaneous systems across two UHF bands (541.5 to 566.375 MHz and 655.5 to 680.375 MHz) with 200 selectable frequencies in each band. Two options are available (both include the ATW-R3100 receiver and rackmount hardware): the $699 ATW-3110a UniPak™ comes with a ATW-T310 bodypack and the $799 ATW-3141a system has a ATW-T341 handheld transmitter with the same capsule as the company's Artist Elite AE4100 mic. Both transmitters run from six to 10 hours on two AA batteries.

KV2 EX12 SPEAKER

Unveiled at Summer NAMM, the EX12 high-output active speaker from KV² Audio (dist. by American Music & Sound, www. americanmusicandsound .com, $2,499) features a new 3-inch titanium-diaphragm compression driver offering a large neodymium magnetic motor structure. The 12-inch woofer uses a trans-coil technology that eliminates voice coil inductance, behaving like a woofer at lower frequencies and like a midrange at higher frequencies. The 500W, internally bi-amped system can reach sustained SPLs of 127 dB, and features an asymmetrical, trapezoidal Baltic Birch cabinet with side handles, M10 hang points and Omnimount™ compatibility; also available is the EX12t touring version with recessed fly track.

K+H WIRELESS LOUDSPEAKER

Now distributed in the U.S. by Sennheiser (www.sennheiserusa .com), the new Klein + Hummel freePORT™ PAS 400 self-powered speaker accommodates up to four Evolution G2 Series wireless receivers and features an integrated mixer and 100W amp, with built-in rechargeable battery or AC-powered operation. The system has dual 6.5-inch woofers, a 1-inch compresion driver/horn and can deliver 116dB SPLs. An integrated mixer offers level control of two mic inputs, an auxiliary line-level input and a dedicated channel for the Sennheiser receivers.

CAD TOURING DRUM MIC PACK

CAD Microphones' (www.cadmics.com, $149.99) 4-piece Drum Mic Touring Pack comprises a KM212 dynamic kick drum mic, two TM211 dynamic tom mics and one SN210 snare mic. The KM212 captures high-SPL sources (kicks, bass amps, etc.) with frequencies below 100 Hz. The tight cardioid TM211 and supercardioid SN210 offer excellent isolation from other drums; both models include CAD's patented angle-adjustable rim-mount drum clips for easy setup and no need for mic stands, for a clean stage look and less gear to pack.
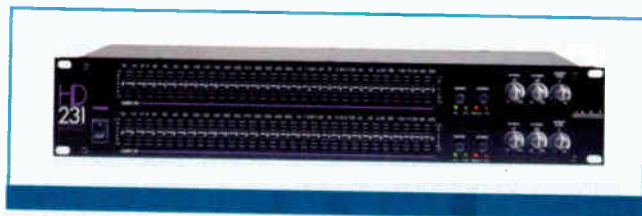
ART HD SERIES GRAPHICS

Applied Research and Technology's (www.artproaudio.com) HD Series graphic EQs are engineered for high standards in audio performance, with precision 1% resistors in the filter sets and ultralow-noise/low-distortion active gain elements for a dynamic range spec exceeding 117 dB. Available are single ($219) and dual ($359) 31-band models and a dual 15-band version ($219)—all with independent variable high/lowpass filters. Also standard are automatic relay bypass, variable input level control, clip level indicator, RFI filtering, selectable-scale ±6/±12dB switching and active balanced XLR and Euroblock connectors. A Bypass switch allows for direct comparison between the equalized and non-equalized signal for each channel.

INTER-M KENSINGTON CONSOLES

Available in frame sizes including 24, 32 and 40-channel models, the new Kensington Series of mixing consoles from Inter-M (www. inter-m.net) brings together the expertise and experience of a renowned team of design engineers led by Miyajaki Yuichi of Inter-M and Audient's Dave Dearden. Features include true LCR mixing, low-noise preamps, 4-band "British" equalizer with swept midbands, sweepable highpass filtering, eight aux sends with pre-fader switching, four mute groups and direct outputs. A Fader Flip function creates a dual-purpose FOH and monitor console, and an optional meter bridge shows all subgroup and main outputs.

INTRODUCING THE ADL 600.

600 VOLTS OF TUBE NIRVANA.

Several years ago, Anthony DeMaria, President of Anthony DeMaria Labs and Jim Odom, President of PreSonus met at an AES show in New York. Jim noticed a prototype microphone preamplifier lurking in the back of the ADL booth and was intrigued. After chatting with Anthony about the design – three tubes per channel, dual input/output transformers, 600 volt power rails – he had to hear it. Totally floored by the mammoth sound and complete absence of noise, Jim was convinced this was a match made in sonic nirvana. Designed by Anthony DeMaria, engineered and manufactured by PreSonus in the USA, the ADL 600 is a microphone preamplifier that has a sonic character like no other.

The Sales Engineers at Sweetwater have heard every microphone preamplifier under the sun, so it's unusual that a new preamp really gets them excited. That's why when we let them hear the ADL 600, we knew we were on to something. Like Jim and Anthony, Sweetwater instantly recognized the ADL 600 as something truly special. Ask your Sales Engineer about the ADL 600's sonic character, and hear it for yourself in action at www.sweetwater.com/adl600.

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When the Chips Are Down

The Forest, Trees and Leaves of Maintenance

I have always been a hands-on technician, but two recent events provided a refresher course in the challenges facing large-scale operations. As an employer for the first time in 11 years, I am reminded of needing to be organized, thinking ahead (order service manuals and parts), anticipating problems (odd failures rather than typical ones) and having spare assemblies. Finding good help is not easy. Assuming minimal turnover, training workers is an optimistic investment, with the payoff being greater productivity.

Finding replacement pots for particular pieces of gear—such as the concentric depth/frequency control on this Lexicon Prime Time—can be tricky.

THINKING OUTSIDE THE DECADE BOX

Eleven years ago, technology was advancing faster than my employees' skills, so I downsized the company and went solo. This new "freedom" to take chances allowed new opportunities in video, one being a vacation relief gig that turned into a full-time job.

Video forced me to think way outside the box. That technology's complexity—integrating hardware and software, networking, data compression and the Internet—foreshadowed audio's future, as hardware was simply too complex to repair in-house at the component level. It was the beginning of my transition to the "systems" level of maintenance, something my video

Axial capacitors have one lead out each end, while radial capacitors have both leads exiting the bottom.

friends jokingly referred to as Mail-Order Maintenance, or MOM for short.

MOM still requires troubleshooting skills, but only down to the equipment, interface or the subsystem (circuit board) level. Back then, we had spare boards to swap and overnight shipping. Now we can go to almost any consumer electronics/office supply store and grab a hard drive, media burner, monitor, cable or even a motherboard.

In this respect, computers have standardized the most common spare parts required for a multimedia facility, but they have also contributed to component availability shrinkage—let's call that CAS. Here in audio land, we have one foot in the future and the other in the past. And while vacuum tubes and, more recently, audio recording tape have been reborn as boutique products, other components are joining the endangered species list.

Computers and related compact, ultra-miniaturized products (like cell phones) are possible thanks to surface-mount technology (SMT), which is driving the electronic component manufacturers away from making stuff with "legs." (The wires that dangled from traditional transistors, capacitors, etc., are known as "leads.") And so, in the interest of cramming as many components in the least amount of real estate, axial-style capacitors, for example, are being dropped in favor of the radial package and audio-grade transistors are becoming harder to find.

A LITTLE TRAVELIN' MUSIC

No discussion of MOM is complete without addressing shipping issues. No matter what your preferred carrier, it's important to pack defensively to minimize damage potential. The most obvious is physical damage to the face plate (bending around the rack ears), but hidden damage to PCBs is bad news. Large power transformers will warp the chassis if the unit is dropped and not adequately cushioned.

Despite how much you want to scream at the shipping company, poor packing results in the most amount of damage. Even then, I still insure for list price or replacement value, whichever is higher. I also add repair cost to the product value. It increases shipping costs, but that's a small price to pay relative to the hassle of receiving compensation for damaged equipment.

SPARE BITS

I've long been a believer in stocking common components, which is even more important when an additional person is on the clock. From a facility-management perspective, the same applies, only now the "spares kit" is more likely to include "assemblies" such as redundant hardware (amplifiers, computers, displays, etc.), cards, modules and data drives. MOM has never been more true than it is now.

THE LEAVES

One look at all the current offerings of retro gear (and the message boards) proves that near-fossilized technology is being reborn and restored at a frenzied pace. I'm starting here because this stuff is the most

serviceable due to the historical factor, simplicity and, of course, vintage sonics.

The pots and switches used in vacuum tube and discrete transistor gear generally respond favorably to cleaning and are typically hardwired, so they can be disassembled, evaluated and replaced with off-the-shelf parts. When disassembling pots, look for a tiny carbon contact on the wiper (both U.S.-made Allen-Bradley and its Euro counterpart). If these fall out and are lost, then the pot will be rendered useless. On switches and pots, look for silver or carbon (respectively) that has worn away.

The transition to PCB-mounted components is not great news—especially for pots—on multiple levels. PCB-mounted pots are more susceptible to physical damage than hardwired types. Multi-section pots are considered custom, so if the equipment manufacturer no longer stocks spare parts, see the "ALT_SPARE_PARTS" heading for replacement options.

The Lexicon Prime Time (Model 93) uses a concentric Allen-Bradley "mod pot" for modulation depth and frequency. Aggressive flexing or bashing of the front panel apparently cracked the carbon element. Damage such as this is typical in console modules and rackmount gear. Luckily, the pot was screwed together instead of riveted so I was able to make one good pot from two damaged pots. (The customer gave us three carcasses from which to make a working unit.)

THE TREES

Zooming out from components to modules can change one's relationship with the equipment. The most obvious and easiest example of "modular" is a recording console, but any device with interchangeable PCBs will do. The goal is to isolate a defective module or PCB and then either have a spare or be able to read a schematic to determine which IC has gone bad. This is oversimplified, of course, but comparative analysis is your friend. An oscilloscope is handy, too.

Interconnections are the least technically complex, but are potentially the most problematic. In the '70s, manufacturers chose a variety of multipin connectors to facilitate PCB interconnection and replacement. Jones plugs and Molex connectors were MCI's downfall then, but similar problems plagued the Alesis BRC (ADAT remote control) and, more recently, the Digidesign 002 controller. In the latter two cases, the current requirements of the logic circuitry were too much for the connector, causing the contacts to oxidize, resulting in bizarre, intermittent

digital weirdness. Alesis solved the problem by removing the connector and soldering the harness in. Digidesign has upgraded the cable assembly.

One fascinating aspect of connector technology can be found when searching through a manufacturer's catalog. You may find several contact options for a single connector. For example, a Sound Workshop console's ribbon cable was outfitted with single-point contact Molex connectors that I upgraded to trifurcated (three-point contact) female connectors and gold male pins.

ALT_SPARE_PARTS

At this point, whether the gear is vintage or recent will determine the challenge of obtaining spares. One of the biggest intermediaries for spare parts is eBay, which I've used for early Sony black-and-white, open-reel video recorders. But be warned that there are people out there buying up gear, assembling a "best of" and then reselling the dregs. *Caveat emptor!*

THE FOREST

The frequency of technological change is constantly increasing. And while it's possible to technically keep up with the gear, the economics is another story entirely. Build a piece of retro gear and you might as well be in the 16th century—some of the main components can be pricey, plus there's a good deal of hand assembly.

In contrast, modern robotic assembly methods require a minimum order of 1,000 pieces or so to take advantage of any significant economy of scale. At this level, gear is often too cheap or too complex to repair, so any maintenance focus is on interface (compatibility and troubleshooting), backups and spares.

LAST TWEAK

Troubleshooting down to the component level requires concentration and time—luxuries not often available in "live" environments such as broadcast or performance. This is further hampered by large-scale integration, circuit complexity and miniaturization—all developments that can be intimidating to those who don't deal with it every day. And unless your organization is particularly well-staffed, there are often too many distractions to allow such work to be completed in a timely fashion. ∎

Eddie is still celebrating his birthday, so if the aroma of eggplant parmigiano drifts your way, surf over to www.tangible-technology .com for a closer look.

Tools of the Trade

YAMAHA AW1600/AW2400 DESKTOP RECORDERS

The latest additions to Yamaha's (www.yamaha.com) AW line of desktop multitracks offer faster processing, more effects, internal CD recorders and 40GB hard drives. The AW1600 ($1,495) features eight phantom-powered combo inputs, a USB 2 port for drag-and-drop file transfer to a computer and the new SH3 CPU processor. Other features include a 16-channel mixer (eight mono and four stereo channels), Quick Loop Sample function, hi-Z connection, guitar and mastering effects and sample pads. The AW2400 ($2,499) features motorized 100mm faders, a 12-channel mixer, 24 simultaneous tracks of playback (each with up to eight associated virtual tracks), sampling, editing, automation/ snapshot and mastering capabilities—all at 24-bit resolution. The AW2400 is expandable via a range of optional I/O interface cards from Yamaha and third-party developers.

power for each channel, transformer-balanced outs, low inertial loss and nearly flat frequency response. The Alphaton product line includes professional active and passive microphone and line-level splitting systems for P.A. and installed sound and studio applications, high-quality DI boxes, test and measurement equipment for stage and installed sound systems, and transformers, adapters and accessories.

HHB CDP-88 CD PLAYER

Bursting with pro features, the new single-rackspace CDP-88 CD player from HHB (dist. by Sennheiser, www.sennheiserusa .com) is compatible with 8- and 12cm discs and will play CD and MP3-CD audio from CD, CD-R and CD-RW discs. It will also play unfinalized CD-R/RW discs and indicate error rates via the front panel display. The unit will sync to word clock at any frequency from 32 to 96 kHz

LAWO ALPHATON MPV-43 SPLITTER

The Alphaton MPV-43P from Lawo (www.lawo.de, $519) offers a simple way to split mic or line-level signals (1 in/3 out). The 4-channel unit features individually switchable phantom

(even in varispeed at ±12.5%), and offers a RAM buffer for instant start, a playback shock buffer and a digital output attenuator. Output is on balanced XLR and unbalanced RCA connectors, with digital output in AES/ EBU and S/PDIF formats. Remote control is provided on RS232 and parallel remote connections. An infrared remote control

is convertible into a wired remote via the supplied cable.

MUSIC 2 HUES THEME PACK SERIES

Five new collections from Music 2 Hues (www.music2hues.com) each feature five audio CDs and one DVD-ROM with music beds based on the same style. The files come in standard audio CD format, and MP3 and .WAV files on DVD-ROM. Each Theme Pack package also includes 100 sound effects. The musical themes range from High Energy & Sports to Hot Grooves (pop, hip hop, dance and rave), Rock Guitar (powerhouse electric guitar backed by bass, drums and keyboards), Orchestral (solo violin to full orchestra) and Acoustic Guitar (six- and 12-string guitars in solo and band-backed accompaniments). Prices: $149 each, or $599 for all five packs.

ZALMAN TNN 500AF COMPUTER CASE

"Shhhhhh!" is something you never want to say to your computer in the audio environment, and Zalman (www. zalmanusa.com) agrees. Its TNN 500AF ($1,499) computer case promises to be a truly noiseless high-end computer case that won't eat up valuable studio space. The fanless box uses heat pipes and high-thermal-capacity aluminium heat sinks for efficient cooling. Other features include a high-efficiency 400W power supply, electromagnetic

interference shielding, a wireless remote, antitheft lock, casters and foldable handles. The Website features a how-to install movie that will help make it a breeze to incorporate the case into any setup.

M-AUDIO ICONTROL

Desktop control of Apple's GarageBand just got easier with M-Audio's (www. m-audio.com) iControl ($179), which communicates with a Mac via USB and offers dedicated transport buttons, a jog wheel for scrubbing playback and a master volume fader. The unit can control eight tracks at a time with dedicated buttons for solo, mute and record, as well as eight rotary encoders that users can easily assign to control volume and pan and other functions. Pressing the Up/Down buttons assigns the eight sets of track controls to the higher or lower groupings of tracks. The unit is bus-powered and includes a standard MIDI input, allowing GarageBand instruments to be played by an external keyboard. The iControl control surface will be supported in upcoming updates of Logic Express 7 and Logic Pro 7.

SONIC IMPLANTS COMPLETE SYMPHONIC COLLECTION

Partnering with Tascam, Sonic Implants (www.sonicimplants.com) has created the first symphonic library designed specifically for GigaStudio 3.1. The Complete Symphonic Collection ($2,995) takes advantage of new features in GigaStudio 3.1 to bring new realism to sample-based string performance. Truly a load-and-go library, the collection

uses GigaStudio's iMIDI functionality to create intricate programming for a new legato function, repetition programs and many other unique programs—all in a behind-the-scenes fashion, letting users spend more time creatively and less on setup. Workflow enhancements include the Stack Instrument Selection feature, which lets users assign keyswitches to swap sounds on a MIDI channel during a performance; drag-and-drop creation of GigaPulse presets; user interface enhancements; and comprehensive keyboard shortcuts.

EDIROL MA-1EX SPEAKERS

Ever wanted a bit more *oomph* from your Mac or PC's laptop speakers when you're editing on-the-go, but power and space restrictions kept you from being satisfied? Then Edirol's (www. edirol.com) MA-1EX ($80) speakers just might be the ticket. The plug-and-play, bus-powered speakers feature a bass enhancer, front-mounted volume control, ⅛-inch headphone jack and S/PDIF output. To keep everything tidy, an integrated USB cord wrap is provided for portable cable management.

BOSS BR-1200CD RECORDER

The BR-1200CD multitrack from BOSS (www.rolandus.com, $1,299) is a 12-track recorder packed with effects from Roland

and Boss, including COSM amp and mic models, the Roland JC-120 Jazz Chorus and a bevy of BOSS compact pedals. A true producer's studio-in-a-box, the unit offers pitch correction, a mastering tool kit and onboard bass and drum programmer with instruments and patterns included. The box interfaces via USB with either a Mac (OS X) or PC, and includes an onboard CD burner and an internal hard drive.

MERGING TECHNOLOGIES ISIS CONTROLLER

Adding a tactile face to the Pyramix software and VCube and VCube HD-2K video player/recorders, Merging Technologies' (www.merging.com) Isis Remote Controller features large dedicated machine control keys, high-resolution jog/shuttle/scrub functionality and advanced jogwheel editing capabilities. Other features include user-assignable keys positioned around a large LCD, a master fader section and 24 additional user-definable keys. The keys comprise two layers that can be used as 48 direct-access solo/mute/track-arming keys, locators, cue triggers or any other chosen function. A separate and optional eight-fader expansion unit (FE) offers eight rotary encoders and 100mm touch-sensitive moving faders with dedicated Solo, Mute, Read and Write automation keys, and connects to Pyramix's Ethernet port or any Ethernet switch in a networked environment. Price: Isis Remote Controller, $3,040; FE expansion unit, $3,040.

SOUNDLABEL PIANO ATTACK

Promising to do "everything you've ever wanted to do to a piano but were afraid

to try," the folks at Soundlabel (www. soundlabel.com, $249) are offering a unique sample collection of a hammered, prepared and abused piano (destroying a piano during the recording process). The collection is targeted for composers, musicians and sound designers looking for audio clips from a simple brush of the hand over the strings to very complex-sounding beats, phrases and soundscapes. Audio formats include .WAV, REX2 and Apple Loops. Supported samplers include EXS24, HALion, Reason Refill and Kontakt 2. Logic Pro 7 users can take advantage of 390 channel strip presets.

FOCUSRITE OCTOPRE LE

Billed as the "lite" version of its OctoPre, Focusrite's (www.focusrite .com) OctoPre LE ($695) offers eight channels of Focusrite preamps, including two Super Channels featuring mic impedance matching and instrument DI inputs. An optional AD/DA board ($250) lets users make

the most of free ADAT inputs and outputs for tracking and monitoring. The AD/DA option also includes word clock I/O and 256x clock for Pro Tools Legacy users. The single-rackspace unit boasts analog THD at 0.003% with 0dBu input (maximum gain), frequency response that is 3 dB down at 200 kHz and a signal-to-noise ratio of 124 dB. Digital dynamic range is 110 dB.

PROPELLERHEAD ELECTROMECHANICAL 2 REFILL

Startling and enticing Reason 3 users with the "F" word (free!), Propellerhead Software (www.propellerheads.se) is offering its ElectroMechanical 2 ReFill gratis. The collection offers sound

patches and files of vintage keyboard classics, such as the Fender Rhodes, Wurlitzer electric piano, Hammond organ and Hohner Clavinet and Pianet that plug into Reason 3. The ReFill takes advantage of the Combinator and MClass Mastering effects and Reason 3's new Remote technology, offering plug-and-play integration with hardware controllers.

Upgrades and Updates

Celemony's (www.celemony.com) Melodyne Uno Version 1.1.2 fixes bugs and offers ReWire integration and a new recognition function. In addition, the new version will handle split-stereo–format audio files and better integration with Pro Tools using the Spot to Pro Tools function...Cakewalk (www. cakewalk.com) has released the 2.0.1 update for Project5 V. 2 as a free download. The upgrade offers sticky Now Time (restart Now Time from previous start position), display automation values in a tool tip while editing, vertical clip zoom, bounce to track, display automation values in a tool tip while editing and more...M-Audio (www.m-audio.com) has shipped GForce's virtual models of four vintage synthesizer classics: Oddity, Minimonsta, impOSCar and M-Tron. All four are Mac- and Windows-compatible, and can operate in either stand-alone mode or with VST 2 (including VSTi), RTAS or AudioUnits hosts...Yamaha is starting to flex the muscle of its new acquisition, Steinberg Media Technologies, through an upgrade program for Cubase LE, a new e-store for U.S. upgrades (www.

steinbergupgrades.com) and special upgrade incentives for Yamaha customers. Customers who currently own or purchase hardware products bundled with Cubase LE or Cubasis can inexpensively upgrade to Cubase SL or SX; customers who purchase Yamaha Studio Connections–compatible hardware products (Motif ES, Motif ES Rack, i88x, 01x, 01V96, 02R96, SPX2000) until September 30, 2005, qualify for the same special upgrade packages. See Website for details...Alienware (www.alienware.com) has announced the availability of the new Microsoft Windows XP Professional x64 operating system on the Alienware MJ-12 7550, a workstation promising faster performance and greater reliability while delivering a seamless migration to cutting-edge 64-bit applications. Windows x64 will soon be available on Alienware's other desktop workstations...MOTU has posted a free V. 4.6 upgrade to its Digital Performer audio workstation software. Digital Performer 4.5 users can download V. 4.6 from www. motu.com and begin using it immediately under Mac OS 10.3 (Panther) or 10.4 (Tiger)...

Eventide is offering a $200 limited-time rebate for its Anthology bundle of plug-ins. To claim the rebate, the purchaser must submit a completed rebate form, the original Eventide UPC barcode label and original sales receipts for the Anthology bundle and the Digidesign MassivePack or other Eventide plug-in. Visit www.eventide.com/rebate for more details...Native Instruments (www. native-instruments.com) has announced that demo versions of Guitar Combos are now available as free downloads for Windows and Mac OS X. All three combos are based on its Dynamic Tube Response technology from Guitar Rig, comprising a classic tube amplifier with a speaker box and several integrated effects...Tire kickers rejoice! Open Labs (www.openlabs.com) is offering a no-obligation, seven-day try-before-you-buy program for the NeKo 64, NeKo GS, NeKo LE and OMX/OMX64 keyboard workstations. The products can be auditioned for up to seven days from the time of receipt, and a return label with prepaid postage is included for the item to be shipped back to Open Labs. ∎

Tony Loves his Radial DI

"...my bass comes through extremely clean, very quiet, and with a smooth transparent low end. I use my Radial DI for everything."

~Tony Levin
(Peter Gabriel, King Crimson)

EVOLUTION OF THE SNAKE
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CONVERTIBLE V-12
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For over 25 years, sound companies and broadcasters have been restricted to snake systems made from a single steel panel attached to a back box. No flexibility. No way to upgrade. Suddenly, the Convertible V12 changes all the rules. Now you can order a snake system to meet today's budget and expand to meet the demands of tomorrow as you grow.

The V12 features a high-density 'rack inside a rack' design that packs up to 64 channels in less than 24". You can mix and match input and output panels, add cross-patching and sub-snakes, even load the back with multi-pins, XLRs or whatever else comes to mind. Best of all, the V12 is built tough to handle the road.

Radial Convertible V12 – the evolution of snake design!

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Apple Soundtrack Pro Audio Editor/Recorder

Upgrade Offers Enhanced Multitrack Tools, Video Integration

When Apple first unveiled Soundtrack a few years ago, I was impressed by its ability to handle loops and audio clips to quickly create music scores for picture and blend them with audio imported from Final Cut Pro video editing sessions. It was a long way from a full-on DAW, but for those who needed a quick musical fix in the industrial/business/educational video market, it did the trick.

Now, Soundtrack has grown up into Soundtrack Pro, which addresses many of the shortcomings that existed with its predecessor while adding a wealth of serious audio tools. Soundtrack Pro is no mere upgrade; it's a completely new program that retains some of the original's look and features.

Soundtrack Pro is offered at a bargain $299 (owners of earlier versions can buy it for $99), but I suspect that most users will receive the program as part of Final Cut Studio, a $1,299 suite that includes Final Cut Pro 5, Soundtrack Pro, Motion 2 graphics animation/manipulation and DVD Studio Pro 4 disk authoring. Existing Final Cut Pro owners can upgrade to the entire suite (with the Final Cut Pro 5 upgrade) for $699.

Soundtrack Pro's new functions are numerous, but before addressing those, be advised that Soundtrack Pro and the new Final Cut Pro 5 were designed around Mac OS 10.4 Tiger, so you may need to upgrade your operating system—although it can operate under OS 10.3.9. Once your OS is in order, installing Soundtrack Pro and Final Cut Pro 5 is painless. Apple recommends running the software on a 500MHz or faster Mac with a G4 or G5 processor and at least 1 GB of RAM.

Soundtrack Pro supports .AIFF, .WAV, MP3, SDII NeXT, QuickTime and STAP (Soundtrack Audio Project) file playback and can export files in STAP, .AIFF, .WAV, SDII or NeXT formats. The program is not a MIDI sequencer, but can send/receive MIDI time code and beat clock to sync with other MIDI devices. Supported sample rates range from 2 kHz to 192 kHz.

After the release of Soundtrack Pro, a number of minor bugs were addressed in Version 1.0.1, including the ability to "round
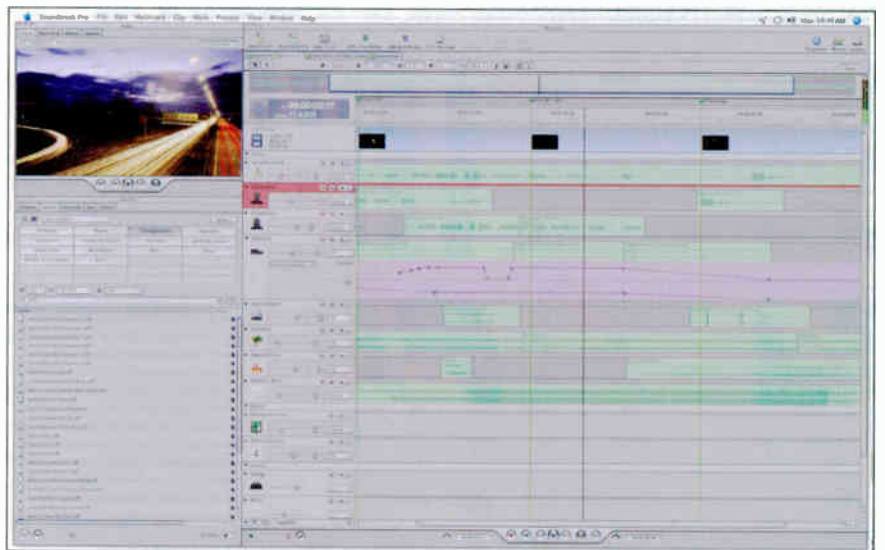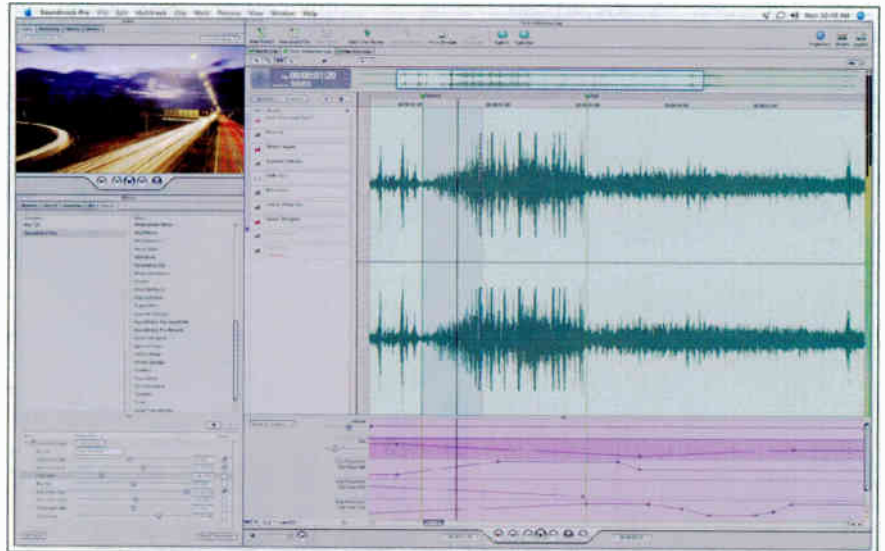
Soundtrack Pro's Waveform Editor screen (top) allows serious, detailed tweaking. The Project screen is better suited for coarser manipulations on a more global scale. The purple-shaded sections below the tracks display automated envelope changes for pan, volume and DSP parameters.

trip" a file back and forth several times between Final Cut Pro 5 and Soundtrack Pro, improved re-draws and more.

NEW FEATURES

The most important feature in Soundtrack Pro is its ability to seamlessly integrate with Final Cut Pro 5, DVD Studio Pro 4 and Motion 2, whereby multitrack clips or single files can be readily opened in Soundtrack Pro and—once tweaked—returned to Final Cut Pro 5. Editing is sample-accurate and

non-destructive, with near-unlimited undo. And Soundtrack Pro's script and batch processing can apply plug-ins, sample rate conversions, amplitude adjustments and more to dozens (or hundreds) of files at once simply by saving the Action as an AppleScript.

While not as intensive (or intimidating) as Final Cut Pro 5—with its four 400-page manuals—Soundtrack Pro (it only has a single 300-page manual) is fairly deep in scope. At the same time, Soundtrack Pro's
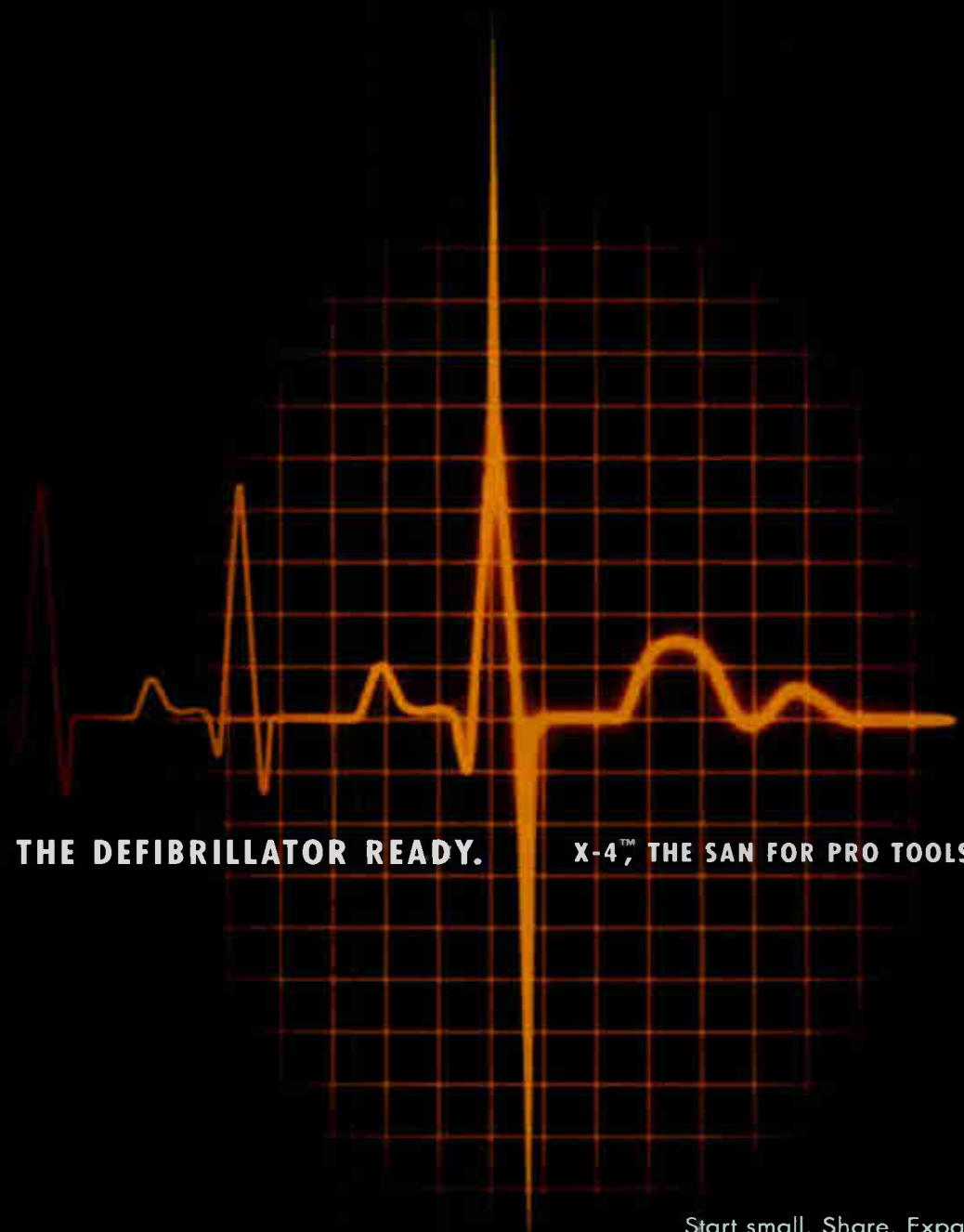
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HIGH PERFORMANCE STORAGE NETWORKING

user interface is straightforward and simple to grok. My first project on Soundtrack Pro was to create a whirling, swooshy stereo stinger to lay under a production company credit. Never one to bother reading the manuals first (this is one of those "do as I say, not as I do" rules), I dove into Soundtrack Pro, found its extensive library of sound effects and loops (more than 6,000 total), auditioned/grabbed a couple of likely candidates and proceeded to work. The entire process—editing, running part of one in reverse (building a crescendo from a decay tail), cutting in a metallic clang, adding a short reverb to that and offsetting one channel slightly to widen the stereo effect—took less than five minutes. This is without ever having used the program.

Later in the project, I *did* have to use the manuals, but the point is that most audio engineers should be comfortable in Soundtrack Pro from the onset. Apple provides print documentation (about 15 pounds' worth in the Final Cut Studio suite!), which is greatly appreciated when all you typically get today is a PDF manual on your program disk.

Soundtrack Pro has four main operating screens: the Project window, the Mixer screen, the Media & Effects Manager and the Utility window. Most work happens in the Project window, where users can arrange audio clips on the timeline and access the Waveform Editor screen. Instead of simply highlighting part of a clip and then zooming in to edit, the selected clip is brought into the Waveform Editor screen, where manipulation/edit/DSP can be applied but not moved; this requires switching back to the timeline in the Project screen. This seems clunky at first, but clicking in the track header above a track clip brings it instantly into the Waveform Editor screen.

In addition to the usual cut/paste/copy/delete functions, the Waveform Editor offers fade in/out (the duration is determined by the length of the highlighted waveform), normalize, insert silence, invert, swap channels, mono conversion, resample and a generator for creating silence, white/pink noise and sine/sawtooth/square/triangle waves. Editing multiple clips is only available on adjacent tracks stacked in the timeline.

Although it's well implemented in Final Cut Pro, one thing missing from Soundtrack Pro is the ability to lock tracks so you don't accidentally slip with the mouse and nudge a clip out of sync. I found I had to be extremely careful in this regard. Fortunately, Soundtrack Pro's excellent use of Action-based editing makes undoing any previous Action a snap. And this feature is not simply a case of "keep undo-ing until it's right," but lets users pick through a list of recent Actions and undo any specific Action(s) from the list with a simple mouse click.

Actions also let users experiment with different combinations of processes, instantly changing the order where effects and edits are applied to a file, making it ideal for sound design. This, along with the program's slick Soundtrack Pro/Final Cut Pro 5 integration, is among its greatest strengths.

Recording is limited to two channels at a time, although any number of multitrack files can be imported into a session. The software does not specify an upper limit on the maximum number of channels it supports. For this review, Apple loaned me a dual 2.7GHz processor G5 with 4 GB of RAM. This is the fastest, most powerful Mac yet, with a decent RAM complement, but I was still able to make the machine occasionally hiccup. In this case, I was running a particularly grueling project: a long-form multicamera DVD concert video with 100 edits and numerous video plug-ins—mostly for shot-to-shot color and/or exposure matching (but pre-rendered titles and effects)—along with five track-hours of LCRSS surround audio with dozens of edits, pan moves and gain changes. I also found

Final Cut Pro 5
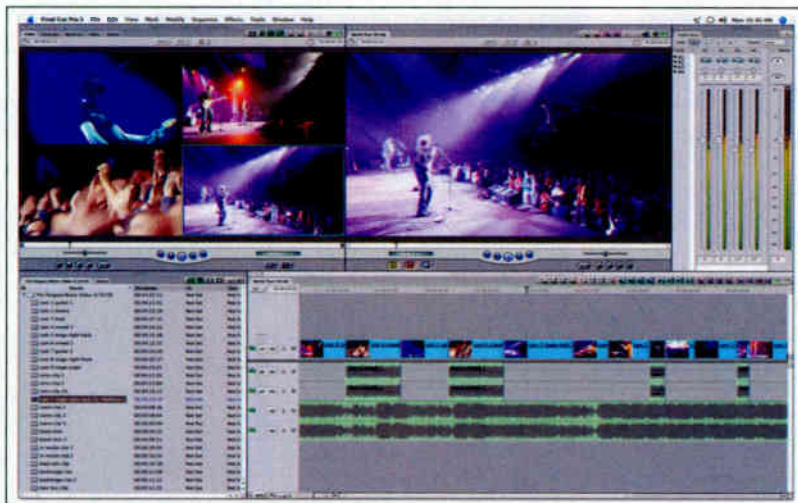
The crown jewel in the Final Cut Studio suite is Final Cut Pro 5, Apple's landmark program that, since its release in 1999, has become the editing program of choice among video pros. Of course, if *Mix* were a video magazine, then this article would be about Final Cut Pro 5 with a sidebar on Soundtrack Pro, but we have our priorities here.

Available separately from the suite for $999 (or a $399 upgrade from previous versions), Final Cut Pro 5 takes the HD video support from V. 4.5 and brings it to the next level, along with a slew of other enhancements. For anyone who hasn't worked in HD, the difference in picture quality over DV is like comparing 16mm to 35mm, or in audio terms, CD to 24-bit/96 kHz.

Ironically, Final Cut Pro 5 supports 24 channels of simultaneous audio I/O with 24-bit and up to 96kHz resolution, so one of the workarounds for recording multitrack sessions to Soundtrack Pro is tracking to Final Cut Pro 5 and then opening the project in Soundtrack Pro. Speaking of audio, Final Cut Pro 5's mixer also includes Mackie Control Universal support.

For those editing multicamera projects, Final Cut Pro 5's Multicam feature is nothing short of awesome, with the ability to display up to 16 synchronous sources onscreen simultaneously, giving the user fast access to all of the angles. In my mind, this is one of Final Cut Pro 5's strongest features—especially for those who do concert production—and the implementation is brilliant.

—*George Petersen*

that when running track-heavy projects (with or without video) that were 45 minutes or longer, the Zoom Back in the Timeline view was limited to displaying only seven minutes of the project—a minor quirk that should be addressed in the next update.

IN THE MIX

Automated mixing of volume and pan is provided, and while not elegant or the ultimate, it provides a highly utile and serviceable tool for probably 90-plus percent of the typical everyday chores. The mixer's layout is logical and easy to use, and the meters—which include a resettable peak-hold function—were fast and accurate. Users can arrange channel strips, buses or output channels in any order, and the mixer includes a Mono button to check stereo mixes for mono compatibility. One downside was not being able to link faders in the mixer, so making a fade on a stereo pair required two passes of the mouse.

It's hardly the software's fault, but mixing on a hardware surface—rather than dragging onscreen faders with a mouse—makes life far more pleasurable.

Mackie Control Universal

With that in mind, Final Cut Pro 5 and Soundtrack Pro support Mackie Control Universal. This controller has nine Penny & Giles touch-sensitive moving faders, V-Pot parameter control of pans and effects, a large SMPTE display and tape recorder–style transport controls. A single 8-fader Mackie Control Universal system can handle any-size session due to its bank switching. It retails at $1,299; for those who like having more controls, an optional 8-channel extender is $1,099. Best of all, its automation moves can be stored directly to Soundtrack Pro or Final Cut Pro 5, and implementation is plug-and-play.

One of the most appreciated touches in Soundtrack Pro is the large collection of AudioUnits and Logic plug-ins, with more than 50 plugs, including dynamics, EQ/ filters, distortions, modulations (chorus, flange, phasers, etc.), reverb/delays, de-noise, pitch shifter, stereo spread, sub-bass, meters, test oscillator, tuner and more, including restoration tools.

Several of the DSP effects are particularly impressive. The Ambient Noise Print function clones a bit of background ambience and automatically inserts it wherever a bit of unwanted audio—a cough or distant door slam, for example—is removed. Intelligent Find and Fix analyzes a file for problems such as pops, clicks, hum or phase issues. A list of occurrences is placed on a results list and automatically highlighted in the Waveform Editor window. Problems can then be addressed/corrected individually or globally, depending on user preference.

Overall, Soundtrack Pro takes the concept of its predecessor light years ahead in terms of power, versatility and feature set. On my want list for the next version would be multitrack recording and track locking, but especially in view of how Soundtrack Pro integrates with and strengthens Final Cut Pro 5 and the entire Final Cut Studio Suite, this is one audio editor that, like a fine wine, will only mature and improve with age. Few other products provide so much for $299.

Apple Computer Inc., 408/996-1010, www.apple.com. ∎

Waves L3 Multiband Peak Limiter, Maximizer

Sophisticated Look-Ahead Dynamic Processor for Mastering

The L3 Multimaximizer interface includes controls for per-band gain, release time and priority.

Few plug-ins have garnered as widespread use as Waves' L1 and L2. The Waves L3 takes those plug-ins to the next performance level. The 24-bit L3 comprises two different stereo plug-ins—the L3 Ultramaximizer and L3 Multimaximizer—that both have a different interface (one basic and the other more advanced) to control the same algorithm. At the heart of that algorithm is a combination look-ahead multiband peak limiter and maximizer with an integrated linear-phase equalizer.

The L3 offers five bands of peak limiting with a twist. Instead of using independent limiters for each band (like traditional split-band processors), the L3 uses a patented auto-summing limiter to control all five bands at once. Both L3 plug-ins include Waves' superb IDR (Increased Digital Resolution) word length–reduction processing. The L3's intensive number-crunching incurs 80ms latency.

SPLIT PERSONALITY

The Multimaximizer's GUI features controls to adjust the L3's auto-summing behavior, including per-band gain, release time and priority. Raising a band's gain control increases its continuous level, while raising its priority control preserves more of its peaks. Both controls are placed pre-limiter and can be linked. Each band's release time controls can be adjusted independently or linked via a master control and are further modified by Waves' program-sensitive ARC (Adaptive Release Control). Five release behavior settings modify the extent of ARC's influence across various frequency bands.

Maximizer allows you to adjust the crossover frequencies between adjacent bands; each band's output can be soloed. As the value of a global separation control is lowered, each band's sidechain signals are increasingly mixed together so that the plug-in progressively mimics a wideband limiter (with tweakable sidechain).

ULTRA-FAST AND EASY

The Ultramaximizer's GUI is a stripped-down version of the Multimaximizer's and features a simple user-friendly control set that is almost identical to the L2's. A ceiling control sets the maximum output level for your program to attain. A threshold control adjusts the amount of brickwall limiting. (The plug-in automatically applies the necessary make-up gain to attain the ceiling's value.) You can link the threshold and ceiling controls so that their values are scaled together, allowing you to vary the amount of limiting without output level fluctuating and coloring your perception. Input, output and gain-reduction level meters, along with associated numeric readouts, guide you in making adjustments. Other controls include release time, a bit-depth selector (24, 22, 20, 18 or 16 bits) and selectors for types of dither and noise shaping (both defeatable). Two types of dither and three different noise-shaping curves are available.

The Ultramaximizer's Profile selector offers nine presets that invisibly change the L3's multiband parameter settings, allowing you to quickly audition different flavors of dynamics processing without having to learn how the hidden multiband controls work or engage in time-consuming tweaks when working under the gun.

SOPHISTICATED TRACK CRUNCHING

Both L3 plug-ins use the same amount of CPU power and roughly three times what the L2 consumes. Using the L3 Ultramaximizer is similar to working with the L2, except that the L3's Profile menu lets you instantly audition various shades of multiband limiting via its presets. This was exactly what I needed to apply a quick mastering touch to a budget-constrained heavy metal demo I had just mixed. The "Loud and Proud" preset was the ticket for this project, preserving lots of continuous level and presenting an appropriate onslaught of guitars. I liked that the threshold ceiling link control maintained any offset between the two controls, allowing me to hear the effect of subtle tweaks of the threshold after establishing a ballpark ceiling setting.

The Multimaximizer takes brickwall limiting to a much higher level of finesse. On a power-pop ballad, I increased the gain in the band below 74 Hz to achieve beautiful sustain in the cello and double-bass sections and electric bass, while increasing the priority setting in the 1.2- to 5kHz band let vocals and the attack of kick and snare drums retain greater dynamics. The result was as loud as what I could achieve using the L2, but sounded warmer and more animated.

I found the Multimaximizer's Separation control provided a useful "less of the same" function; judiciously lowering the control's setting retained much of the flavor imparted by other settings, but provided subtle moderation across the board. I also liked that the Multimaximizer's wide-

ranging low and low-mid crossovers could be set as low as 40 and 150 Hz, respectively, giving me surgical control over the bottom end, which is critical in mastering work. However, both the graphic and numeric crossover controls sometimes jumped to previous or random settings when released with the mouse after dragging. I could easily work around this bug by using numeric data entry.

POWERING DOWN

The L3—particularly the Multimaximizer—enables you to achieve the competitive loudness and tightly controlled in-your-face sound that the L1 and L2 delivered
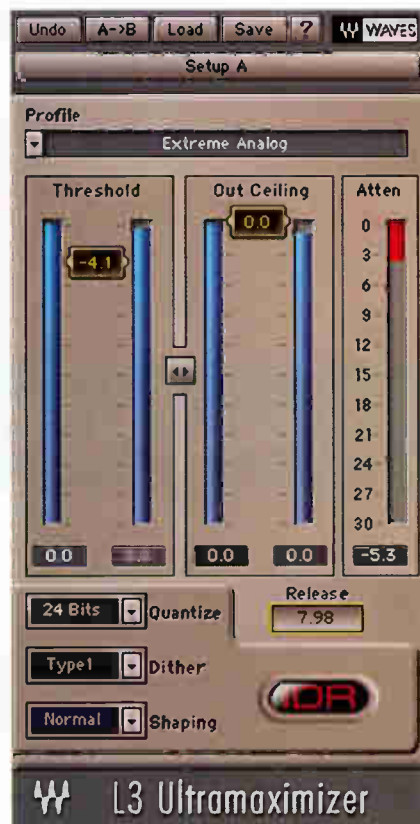
Users can instantly audition Ultramaximizer presets under the Profile menu.

but with more grace. By empowering you to independently tweak continuous and peak levels in five separate frequency bands, subtle shades of timbre and more discriminating treatment of dynamics are suddenly at your command. That's real power.

Prices: $1,200, TDM; $600, native.

Waves, 865/909-9200, www.waves .com. ∎

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

ADAM P33A Studio Monitors

Active Tri-Amped Near-Fields With Ribbon Tweeter

The ADAM P33A speakers are a downsized version of the company's popular S3A speaker and are aimed at near/mid-field monitoring applications, where powerful yet smaller boxes are required. The P33A uses ADAM's A.R.T.-design ribbon tweeter and dual 7.5-inch woofer deployment—all driven by three built-in amplifiers. Similar to the dual-woofer design in the larger S3A, one woofer functions as a full-range driver while the second one is active only at frequencies below 150 Hz. According to the company, this effectively doubles the woofer's area and power when it needs to respond to deeper frequencies, resulting in better low end without compromising midrange performance.

POWERING UP

The tri-amped (3x 100W/channel), shielded self-powered speakers are sold as a matched pair with left to right (A/B) orientation—critical for proper imaging. The P33As are designed to work either horizontally or vertically, with the two woofers on each side and the ribbon tweeter in the middle. When they are set up (preferably on a solid, rigid surface), the full-range woofers should be mirror images of each other. I went with the suggested horizontal A/B setup at my studio, but during one cramped remote session, I used them vertically. The overall imaging did not suffer any major problems; they were quite usable and just as detailed.

A subtle but easily visible green LED embedded in the ribbon tweeter baffle lets you know the power is on and the speakers are active. Although all trim pot settings are shipped in Flat mode from the factory, tweekers can easily make adjustments for room variables.

In addition to the rear power switch and balanced XLR input, there are four recessed continuous trim pots for input gain, high and low room EQ, and an additional high-gain control.

The input trim pot offers ±10 dB of boost or cut, useful for matching amp outputs and L/R alignment. The high-gain trim pot controls overall tweeter level, with ±4 dB of gain change available. It's recommended that this control be left flat, but for overly

damped or larger rooms, this is a handy feature to have. Two room EQ controls are also included, with ±3dB gain change for shelving points starting at 150 Hz (low) and 6 kHz (high). As I used the SP33s on a variety of location and studio applications, I found the low-frequency trim adjustment convenient when working without a sub. (It is nice to know what's going on down there, and once you understand what the added or reduced bass means to the mix, you can adjust accordingly.)

IN MY EAR

Straight out of the box with the controls set to Flat, the P33As required little adjustment, but it was nice to have the trim options. The A.R.T. tweeters are the centerpiece of the P33As' design, and you'll either love them or hate them, depending on your taste in high-end dispersion devices. Similar to other monitors in this price range, the mono imaging was superb and held up solidly, both up-close and as far as four to five feet back in the control room.

I used the P33As on many projects, from location recording to in-studio tracking and got some exciting, useful, yet occasionally uneven results. The unevenness was specifically noticeable in the upper mids and top end, as compared to the Lipinskis and my associate's B&Ws. And just like all of them, they need a sub if you want the whole sonic picture. However, they are robust and powerful enough for any kind of day-to-day tracking work. If you've got slamming bass and drum with lots of guitar and vocal overdubs, then they will certainly deliver.

The monitors took everything I threw at them, effortlessly handling low and upper-midrange jabs without flinching or sagging. The tweeter is more of an acquired taste, and though I prefer a silkier, smoother sound, the tweeter didn't let me down and wasn't smeary during loud sessions with crashing cymbals and sparkly percussion. Vocals were crisp and clear—not strident or fatiguing.

While there's enough low bass and punch to get by without a subwoofer,

I always prefer to work with one. Still, the monitors gave me plenty of good information and clues to know what I was hearing without a sub during location tracking sessions. The P33As were rock-solid with kick drum and electric and acoustic basses. I dislike hearing amp power droop and sag with poorly designed self-powered speakers, but the P33As' tri-amp design packs plenty of transient power (150W/peak) to keep things vital.

SWEETNESS ALL AROUND

There was a much wider and deeper sweet spot than I'm accustomed to with control room monitors of this size. This came in handy when dealing with groups of four or more musicians crowded into the control room for reality checks and quick playbacks. No one got a skewed or isolated portion of the sound; when working with "more me in the mix" types, this is a real blessing.

Though a bit exaggerated, the wide stereo imaging lets you get inside the sound field—even as far back as five or six feet—when overdubbing and layering tracks. While the horizontal setup was obviously the wider and more pronounced sound field, I liked the vertical setup for other uses such as remote work. The vertical arrangement let me concentrate on the overall sound as opposed to the stereo imagining when working alone on location.

If you're looking for a powerful, robust self-powered near-field monitor with a big sound for your mid-sized studio, make sure you check out the P33As. They may be just what your sonic sweet tooth needs.

Price: $3,200/pair.

ADAM Audio, 805/413-1133, www.adam-audio.com. ∎

Joe Hannigan runs Weston Sound & Video in Philadelphia.

Universal Audio 8110 Microphone Preamp

Eight-Channel Unit Offers Tone Shaping, Impedance Matching

Universal Audio is generally known these days for re-releases of its legacy analog processors such as the LA-2A and 1176, along with some newer combo units such as the LA-610, marrying classic hardware into "greatest hits" hybrid packages. Breaking that mold, the company has now ventured into new territory with the release of two multichannel mic preamps: the 8110 (reviewed here) and the 4110, a 4-channel unit with the same features.

COMMAND AND CONTROL

The three-rack-unit box's front panel is simply laid out in a polished black finish with the controls positioned vertically, API style. Each preamp has a three-position switch offering variable impedance (500 or 2k ohms) and the ability to switch the input to line input, plus gain control and an output level control. Between the level controls is a three-position Shape rotary knob: The Modern mode (labeled Off) provides lots of clean wide-band gain. Position 1, a Vintage mode, adds transformer loading with greater gain, providing more midrange and level. Position 2, a Saturate mode, maintains the same transformer loading, but adds additional loading at the first amplifier and soft limiting; again, with more gain producing more effect.

Additionally, the front panel carries four blue-lighted switches providing phantom power, a 15dB pad (actually, 12.7 dB when bench-measured, depending on source impedance and the selected input impedance), low-end roll-off (6 dB per octave at 100 Hz) and polarity switching. Above this is a single tri-color input LED and a four-segment output LED. These meters were well calibrated, with the appearance of the orange light within 0.1 dB across all channels. The back of the unit offers eight line inputs, eight mic inputs and eight line outputs, all on balanced XLRs. The power supply is internal.

IN THE TRENCHES

Using the LEDs as a guide, optimal level setting was a breeze. I set the output all the way to the left, brought up the mic gain control until the tri-color LED clipped and then backed it off. At that point, I could set the output control until I was hitting the recorder just right.

The 8110 boasts a remarkable 10 to 60k Hz (±0.1dB) frequency response and offers up to 74 dB of clean gain. I first heard the preamps on an acoustic guitar tracking session recorded to an Otari analog 2-inch machine. Guitar was recorded first with a pair of AT4051s and then a pair of AT4047s, with the 8110's Shape switch in Off. This setting provided a balanced and clean sound, albeit one lacking personality—at least compared to the other settings, which I'll get into shortly. With the Shape switch in Position 2, the preamp exhibited more presence and level and a lot more personality—the guitar jumped out of the track. From this session on, the Shape switch Position 1 became my initial setting. When used to record a guitar amp, the Position 1 effect became much more apparent, filling out the mid and low end substantially. The effect is not subtle, which is great.

Another great way to shape the tone is by switching the impedance setting between 500 and 2k ohms. This feature came in handy when recording a bass through a DI. The bass produced more level when the impedance was switched to 2k, which better matched the DI's output, producing more level and a richer tone with more low end.

Next, I used the 8110 to record the kick in/out, snare top/bottom, overhead and a drum kit's stereo pairs, with the rest of the mics coming through SSL 4000 Series preamps, all directly to an Otari RADAR. The ability to change the 8110's tone by hitting the input a bit harder was fantastic. I could change the tone on selected mics by goosing the gain a bit and backing down the output level. This technique, used with tweaking the Shape switch for a cleaner or more pushed tone, provided a wealth of possibilities. As part of this session, I used the 8110 with an AEA R92 ribbon mic in the room. The pre had more than enough gain for the ribbon and never sounded noisy. The 2k setting was perfect for this application, offering plenty of impedance headroom.

I used six of the preamps to record various passes of a percussionist using a 5.1 ITU surround mic array into Pro Tools. I used AT4051s for the LCR, AKG 451Es on the rears and a Neumann U87 for the LFE. By putting the Shape switch into Position 2, I was able to drive the ambient (off-axis to the performer) mics hard and saturate them without clipping them in Pro Tools. This trick had the effect of filling the room—definitely making the track.

THE 411 ON THE 8110

The tonal variations you can get with the 8110 are truly marvelous. Even when I took the unit to extremes, it was still hard to make it sound bad; there was plenty of clean gain. The fit and finish is excellent and the knobs are solid and stick nicely where you set them. It feels like quality. Its $5,250 MSRP (around $4,500 street) price may sound high, but when you consider that you're getting eight quality preamps, infinitely variable tone shaping and impedance matching—all for well under $700 each—it more than justifies the price.

Even so, if the 8110 is too dear, you can go with the 4110, which offers four preamps with the same features, plus a DI input for $3,195. What's not to like?

Universal Audio, 866/UAD-1176, www. uaudio.com.

Kevin Becka is Mix's technical editor.

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Sennheiser Evolution 900 Series

Ten New Microphones for Studio or Stage

The Sennheiser Evolution 900 Series microphones are like a new palette of colors for an engineer—10 exquisitely designed tools to enable vivid live sound reinforcement and truer-to-the-source studio recordings. The mics have matching black-painted die-cast metal bodies (brass for the e914) and gold-plated XLR connectors, and come with holder/clamps or integral mounts, windshields, carrying pouches and multilanguage instruction manuals.

The Evolution 900 Series includes the e904 ($279) and e905 ($299); by virtue of their compact size, they are designated for tight drum kit placement or unobtrusive instrument miking. The e906 ($349), with its flattened shape and unique three-position presence filter switch, is designed to be used with an electric guitar and can be hung (by its XLR cable) over the front of a cabinet. The e935 ($279) and e945 ($299) are handheld vocal mics; the e908B (for brass, $399) and e908D (for drums, $399) are small electret condensers with flexible goosenecks and spring-loaded mounting clips.

I reviewed three 900 Series mics: the e901 ($379), a wide cardioid boundary-layer condenser mic; the e902 ($349) bass/kick drum mic; and the general-purpose e914 ($649) cardioid small-diaphragm condenser microphone.

perfect for permanent installation on a wall for ambient/room pickup. This mic comes with a rubber, non-slip backside surface and is phantom powered. It has a sensitivity of 0.5 mV/Pa with max SPL of 154 dB.

The e902 is a dynamic cardioid microphone that has a neodymium magnet structure, shock-mounted capsule, replaceable front basket (screen) and integral stand-mount. The fully adjustable mount and rear-mounted XLR connector make placement and connection a breeze—the best yet in the world of kick drum mics. Besides kick, the carved frequency response is tailored for bass instruments such as bass guitar cabinets or the bottom end of a Hammond organ Leslie speaker. Sensitivity is rated at 0.6 mV/Pa @ 60 Hz.

The e914 electret condenser mic has a removable capsule section and, for now, only comes in cardioid. The KE14 capsule is 14 mm in diameter and 3.5 microns thick. A recessed three-position attenuator rotary switch offers 0, -10 and -20 dB of attenuation. Another three-position recessed rotary switch selects either a flat response, a 6dB/octave @ 130Hz roll-off filter or an 18dB/octave @ 85Hz cut-off filter. Both of these switches have a good

recorded into a Pro Tools|HD Accel rig.)

I placed two e914s without any roll-off or attenuation at about two feet above the cymbals, pointing straight down at the toms and snare, using only the preamp sections of two Manley EQ500 tube mic pre's without EQ. The other mics included Shure SM57s on top and bottom snare, Milab DC 96B on hat, MD421 on rack tom and a Shure B52 on floor tom. I used Focusrite ISA-215 and Neve 1084 modules.

I placed the e901 boundary-layer condenser inside the kick, right on the bottom and directly on the wood drum shell; the rubber backing kept it from sliding around all session long. I placed the e902 right into the hole on the front WeatherKing PowerStroke 3 head. For this session, I placed the entire mic inside the drum slightly off-center, aimed at the beater and directly above the e901.

In front of the kick, I constructed a 5-foot-long tunnel and put a U87 about three feet away. All three mics were recorded flat to separate tracks with three more Neve 1084 modules. Because it was on the other side of the bass drum head from the other two mics, the U87's polarity had to be flipped. I adjusted the time relationship for the three tracks subsequent to the recording. The U87 was late in relation to the e902 and later yet compared to the e901 inside, my reference for defining the

901, 902, 914

The e901 is a boundary-layer electret condenser microphone that uses a 10mm diameter KE10 capsule mounted perpendicular to a flat metal back plate. Also known as a pressure-zone microphone (or PZM), it has a half-cardioid polar pattern and, when placed on a reflective surface such as a wall or window, will have up to a 6dB gain in sensitivity and a flatter frequency response. The 901's response starts rising at 800 Hz to about a 12dB boost at 10 kHz. The 901's "stealthy" profile and rear-mounting holes make it

solid feel and cannot accidentally change position when normally handled. The e914 has 7mV/Pa sensitivity with a max SPL (with -20dB pad) of 157 dB.

PERFECT FOR DRUMS

I first used the mics recording an '80s Gretsch kit with 22-inch bass drum, DW chrome snare, 12-inch rack, 16-inch floor toms and K Zildjian Dark cymbals. The hi-hats were old 14-inch Paiste Sound Creations. The room was small—about 8x16 feet—with an 8-foot ceiling, a wood floor and acoustically treated walls. (I

leading edge of the beat.

Without any tweaking, this simple setup produced a good rock drum sound with no phasiness, well-balanced overheads boasting clear and not overly bright crash cymbals, a present snare drum and good low-frequency energy content from the toms and kick. Of special interest was the e901 inside the kick. This mic produces an extremely sharp, percussive attack that is natural-sounding because it is real and not contrived by EQ'ing and compressing a main kick mic. However, you must use another mic to get the rest of the kick's sound to complete the sonic picture.

The e902 ended up being my main mic in the kick drum submix—it could stand alone with plenty of high-end crispness and solid low end. I quickly found the sweet spot, and I liked that the XLR connector and integrated holder worked well together at the end of my short boom stand.

The e901 was a great choice for handclaps when I taped it to the studio's window. Similar to using a PZM, my hand clappers didn't have to gather around a central mic and concern themselves with being balanced—they just stood in front

of the window and the e901 picked up everything with a very percussive, sharp and consistent sound.

The 901 also worked well right outside the bass drum; I just placed it on the wood floor in front of the kick. This created a more ambient sound without the delay and phase issues caused by mixing through distant room mics. This position also works well for loud guitar cabinets, especially as an added mixing element to a main mic. If you mount the 901 on a large sheet of plywood, you can aim it at a source with better isolation and the extra surface area will increase the low-frequency response.

Finally, I tried the e914 on an acoustic guitar with great results. I could move in close and, to get rid of most of the proximity effect, use one of the filter settings for a very present, in-your-face percussive sound or move back out for a smoother overall acoustic body sound heard on many country ballads. Either way, the high frequencies were smooth with the overall spectral balance even.

SOLID CHOICES FOR STUDIO OR LIVE

The Evolution Series e901, e902 and e914 are a ready-made collection of classic workhorse mics. The sturdy, all-metal construction and impressive specifications make them

worthwhile additions to any live sound company's or a studio's mic locker. Each mic's dialed-in sound signature does all the work of getting great sounds on drums, guitars and bass. In general, I found little need to EQ these mics; with careful positioning, I could capture everything I wanted.

Sennheiser. 860/434-9190, www.sennheiserusa.com.

MIX ONLINE EXTRAS

Barry Rudolph is an L.A.-based recording engineer. Visit his Website at www.barry rudolph.com.

Chandler Limited Mini Rack Mixer

16x2 Rackmount Unit With Talkback and Monitor Control

C handler Limited is known for designing new products with a vintage spin. Its latest, the Mini rack mixer, features Chandler's version of the classic "Beatles and Pink Floyd" EMI TG mixer circuits, with a modular construction and a modernized, compact 5U size. DAW users who ponder analog summing and a monitoring system or any studio considering an analog sidecar purchase will find the Mini mixer irresistible.

CONSOLE IN A RACK

The Mini is a 14-slot card cage frame in a 19-inch, all-steel rack box that, fully loaded, weighs 50 pounds, including its 22 transformers. The frame also accepts the modular versions of the Chandler TG Channel and TG1 Limiter.

The Mini has eight single-slot, 2-channel line input modules, a single-slot talkback module, a single-slot control room monitor panel and a 4-slot master module. Even though the mixer is a rackmounted unit and ideal for portable DAW rigs, it can be positioned at a slight angle in a permanent desktop cabinet to work as a conventional mixer/console/desk. The Mini is powered by the PSU-2 external power supply that measures 10x8x4 inches. The PSU-2 runs hot to power the Mini's 20 discrete Class-A amplifiers; I recommend placing it in a well-ventilated place.

Each dual-line-input channel module has its own rear panel XLR connector and transformer-balanced input with an impedance of 10k ohms. All modules are

identical; in fact, when a 0dBm, 1kHz test tone was presented to each input, all modules were within 0.5 dB of each another. Each channel has a level control with a "pull" mute switch and a red LED channel on its indicator, which I didn't like as it is hard *not* to move the level when pulling on the level knob. Also, the red LEDs should go *on* when you are muting and not the other way around.

The line module pan pot changes 6 dB in level, from center to full right or left. Most summing boxes have fixed L/R channels so you have to do all mid-left or mid-right pan positioning within the DAW using digital stereo buses. With the Mini, you can hard-assign tracks to direct outs—dedicated, mid-left and mid-right DAW outputs—and dial in the exact stereo width, which is a wonderful mixing option.

The Mini uses a passive summing network with a Chandler amplifier to make up gain loss. The master bus level

is controlled on the Master module using an Elma gold rotary contact switch with 1-percent resistors. Besides precluding manual fades, the rotary switch is also great for resetting output levels if they happen to be set below full clockwise. The master module also uses the same Elma switch configuration for volume control, allowing you to return to exact monitor levels, a very important practice during mixing. The Master module features two illuminated black Sifam VU meters canted 90 degrees—exactly like the Chandler TG1 Limiter—a speaker A/B switch with two sets of XLRs on the rear panel and an external stereo input switch.

MONITOR OPTIONS AND TALKBACK

The external input button disconnects the mixer's stereo bus from the monitor section. This feature is useful for monitoring an external DAT/CD/2-track analog deck, monitoring an in-the-box DAW stereo mix or using the Mini's mixer for mixing line and microphone recording sources simultaneously. When using the Mini as a mixer/summing system for master DAW mixes, the external input becomes a stereo bus insert, allowing you to insert a compressor and equalizer on the stereo bus. I suggest adding a second, dedicated external input to hear a CD or other external stereo source at a push of button.

The talkback module has a Talk button, a level control and a ¼-inch TRS jack for any dynamic mic. A Shure SM57 worked for me, but during testing, a very loud pop was heard when I pushed the button. (Chandler says it has fixed this problem.) The jack

Vintage Vs. Modern Gain Structure

It's been my recent experience to get massive distortion when mixing hot Pro Tools|HD output levels on vintage consoles or even prosumer mixers. Conversely, on the recording side of Pro Tools, to get enough level to achieve maximum digital resolution (some people do not for important reasons that I'll save for another sidebar) with the same gear, it is difficult to avoid distorting your analog gear.

The solution for playback is to recalibrate Pro Tools' I/O for less output level so you won't "blow up" your little mixer. For recording, increase the sensitivity of Pro Tools' input so less output level is required from your analog gear. Less output means cleaner sound and no analog clipping.

—Barry Rudolph

should be replaced with a small mic and an external mic jack added to the rear panel, as well as a jack for an external talkback button. The last module has three monitor buttons: mute, dim (12dB drop) and mono for listening monaurally without affecting the stereo mix bus output.

IN THE STUDIO

Using a 1kHz tone at -20dB reference level (or 20dB headroom) from the Signal Generator plug-in on a Pro Tools|HD system, I carefully calibrated 16 channels on the Chandler and a '70s-era 40-input classic API console at LAFX Studios in Los Angeles. This vintage console uses API's 2550 amplifiers and is normalled to the HD's 192 I/O boxes, so I patched the same 16 channels/192 outputs to the Mini. The Chandler has loads of gain and its pots ended up only halfway up, while the API faders were at the -10dB position. Both mixers produced 0dB stereo bus level with their pan pots centered.

I connected the stereo output of the Chandler and the API (done on two of the multichannel buses as I didn't use the API stereo bus) to the API's monitor section so that they both came up as two different 2-track sources. This way, both would have an identical signal path through the monitor section to the Genelec 1031As and I could instantly A/B switch with no gap. This configuration ensured that I could use the same large VU meters on the API for all level measurements for both mixers.

I began my mix listening through the API. Once I had a mix and a good stereo level, I A/B'd between the mix summed in the Chandler and the API. The Chandler had the same loudness and overall sound, but with all of the characteristic API clarity and punch. This held true for different music sources—from hard, percussive rock music to softer acoustic instrumental songs. The Chandler was slightly warmer, but the difference between them was too close to call. Considering this huge API console once sold for more than $200k, I was impressed at the similarity of their performance.

Then I set up the Mini to act as a recording sidecar by connecting eight Neve 1084 mic preamp/EQ modules to eight line inputs. I recorded a drum kit using eight mics: kick, snare top and bottom, hi-hat, tom 1 and tom 2, and left and right overheads. With this simple setup, I got a great drum sound using a single stereo pair. The Mini channel controls had plenty of gain, and I could overdrive the stereo bus, pegging the Sifam VU meters to get a slightly distorted sound that is ideal for urban contemporary–style drum loops. I backed off the mic preamp gain and channel levels for the cleanest sound, getting responsive VU meter action; it was easy to see peaking tom-tom levels. The Mini was quiet—quiet enough to hear those old Neves—and the sound was natural and full.

THE SUM OF ALL EARS

Chandler Limited has hit another one out of the park with the 16x2 Mini rack mixer; its great sound is only matched by its capacity to multifunction. This unit nicely marries classic circuit design and vintage sound in a modern package for digital music production. By virtue of its dual purpose—as a DAW monitor/controller with analog summing/ mixer and as a source mixer—the Mini belongs in its own category of worthwhile analog signal processors. Price: $7,200.

Chandler Limited, 319/885-4200, www. chandlerlimited.com. ∎

MORE OF LES

MODERN GUITAR GREATS SALUTE (AND PLAY WITH) PIONEER LES PAUL

By Matt Hurwitz

"I've just made a decision," announces Les Paul, circa 1949. "I'm through with electronics. No more electrical gadgets for me." Paul, apparently, isn't very good at keeping his word.

Those words, taken from a vintage recording of *The Les Paul and Mary Ford Show* radio program, helped launch *Les Paul & Friends*, Capitol's new tribute to the veteran guitarist and recording pioneer, who celebrated his 90th birthday this past June. The album features a who's who of popular music from the '60s through the '80s, including Eric Clapton, Sting, Jeff Beck, Neal Schon, Billy Gibbons, Richie Sambora, Steve Miller, Mick Hucknall, Joe Perry, Keith Richards and others.

The disc takes a novel approach to the standard tribute album, which usually features other artists performing or dueting with the guest of honor on his own catalog. "There was a period of music that Les, as a player, missed during the '60s, '70s and '80s," explains co-producer Bob Cutarella. With the exception of a pair of award-winning albums with Chet Atkins made in the late '70s, Paul had, for all intents and purposes, retired in 1964. "It was right around the time Bob Dylan plugged in his electric guitar," says Fran Cathcart, the album's other co-producer and an engineer for a good portion of the sessions. "He was kind

of on the sidelines watching Jimi Hendrix, Led Zeppelin and all of that happen. So we decided we wanted to do something with him that would be inclusive of all that he missed." The album is filled with great guitar-oriented songs from the period and new recordings of a few Paul standards to round things out.

Paul has been playing for years on Monday nights at New York's Iridium Jazz Club, mostly performing his old repertoire. "He was interested in our idea because he kind of wanted to go back to school a little bit and learn some new things—try playing rock music," says Cathcart. "A change in music is good," Paul says. "The fact that so many players are playing so many different ways today is good, too."

As for the song selection and artist matchup,

Les Paul at his home studio (Mahwah, N.J.) with producer Fran Cathcart

says Cutarella, "It morphed a lot. We decided if you had great songs from the '60s and '70s—identifiable songs—you had a shot at introducing Les to a new audience. We weren't going for the 13 to 25 demographic—that wasn't going to happen. So we decided to make an organic record with some organic songs. And, of course, put technology in there because Les is the father of technology. Let *him* play with technology, wherever possible, and just pick great songs that would be fitting of certain artists."

Paul left the song choices to the producers—a rare move for a mostly self-produced artist. "I figured they would be more in tune with what would be commercially appealing," Paul says. "If I had picked them, I might have done 'Ode to Billie Joe' or '(Sittin' on) The Dock of the Bay.' The artists still had a choice of doing their own songs if they liked, with no obstacles. I think it worked out great that way."

Each song's backing tracks were recorded first, sometimes with the guest artist playing live with the band, with Paul's overdubs added at a later date at his home in rural Mahwah, N.J. Two sets of sessions were held with, basically, two core sets of veteran backing musicians: one in L.A. and one in New York.

The L.A. band mostly comprised Abe Laboriel Sr. on bass and Hiram Bullock on guitar, with drums switching between Abe Laboriel Jr., Vinnie Colaiuta and Kenny Aronoff. Keyboards were handled by Lou Forestieri and Greg Mathieson, with additional guitars by Steve Lukather, Kenny Wayne Shepherd and, occasionally, producer Cathcart. The New York lot featured Bullock with bassist Will Lee, Shawn Pelton on drums and Brian Mitchell on keyboards. "It actually shuffled around a little bit, deliberately," explains Cutarella. "We wanted Nathan East, for instance, for

JOHN HIATT IN MEMPHIS
ROOTS ROCKER RECORDS TO DSD

By Rick Clark

PHOTO: C. TAYLOR CROTHERS

MASTER OF DISASTER
JOHN HIATT

It was just a matter of time before John Hiatt would make an album in Memphis. With albums such as *Crossing Muddy Waters* and the raw roots classics *Bring the Family* and *Slow Turning*, there has always been a deep soulfulness at the core of his artistry.

When it came time to record his latest album, *Master of Disaster* (New West Records), Hiatt hooked up with legendary Memphis-based producer Jim Dickinson. In some ways, it was the completion of an idea that began in the late '80s, before the making of *Bring the Family*, still Hiatt's best-known work.

"We talked years ago about doing a record," says Dickinson. "The first time we talked about working together, I was going to do it with [rock band] Hi Rhythm Section, which would've been a really good record that nobody would've liked but me. [Laughs] I think it's lucky for Hiatt that he didn't do that one, but that's kind of what the song 'Memphis in the Meantime' [from *Bring the Family*] is about. He's been thinking about coming
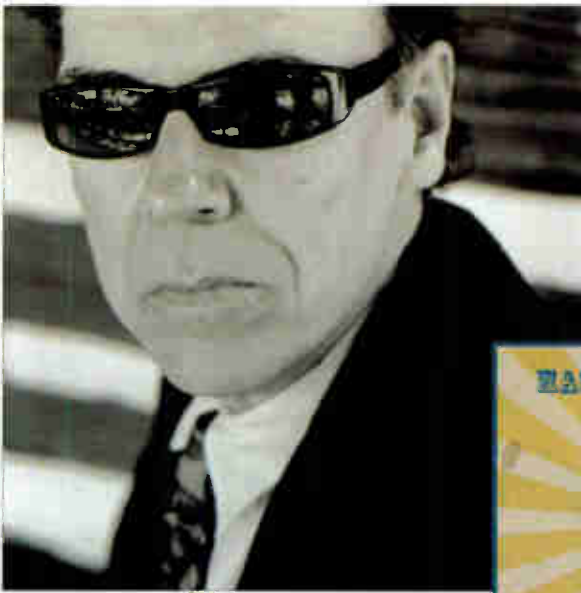
here for that long, I'll put it that way."

"Bring the family" might also be an apt description for this album, too, as Dickinson's sons Cody and Luther provide much of the musical backbone for *Master of Disaster*. Hiatt has known Dickinson's sons from the time they were young kids absorbing their dad's deep love for the expressive intersections of Delta Southern culture and music, and watched them playing punk rock and jug band music and ultimately evolving into superb players with their own critically acclaimed band, the North Mississippi Allstars.

Besides the Dickinsons, the album's deep

earthy pocket comes courtesy of Muscle Shoals Sound Rhythm Section bassist David Hood and Jim Spake (saxophone), Scott Thompson (horns), Tommy Burroughs (fiddle) and Dickinson on various keyboards.

One of the many highlights on *Master of Disaster* is "Cold River," a brutally dry story about two self-absorbed hustlers on their way to Chicago from Dallas who ditch their illegitimate baby, Little Moses, in the river. "I

HOT CLUB OF SAN FRANCISCO
DJANGO'S GYPSY JAZZ AND MORE

By Blair Jackson

It's been more than half-a-century since the great French gypsy jazz guitarist Django Reinhardt died of a cerebral hemorrhage at the age of 43. Yet his music—a wonderful fusion of swing cadences, jazz improvisations, waltzes, pop tunes and ageless gypsy melodies—has never been more popular than it is today. There are jazz festivals in America and Europe dedicated to his music, guitarists on nearly every continent devoted to learning and passing on his distinctive style, and acoustic ensembles attempting to capture some of the magic of Django's legendary Quintet of the Hot Club of France and his other bands. In America, one of the most vital and creative groups that honors Django's memory and has

PHOTO: TERRY HUSEBYE

The Hot Club of San Francisco: (L to R) Sam Miltich, Paul Mehling, Josh Workman; (rear) Ari Munkres, Evan Price and Oliver Manchon

used his broad repertoire as a jumping-off point for its own original music is the Hot Club of San Francisco, led by the fine guitarist Paul Mehling, aka "Pazzo." Now in their 13th

THE ANGELS' "MY BOYFRIEND'S BACK"

By Gary Eskow

There's this: "I've stumbled on the side of 12 misty mountains/I've walked and I've crawled on six crooked highways/I've stepped in the middle of seven sad forests/I've been out in front of a dozen dead oceans/I've been 10,000 miles in the mouth of a graveyard."

And there's this: "He went away and you hung around/And bothered me every night/And when I wouldn't go out with you/You said things that weren't very nice/My boyfriend's back and you're gonna be in trouble/Hey-la, hey-la, my boyfriend's back/When you see him comin,' better cut out on the double/Hey-la, hey-la, my boyfriend's back."

Bookends, these two lyrics, and in the chasm that separates them, the breadth and inclusiveness of rock can be found. At about the time when The Angels were stepping into Associated Recording Studios, one of Manhattan's busiest rooms, to record "My Boyfriend's Back," Columbia Records was releasing *The Freewheelin' Bob Dylan*. Talk about a range of styles, and the year—1963!

Richard Gottehrer, who wrote "My Boyfriend's Back" with Robert Feldman and Jerry Goldstein, remembers those days well. Gottehrer, who went on to produce The Go-Go's, Blondie and Joan Armatrading, remains active as a producer. In fact, The Raveonettes, the band he's currently working with, covers "Boyfriend" on their latest CD, *Pretty in Black*.

Gottehrer grew up in the Bronx listening to Alan Freed play R&B records on a transistor radio. Trained as a pianist from the age of six, he caught the blues bug early on, and by the age of 13, he was banging out rock 'n' roll numbers with a band of classmates at school dances. After earning a History degree at Adelphi University and spending a year or two at law school, Gottehrer realized that his passion for rock 'n' roll was not about to abate. "I wrote all through high school," says Gottehrer. "I was a Jerry Lee Lewis freak, and at the age of 16, I wrote a song called 'I'm on Fire' in his style. Years later, Jerry Lee recorded the song, and it was also included in the film *Great Balls of Fire!*, starring Dennis Quaid.

"While I was at law school, I kept turning out songs. In those days, you'd go down to the Brill building, knock on doors and play your songs for publishers. If they liked a song, they'd give you an advance of $25 to $75. While making the rounds one day, I met two other guys [Feldman and Goldstein], who were also waiting to get into a publisher's office, and we decided to find a piano and write some songs together.

"The Angels already had hit the Top 5 with a song called 'Til.' We became friends, signed a production deal with them and started writing material. 'Boyfriend' came out of those songwriting sessions."

But there was a catch. The three writers were signed to April/Blackwood Music, and the CBS-affiliated publishing company thought that "Boyfriend" was a perfect song for their very popular girl group, The Shirelles. The three partners held fast in their belief that the song was perfect for The Angels, broke away from April/Blackwood and signed the group to their new production company.

"'Boyfriend' was among our first production efforts," says Gottehrer. "Associated Studios was a very well-known studio at the time, and we cut the tracks there on a 4-track machine. We learned to produce by making mono demos. Actually, we learned to work in studios monaurally. Stereo was meaningless at the time. It wasn't until The Beatles refined the way they used stereo that it became popular.

"Brooks Arthur was the engineer on 'Boyfriend,' and I learned a lot from him. I remember him asking me if I thought that one of the records we were working on could use a little more top end. I told him to do what he would normally do, and he said he'd add some high end. I said, 'Great idea!' and that's how I learned! We also picked up a lot from Bob Crewe.

"In 1963, you could record four tracks on many recording decks, but only certain machines had the capability of bouncing tracks. If you were working on an Ampex recorder, you had to finish and mix your track on the spot. But if you could transfer your tracks to a Scully machine—which only a few studios owned—you could bounce tracks.

"After we recorded 'Boyfriend' at Associated, we took the tape to CBS Studios on 7th Avenue to mix and master with Stan Levine, an engineer who was an undiscovered genius at the time. CBS had all the latest and experimental compressors and equalizers. We'd spend three days mixing a single recorded on 4-track tape, zeroing in on tones, compression and the exact balances between voices and tracks, in part because you had weird combinations on the basic tracks. You might have horns mixed onto a drum track, for example. There were problems, of course, but you'd also get combinations that made unexpected, pleasant noises together.

"We spent a lot of time getting as much bottom on our records as we could. By today's standards, the low end on 'Boyfriend' is light, but by the standards of the day, it was mon-

strous! We doubled the electric bass with a stand-up bass and had Herbie Lavelie playing drums. He was great. The track, which was arranged by Leroy Glover, also had two or three guitar players on it.

"The girls sang their parts after all of the other parts had been tracked and they never heard a mix until the record was released. We'd thoroughly rehearse the vocal backing parts in an office somewhere that had a piano. We had a clear plan of which parts needed to be doubled or tripled, and where we needed to add an extra high background vocal to lift the track. Peggy [Santiglia] was the lead singer. She and the other two girls, Barbara [Allbut] and [Phyllis] 'Jiggs' [Allbut], were all from New Jersey."

The success of "My Boyfriend's Back"—it hit Number One in the summer of '63—led to a series of plum assignments for the fledgling producers, who decided to leverage their success in the studio to advance their careers as performers. In one of the more bizarre episodes in the history of rock,

"Boyfriend" co-songwriter Richard Gottehrer

the three reinvented themselves as The Strangeloves—a group they claimed hailed from the nonexistent city of Armstrong, Australia—and racked up several Top 40 hits, including "I Want Candy." While on tour, the group also became friendly with a teenage group called Rick & The Raiders, who were sharing the bill with them.

"Those kids were amazing!" says Gottehrer. "We decided to get them into the studio as quickly as possible. One of the songs we were performing was 'Hang on Sloopy,' which we had heard somewhere. We wanted the kids to record it, but we knew they couldn't release anything under the name they were using, which Paul Re-

vere had covered. The leader, Rick Zerringer, who was a fantastic guitar player, said they'd sometimes used the name The McCoys, so the single was released under that name, and Rick changed the first letter of his last name from Z to D. It shot to Number One within six weeks of its release!"

Gottehrer is excited about the work he's doing today with The Raveonettes. "They're an amazing group and are firmly aware of the great songwriting era. They have a thorough knowledge of the music from the '50s and '60s, and bring that sensibility into today. We recorded *Pretty in Black* at Allaire, a wonderful studio that's located on the top of a mountain in Shokan, New York. We mixed at Sony Music Studios and mastered with Greg Calbi at Sterling Sound."

What was it about the girl groups of the '60s that made them so popular? Maybe the phenomenon had something to do with anonymity. Could it be that middle-class America was uncomfortable with sexuality if expressed by a single woman, but would allow it to be filtered through the image of a group whose individuals remained nameless?

Or perhaps, as Gottehrer says, it was just that the light texture of the sound these groups produced blended well with the "big beat" that was popular at the time. The Angels, who can still be seen in the mind's eye with hips jutting acutely into the camera's lens, never scored another major hit, but can be found on the oldies circuit and through their Website, www.theangelsonline.com. ■

JOHN HIATT

don't want to ruin it for you, but it has one of the most cold-blooded John Hiatt lines ever," remarks Dickinson. "It's probably the most amazing story on the record. Part of the quiet, stewing magic of the track is built on Cody Dickinson's martial snare brushwork that is part influenced by his upbringing listening to the late, great Othar Turner's North Mississippi Hill Country Revue fife and drum music. "Cody did this slow march thing very lightly...and it's just something I don't think anybody else would have done."

Another track, "Back on the Corner," sounds like Hiatt is backed by some old ragtag Salvation Army Band. "I had Spake playing clarinet, which is always cool because he plays really lyrical, like Benny Goodman, and he's perfect for Dixieland-sounding stuff," says Dickinson.

For the title track (which leads off the album), Dickinson takes what could have

easily been a stock roots singer/songwriter groove and brings it into the realm of an old sax-driven, Ace Cannon–flavored Memphis-style bar groover, while "Find You At Last" benefits from a whole soul horn section over a deep spare rhythm pocket.

There are moments where Luther Dickinson sounds like he is tapping into the essence of Teenie Hodges and the late, great Eddie Hinton. "On this one song, we were knocking Teenie off so hard that he showed up at the studio," Dickinson says with a laugh. "The night guy called and said Teenie Hodges is here, and I said, 'Of course he is!'

Teenie came in and we were listening to a playback and there was this big ole grin on his face so strong it just swells you up, and he came over and hugged me."

Conceptually, Dickinson felt there was a geographical and historical thread happening in many of the several dozen songs Hiatt submitted. "Hiatt was interested in the idea of the American frontier as it moved East to West," says Dickinson. "Although the Cumberland Plateau is represented, the bulk of the material is west of the [Mississippi] river. There is kind of an open, big sky sound that we were after, and I think we really got it. When you hear the record, you'll be amazed at the space. It's very Zen-esque. It's a whole lot of air, and just when you think there's nothing there, something slides in underneath you."

To achieve that sonic vision, Dickinson, Hiatt and engineer/mixer John Hampton took advantage of an opportunity for the album to become the debut session using the first "real-world" multitrack DSD (Direct Stream Digital) recorder, the Sonoma 24, which was developed by Gus Skinas.

In the world of recording, DSD is a step some view as almost as significant as the move from analog to digital recording in the early '80s. Instead of recording 24-bit words at a rate of 96,000 times a second, it records a very fast 1-bit sigma-delta stream at a rate of 2.8 million bits a second. It is a signal much more analog-like in sound and appearance, but it can still be digitally copied and processed.

"While there are some devices out there

that can record multitrack DSD, the Sonoma 24 is the only one that can do this and provide the overdubbing and editing capabilities that everyone is used to, given the power of today's workstations," says Skinas, who was present for the Hiatt sessions.

Dickinson has always been a stickler for highlighting the spaces around the notes and capturing a palpable sense of place, even if it is a work of production fiction. From listening to *Master of Disaster*, it is clear that Skinas' Sonoma multitrack system is a perfect complement for Dickinson's conceptual sonic machinations in the studio. The sys-

> There is kind of an open, big sky sound that we were after, and I think we really got it. When you hear the record, you'll be amazed at the space. It's a whole lot of air, and just when you think there's nothing there, something slides in underneath you.
> —Jim Dickinson

tem's incredible headroom allows Dickinson to highlight those subtleties he cherishes.

"Even when you hear this down to regular 16-bit CD, it still sounds extraordinarily good," says Dickinson, who notes that a surround version of *Master of Disaster* is also slated for release. "If you hear the full Sonoma recording of this, it's just breathtaking. We sat there after the mixes were over and we would play it back and sit there with our mouths open. Hiatt, who doesn't like anything, would say, 'Well that sounds damn good!'"

"Everybody in the room was making comments about how great it sounded," says Curry Weber, the Ardent staff engineer who worked the Sonoma system during the sessions. "There was definitely a difference, and you heard things you don't really hear with Pro Tools|HD and systems like that."

One of the more interesting dynamics that took place during the session concerned Hampton having to rethink his mixing process at Ardent with the Sonoma. "The big plan was to get all the stuff in the Sonoma and then move to Studio B and mix it on the SSL—that's how I normally do stuff. I cut in the C room and move to B and it's like you've got a brand-new lens; everything's crystal-clear," says Hampton. "This is the first time that didn't happen. We went to B and I started putting the mix together, and it just fought everything. The music fought the console. It fought the equalization, and after a day-and-a-half, we had to admit that all the warmth of the sound of the Sonoma system was being

castrated by the console. It was the first time I've experienced it, so we decided to mix it back in C with the Neve in mixdown mode."

Weber adds, "We tried to mix it in Studio B and discovered that there was a total headroom difference between the Neve and the SSL that we had never run into before, which the Sonoma exposed. The Neve was just more suited to handle the high output of the Sonoma."

In conclusion, Skinas has this thought to offer: "When used in a state-of-the-art analog studio such as Ardent, the final product is free of the sonic restrictions one finds with typical digital production. This will be most obvious when John Hiatt's new SACD is played on an SACD player that uses the same DSD technology to play back the recording. It will also be noticeable on CDs and MP3s, because the better the master, the better the final product."

Hiatt has quite an impressive body of work, and *Master of Disaster* ranks with his finest albums, but sonically, none of his albums come close to this. ∎

LES PAUL

bass on Jeff Beck's track ["Good News"] because they just click."

The Los Angeles sessions, which comprised almost two-thirds of the rhythm tracks, were held over three weeks in February of this year at—where else—Capitol Studios in Hollywood. "Les actually helped design these studios back in 1955, '56, along with the famous echo chambers," notes Rob Christie, supervising A&R producer for Capitol-EMI. "I reviewed the drawings and offered my input into the studio design," Paul says. Aside from little things like a missing echo chamber and a lack of AC outlets in the studios proper, Paul recalls pointing out one important feature to label president Glenn Wallichs, which had apparently been overlooked in the famed round building's design. "I told him, 'Looks good to me. The only thing is, where do you put a broom?'"

The New York sessions were held at Eastside Sound, co-owned by Cathcart and the studio's original owner, Lou Holtzman. (The facility closed its original location in 2000 after 28 years of business, reopening at its present spot a few blocks away in September 2003.) Engineering for the L.A. sessions was handled, for the most part, by Cathcart, who shifted more to the co-producer role once the work moved east, with engineer Marc Urselli picking up the reins there.

From left: recording/mix engineer Marc Urselli at Eastside Sound; Buddy Guy's guitar setup; co-producer Fran Cathcart (left), Billy Gibbons and co-producer Bob Cutarella (right); and Eastside Sound's four-mic setup for vocals: RØDE K2, RØDE NT2000, Neumann U87/67 hybrid and AEA R92 (top) at Capitol Records

The producers' biggest challenge was assembling the impressive collection of guest artists in a timely fashion. "We had a time constraint, so we had to take advantage of whatever opportunities afforded themselves to us," Cutarella explains. "We had people out here for the Grammys, for instance, which made a perfect chance to grab Jeff Beck and people like that." Adds Cathcart, "We basically had

At Capitol Records (L-R): Kenny Wayne Shepherd (guitar), Abe Laboriel Jr. (drums), Lou Forestieri (organ), Steve Lukather (guitar), co-producer Bob Cutarella, Abe Laboriel (bass) and co-producer Fran Cathcart

to get 14 artists, which was the original plan, playing with Les, and we had two-and-a-half months to do it, from start to finish. So we just worked with the artists' schedules; when they were in town, we worked with them."

The artists were eager to show their wares in Paul's honor. "They seemed like they just wanted to impress Les," Cutarella says. "I remember Neal Schon coming in and saying, 'I love Les! I just want to show Les what I can do.'" Of course, many guitarists' trademark guitars went out the window in favor of cherished Gibson Les Pauls. "Billy Gibbons showed up with this beautiful Les Paul," recalls Cathcart. "He didn't bring in the fuzzy white Gibson Explorer or whatever that thing is he usually plays! Richie Sambora had a rare '59 Les Paul, as did Steve Lukather."

For miking, the team took advantage of Capitol's incredible inventory of classic gear. "We used all the toys here," says Cathcart, "the Fairchilds and all the rare items. And they have [Neumann] U67s—I looked over in the corner and there was a milk crate filled with them—that's how many they have. If

those mics could talk!" Guitars were typically fed through two amplifiers to get a variety of sounds. "We'd put a [Shure] 57 up close, typically off-axis, so that it wouldn't be quite as bright and harsh. Then we might have a U67 four or five feet away or more for an overdub to capture as much of the wonderful rooms at Capitol as possible."

Eastside's mic collection offered the producers many choices, as well. For vocals, Urselli used the AEA R92 ribbon (which was also used on some guitar amps) and the RØDE NT2000, with its variable pattern, and a RØDE K2 tube mic. "For artists Alsou, Bullock, Buddy Guy and Beth Hart, we set up those three mics," Urselli says. "It was always best to have a number of mics set up; we would pick and choose later which ones we liked the best. And on some, we ended up using a blend of a few microphones" during mixing later at Eastside.

The studio also has a modified 1977 Neumann U87 incorporating a custom conversion by InnerTUBE Audio. "The warmth and smooth punch of the converted 87 wins when compared with

the stock U87," says Eastside's Holtzman. In addition, Eastside relies upon the services of German microphone-modifying engineer Peter Drefahl. "Peter does incredible work on all vintage microphones. One of our favorites is a Neumann/Gefell U57 totally rehabbed and outfitted with his solid-state multipattern power supply," Holtzman says.

While some artists, such as Sting and Clapton, sent in their contributions from abroad, the sessions afforded Cutarella and Cathcart the experience of a lifetime, working with an incredibly diverse collection of musicians. Edgar Winter sang "Rock and Roll, Hoochie Koo" at Capitol Studio A and played sax on "69 Freedom Special" before, after a casual mention from Cutarella, recording a version of his "Dying to Live" with the band. "It was amazing," Cutarella recalls. "The guy that wrote that song so long ago, he still has his chops and he just blew it down in one take." (The song is expected to appear as a bonus track in one release configuration or another.)

For Frampton's "So Into You," the team recorded a backing track in L.A., which, as it turned out, wasn't used. "That was one song where we did take after take, and it just didn't provide the artist the kind of framework for him to succeed with the song," says Cathcart. "We played it for Peter and he decided to re-record it with us in New York, playing all of the rhythm guitar parts himself. Then he took the files to his home in Ohio and overdubbed some more." Frampton was also coaxed into performing on another artist's track. "He was

At Capitol Records, from left: bassist Abe Laboriel, Hiram Bullock (guitar), Greg Mathieson (keyboard/Hammond), and co-producers Cathcart and Cutarella

in the same day as Johnny Rzeznik, who was there to record U2's 'All I Want Is You,'" recalls Cutarella. "He had nothing to do, so we just asked him to get in there and play, and he didn't have a problem with it."

Most challenging, engineering-wise, were two tracks featuring the late Sam Cooke: "(Somebody) Ease My Troublin' Mind" and "Good News," which feature Clapton and Beck, respectively. Cathcart and Urselli took the original 3-track recordings of the two songs, owned and supplied by ABKCO Records, and, in Pro Tools, time-stretched each bar to provide the backing band an even tempo to record to. The original stereo track was then EQ'd to roll off the low end as much as possible to allow the musicians to clearly hear Cooke's original vocal (and some percussion to assist in timing).

Another historic—and unexpected—recording also appears on the disc. Before a new version of Steve Miller's "Fly Like an Eagle" (recorded separately by Miller and his band), a five-year-old Miller is heard talking with his godfather—Paul—who, after hearing the young boy walking about the yard singing, correctly prophesies, "Steve, you're really gonna go places." "That was recorded in 1949 at Bertha and George Miller's house in Milwaukee," Paul recalls. "I never knew George was going to record the thing."

Of all the album's overdubs, however, none was as important as the ones by the master himself. The recording was done, as mentioned, at Paul's home. "He never really has worked in studios anyway," notes Cutarella of Paul, who is known for recording everywhere but a studio. "He did come to the studio in New York and just said, 'You know, I'd really like you guys to come out to the house and we'll put it together that way.'" And like a true musician, Paul got somewhat of a late start each day. "He doesn't get up till four in the afternoon!" Cutarella says. Age, of course, can also affect one's attempt at playing rock 'n' roll. "I have arthritis in my hands, which makes it difficult," says Paul. "It just requires a new way of thinking."

Although Paul has a Tascam MX-2424 SE digital recording system, Cathcart brought a G4 laptop with Pro Tools, connected via a Digi 002 Pro Tools interface and patched into Paul's API board for monitoring. Paul took advantage of the opportunity to try all the latest gizmos (including a Line 6 Vetta II digital modeling amplifier), though none seemed to surprise him. "Every time we'd show him something, he'd look at it for a while and say, 'I invented that!'" says Cutarella.

The trick for Paul was to come up with guitar parts that would fit neatly into the existing recordings. According to Paul, "I

Eastside Sound Studios' guitar collection

would listen to the track and say, 'Okay, now the question is, I could play a lot of different things there, but which is the thing that's going to marry to it the most? What can I do to enhance it? Maybe nothing.'" Notes Cutarella, "There are some bits you'll hear just classic Les Paul on there, and other times he's just playing some guitar chinks."

On the album, Paul made a point of allowing his guests to be the ones shining. "I think a lot of times," notes Cathcart, "he kind of looked at what was going on with these younger musicians, and said, 'This is about what I've done to enable them to do what they did. I'm going to sit back and watch what they're doing, and I'm going to contribute and play rhythm guitar and just marvel at all that's come out of my multitrack recording and electric guitar.'"

Paul agrees. "When you find the picture, then you find the thing that fits the picture. Otherwise, you're adding something just to be there and that's not the answer. The answer is, don't get in the other guy's way—you want to make him the star. All I am is the frame around the picture."

MIX ONLINE EXTRAS

HOT CLUB OF SAN FRANCISCO

year (though with many personnel changes along the way), the HCSF has just released their ninth album, *Postcards From Gypsyland* on the Lost Wax Records label, and has been playing more live dates than at any time in the group's history. As this story was being written in early June, the CD's opening track, "Not So Fast," written by the disc's producer,

Adam Levy, was Number 12 on America's Jazz Countdown chart of jazz radio airplay—quite a feat for this style of music.

"I never thought I'd see a Django revival or whatever you want to call all this interest in his music," says an obviously pleased Mehling. "Part of me is a little concerned that it's just a fad, but I don't think the music is going to go away. The good news is that more people now know who Django is than in his lifetime. All of his records—even the outtakes that weren't originally released—are in print right now, which is pretty crazy for a guy who's been dead for more than 50 years."

Why is it happening? "It's hard to say," Mehling answers. "Obviously, it's great music. It has a lot of spirit. Beyond that, the world loves the guitar, and every couple of years, there's a movement back toward acoustic music; also, every few years, it seems there's a movement back toward jazz, so this plays into all that because it combines all those things." Django's music has been turning up on film soundtracks, in commercials and even on the hit videogame called *Mafia* (which is set in the '30s). A popular biography of the guitarist—Michael Dregni's *Django: The Life and Music of a Gypsy Legend*—came out last year to general acclaim.

"A lot of people are buying the guitars and learning the repertoire," Mehling offers, "but it's really hard to learn how to play this music unless you actually hang around gypsies—it's really apples and oranges when Americans play this music and gypsies play this music. Even I have to keep humbling myself and go back to the gypsies to learn technical things." In the years before he formed the HCSF, Mehling immersed himself in the style, playing with gypsies on the streets of Paris (this seems to be a rite of passage for serious students of the style) and playing for a spell with Dan Hicks, whose own twisted swing is clearly derived from Django's.

From the HCSF's beginning, Mehling has not been content to merely ape Django's style and reproduce his tunes note for note. Rather, he has always played original songs that he and his band mates have written and used the acoustic ensemble as a forum to interpret songs in varying styles. On the group's albums, the HCSF have covered songs by Fats Waller, The Beatles, Chick Corea, Benny Goodman, Rimsky-Korsakov and Thelonious Monk, among others—just as Django was an interpreter of popular songs (as well as a fine songwriter himself).

Postcards From Gypsyland contains a typically broad selection of tunes spanning many decades' and countries' styles, but always rooted in gypsy jazz—what the French called *jazz manouche*. The album

amply showcases the current HCSF lineup's expressiveness, grace and precision. In addition to Mehling, the band comprises violinists Evan "Zeppo" Price and Olivier Manchon (Django's most famous musical foil was the great violinist Stephane Grappelli), rhythm guitarists Josh Workman and Sam "Sammo" Miltich (who is just 20 now and has been playing this music for many years already) and bassist Ari Munkres.

When the band performs live, "We try to give the audience a full meal," Mehling says, "a little bit of this, a little bit of that; a little trio, a little quintet, a little septet, maybe even a solo or duo thing. We keep changing it up so the audience has to pay attention—'What's happening now?' We also try to have all of Django's tunes in our book, so if someone comes up and asks us to play something really obscure, we can say, 'Sure!'" he adds with a laugh.

Postcards From Gypsyland was recorded to Pro Tools last summer at Bay Records in Berkeley, Calif., then mixed on SSL G Series consoles at Different Fur in San Francisco and Dead Aunt Thelma's studio in Portland, Ore., home base of the project's engineer, Mark Orton, a fine musician and composer in his own right and leader of the Tin Hat Trio. Orton was the house engineer at New York's famous Knitting Factory club for a couple of years and has toured extensively doing front of house for Bill Frisell, the Lounge Lizards, Mr. Bungle and John Zorn. Levy is also a guitarist of some note, having worked with Tracy Chapman, Norah Jones, Joey Baron, Sex Mob and others, and being a leader on a number of his own albums through the years. Levy and Orton have worked on several different projects together.

Orton describes Bay Records' studio as "comfortable and a little funky." Though he says the studio's Otari console was occasionally problematic, "I made sure we had a lot of good equipment to work with. I come with several microphones and mic pre's. I was using four modern Schoeps with MK4 capsules and the studio had two of the older 221s. There are several tracks where the instrumentation breaks down from the standard quintet. For the smaller ensemble tunes, I would try to mike the guitars in stereo—the standard six inches off the body [of the guitar] to the player's left of the sound hole up on top—and as close as I could get without too much boom, although it's a great-sounding room, so that definitely figured into the sound of the recording.

"Otherwise, I was going with single mics to play it a little safer phase-wise except on the bass, which I always mike with two microphones: a [Neumann] 87 and a KM84. I

like to put a TLM 170 on top of the [violin] and then a Coles 4038 underneath behind the player, and I click it in out-of-phase and then I use that as my low midrange and midrange mic. It's a warmth thing, so if I want to fill in the body of the instrument, I can, or I can leave it out if I want more shimmer. The great thing about the 4038 is that it's a true ribbon mic with not much going on in the high end so it curbs the edginess of the violin. The violin and melodica were recorded in their own little room.

"I also had a [Neumann] SM69 FET up in the room, usually a little closer to the guitarists who were kind of bunched together; the bass was off in his own little gobo land to try to keep it clean. Finding the right balance and making sure everything stays in phase with that many live instruments individually miked in a big room like that is always a challenge, but this was all stuff I'm used to so it wasn't too difficult. It helps that it's a really well-tuned room and they're all such good players. I'd say about 90 percent of it was cut live and there was very little in the way of fixes or edits; they changed a solo once or twice, but nothing major." There was also some multiple tracking of the violinists to create a fuller sound on a couple of tunes.

"I was also using as many good preamps as I could come up with," Orton adds. "They had a quad Millennia [at the studio] and then I have a pair of Tube-Techs. I have a quad Nightpro and a pair of Vintechs—they're like 1073 knockoffs that are wonderful. They have a giant power supply, so they're a little bulky to move around, but they sound great. I think I might have used the console preamps a little, too, but I mostly just used the console for monitoring."

The album was cut over four days of 10- to 12-hour sessions; a fifth day was spent doing fixes. "It was pretty intense," Orton says, "but Adam Levy had a laptop full of hysterical sound bites and if things ever got too heavy, he'd press the Talkback and play a recording of some weird soul singer who'd made this two-hour-long monologue of why Epic Records should sign him. He had all sorts of odd things and he always had them at just the right moment."

For group leader Mehling, "Having a real producer and Mark Orton getting such gorgeous sounds really made this a great experience for us. In the past, we've never had enough money to make a great-sounding record, and this time, we just said, 'Screw it. We're going to really try to do it right.' And it was definitely worth it—so far, the album's doing great. The whole year has just been fantastic. We seemed to have turned a corner."

Jamiroquai
Dynamite (Epic)

Eliminating the threat of getting chucked into the "where are they now" file, British electro-funk combo Jamiroquai resurface with the aptly titled Dynamite, their first album in four years. A sick, fuzzed-out groove kicks off "Feels Just Like It Should," a mix of organic funk, electronic beats and Lenny Kravitz-isms. The title track, "Electric Mistress" and "Don't Give Hate a Chance" keep that disco ball turning, while tunes such as "Seven Days in Sunny June" call forth vintage soul. In true Jamiroquai fashion, frontman Jay Kay and co-producer David Spencer add contemporary samples, scratches and bleeps to the group's retro fare, plus a bit more guitar, showing that they're back in force and far from a bunch of "has-beens."

Producers: Jay Kay, David Spencer. Engineers: Rick Pope, Mike Spencer. Studios: Chillington Studios, Princes Risborough, UK. Mastering: Tom Coyne at Sterling Sound (New York City).

—Heather Johnson

Various Artists
Fusion For Miles: A Guitar Tribute (Tone Center)

The tributes to Miles Davis are coming fast and furious now, but this one is among the better ones. It's essentially a "fusion" workout, with 10 top rock and jazz-ish guitarists wailing over a top-flight house band (Dave Liebman, Alphonso Johnson, etc.) on a nice variety of Davis tunes from different eras. Mike Stern manages to take "So What" to some new spaces; Bill Frisell brings his magic touch to "Nefertiti"; Jimmy Herring shines on a the funky "Black Satin"; Bireli Lagrene is just right in exploring the nuances of "Spanish Key"; and Warren Haynes does nice work on one of my favorite Miles tunes, "It's About That Time." Kudos, too, to Steve Kimock, whose soaring slide elevates "Back Seat Betty." A fine effort all around.

Producer: Jeff Richman. Engineers: Paul Tavenner, Ken Wallace. Studio: Big City Recording (Granada Hills, Calif.). Mastering: Paul Tavenner.

—Blair Jackson

The Arcade Fire
The Arcade Fire EP (Merge)

This new U.S. release from last year's indie splash, The Arcade Fire was actually the debut from the Montreal-based band, predating the 2004 critically acclaimed Funeral. While this EP certainly has its moments—a window into the promise that the band would later fulfill—this is a largely unrealized work, lacking in both lyrics and instrumentation. At times, it's like listening to the Polyphonic Spree on Quaaludes (them, not you). Still, the blueprint for a great album is there, as lead singer Win Bulter vocalizes some of the somber optimism that would make Funeral such a beautiful elegy. "I'm Sleeping in a Submarine" evokes a dreamy brilliance that would show up on their LP. There are pieces missing to this puzzle, and having already seen a completed work makes it pale that much more in comparison.

Producer: Richard Parry. Studio: Mt. Desert Island (Maine).

—Ryan Wilkins

The Heygoods
Fleetwood Skynyrd (Hi-n-Dry)

Forget the strange title of this Boston duo's album; Perkins Parsons (as in Carl and Gram) might be more appropriate. Heygoods guitarist/singer/songwriter David Champagne (of Treat Her Right fame) has a serious rockabilly bent on some of his tunes, and his honey-voiced wife and co-leader, Katie, brings an appealing alt-country sensibility to this fine sophomore effort. With wonderful, instantly memorable hooks and a palpable chemistry between the two principals, the album has a real warmth and homey vibe to it. The duo's voices blend beautifully together, and there's tremendous variety to the guitar voicings throughout the album—each track sounds fresh. There's also a streak of humor running through much of it, like on David Champagne's faux redneck tune, "Doghouse." A nice find. Check out www.heygoods.com.

Producer: David Champagne. Recording/Mixing: Tom Dube, Andrew Mazzone, Billy Conway. Studio: Hi-n-Dry. Mastering: Jon Wiswell.   —Blair Jackson

Ponce de Leon
Ponce de Leon (Thorn01)

Remember '80s pop music? The cheesy synths? The strangely jarring sounds of raw MIDI notes? Sounds kinda bad, right? Enter Greg McKenna, John Hogan and Dave Reich (aka Ponce de Leon), a band who has taken all that was bad about '80s music and turned it into a masterpiece of experimental, free-flowing fun. It's a difficult band to characterize—sort of a twisted blend of the Sex Pistols and Ween, with a sprinkling of Yanni for good measure.

The album's standout track, "Snap Goes the Gator Jaw," starts with an ominous keyboard and quickly blossoms into a danceable, funky, percussion-heavy groove accompanied by hilarious Florida-themed lyrics. These guys are serious about making fun music, and that is an element too often overlooked in modern recordings. Snap!

Recorded by Wyatt Tuzo at his home studio. Mixer: Ponce de Leon. Mastering: Charlie Watts/Technovoice.

—Lori Kennedy

The Peasall Sisters
Home to You (Dualtone)

The young darlings of the old-time music set since their appearance on the O Brother, Where Art Thou? soundtrack ("In the Highways"), Leah, Sarah and Hannah Peasall are the real deal. Their debut offers a fine selection of traditional country-folk and mountain gospel tunes ("Angel Band," "I Never Will Marry," "Carrick Fergus") and three are written by Sarah Peasall, who clearly understands the genre, despite her youth. The girls were also arrangers on several songs. They have an angelic sister blend that will undoubtedly change as they age, though they'll probably only get better. These aren't just precocious kids; the music is genuinely deep and affecting. Instrumental support from the likes of Randy Scruggs, Jamie Hartford, Laura Cash and others is tasteful and tuneful.

Producer: John Carter Cash. Engineer: Chuck Turner. Studios: Cash Cabin, Scruggs Sound. Mastering: Jim DeMain at Yes Master.

—Blair Jackson

COAST

L.A. GRAPEVINE

by Maureen Droney

Intrigued by the idea of a "business-to-business record company," I dropped in at the Westside's rapidly growing RipTide Music (www.riptidemusic.com), a secret weapon in the arsenal of many busy music supervisors and editors. Founded five years ago by musicians Rich and Ellie Goldman, RipTide is a boutique shop working with top-flight artists and composers to provide licensing, scoring and A&R for films, television, games, trailers and advertising.

From left: Dan Silver, Ellie Goldman, Emily Weber, Rich Goldman, Bob Kaminsky and Carrie Adase

With recent placements in such high-profile games as *Gran Turismo 4* and Sony's *God of War*, trailers that include *Batman Begins*, *Sin City*, *Stealth*, *Herbie: Fully Loaded* and *Mr. & Mrs. Smith*; and on television with *North Shore*, *CSI* and *Malcolm in the Middle*, RipTide's on a roll.

"We've been in the production business forever," says Rich Goldman, who, with his wife, Ellie, formerly owned Cincinnati's Fifth Floor Studios, where such luminaries as Bootsy Collins, the Ohio Players, Prince and Sheila E recorded. As a self-described "gun for hire," Goldman produced music for "everything" until, watching the industry change, he began looking in different directions.

"The concept for RipTide came out of seeing so many artists—bands, singer/songwriters and composers—who had so much fantastic music sitting on the shelf,"

he explains. "We started aggregating that great music. At the same time, we reconnected with Bob Kaminsky, who had been in A&R at A&M Records."

Ironically, Kaminsky, now a partner in RipTide, met the Goldmans when he passed on an act they were pitching. When they met again, Kaminsky was producing network television specials and working for a company that sourced content for Video-on-Demand. This time, there was a meeting of the minds.

"All this musical content out there, and because of the consolidating of radio and record companies, fewer and fewer avenues to market it," Kaminsky comments. "With the technology curve, we've never had more people making more diverse music with better production value. But there are fewer ways for them to sell it. Being musicians ourselves and knowing all sorts of people in the industry, we realized that we could help find the correct audience for a lot of this music.

"Now, we provide the functions of a traditional label: finding music and, in many cases, assisting in the production of it. We're also, in a way, manufacturing, distributing and promoting."

Also like a label, RipTide acts as gatekeeper. "We're extremely selective," Goldman points out. "We primarily focus on music that we know our buyers want. We compete directly with major labels to place things, so everything we represent has to be on the highest level. The people who buy our music respect our musical knowledge, and we only give them what really works.

"The problems and disarray of the record industry have, in some ways, been a boost to our company," he continues. "Record companies are looking for something very traditionally commercial. Their machinery needs to work with it,

NASHVILLE SKYLINE

by Rick Clark

Just half-an-hour northeast from downtown and Music Row (near Gallatin, Tenn.) is Karian Studios (www.karianstudios.com), claiming to be Nashville's only resort studio. Karian is the brainchild of husband/wife team Ian and Karen D'Souza, who bring years of industry experience in a range of disciplines that have coalesced into making Karian an incredibly well-rounded turnkey recording and residential experience. It is perfectly suited for any serious artist or band looking for privacy, quality hotel-level lodging and services, and a great studio environment.

How many studios can you go to for $1,000 a day (Karian's grand opening rate; standard day rate is $1,450) and have a complimentary meal each day—on white linen, no less—and a guest suite with turn-down service, monogrammed robes and access to amenities such as horseback riding, a boat at nearby Old Hickory Lake, gourmet catering, private jet and limousine service, and more personal touches like massage, pedicure and the like?

The main studio, which is housed within a 10,000-square-foot Mediterranean-style estate on a gated three acres, was designed by Christopher Huston, who has earned more than his share of Gold and Platinum Awards (and a Grammy) for his engineering and production work.

The three-story studio building's main floor comprises the main recording and control rooms, with the second floor reserved for living quarters and kitchen. The third floor has additional living space and a mastering studio, which looks out over the rolling middle Tennessee landscape.

The 800-square-foot control room features an automated SSL 4072 E/G+ console, Pro Tools|HD3 Accel system, Otari RADAR II 24-bit 192 kHz, Otari 2-inch SR, Neve EQs, vintage Neumann and AKG mics, API EQs, Lexicon outboard and numerous Pro Tools plug-ins. Monitors are Genelec 1036s and Dynaudio M2s, with matching sub.

by David Weiss

Aesthetically, the control room features three tiers, with theater seating in the top rear. One side of the control room is glassed with full views for everyone to see clearly into the 1,000-square-foot tracking space and four iso booths, one of which features a grand piano. The 600-square-foot mastering room has a Sonic Studio HD mastering deck, Dunlavy custom monitoring, Weiss EQs, Z-Systems compression and Avalon mastering gear, among other things.

Karian officially opened for business in January 2005, and has already been so busy that Ian D'Souza is talking about building a matching facility adjoining the current complex. Among those who have worked at Karian is *American Idol* winner Carrie Underwood, who was spending loads of time at the studio being pitched by Nashville's hottest songwriters for her debut album. Most recently, Karian has been hosting Maverick Records rock band Tantric for the mixdown of their latest (still untitled) album, which is due out sometime during the fourth quarter of this year. Produced by Elliot Blakey, the project was recorded in Louisville. The band, whose first two albums have sold in excess of a million units, had recorded at a studio that turned out to be poorly maintained, necessitating that they find another place to mix. A referral brought them to Karian.

"The guys [from Tantric] are from Louisville, and they have families there

From left: Tantric guitarist Todd Whitener, studio co-owner Ian D'Souza, drummer Matt Taul, lead vocalist Hugh Ferreira, studio co-owner Karen D'Souza and producer/engineer Elliot Blakey

They say there are a million stories in the Naked City. Come to think of it, there have probably been a million *albums* made in the Naked City (New York City, for our purposes), but none with such an unlikely genesis as Jimmy Norman's *Little Pieces*. A gorgeously soulful CD by a lifelong songwriter with amazing credits but little recognition, its recording is the tale of how a dedicated team of New York City engineers and musicians helped rescue a precious set of songs from the trash bin—literally—and turn them into jewels in a jewel case.

It all began when Brooklyn-based producer and guitarist/dobro player Kerryn Tolhurst started taking part in regular, high-level Monday night jam sessions at an Upper West Side restaurant called Penang. One of the singers who began showing up to put his wise R&B voice on the mic seemed to be from another era, and indeed he was: It was Jimmy Norman (www.jimmynorman.net), whose musical resume had grown quite long since he first appeared on the planet in 1937. His past songwriting collaborators included no less than Bob Marley, Jimi Hendrix, Lloyd Price, Lou Rawls and Johnny Nash. While performing in venues from the chitlin' circuit to the Apollo Theatre and Carnegie Hall, Norman shared the stage with Jerry Lee Lewis, Solomon Burke, Marvin Gaye, The Temptations, Ben E. King and Ike & Tina Turner. On top of that, he sang lead for Carl Gardner's well-known group, The Coasters. Upping the ante, Norman wrote lyrics for "Time Is on My Side" during Irma Thomas' 1964 recording session, later to become a Rolling Stones classic hit. He was also the featured vocalist on Eddie Palmieri's 1971 Latin funk breakthrough, *Harlem River Drive*.

It is an astounding career, but not one that had netted Norman

Jimmy Norman (left) at the first recording session of Little Pieces with producer Kerryn Tolhurst. The first recordings were made in Norman's Upper West Side apartment in New York City in the summer of 2002.

any kind of monetary windfall for his retirement years. Fortunately for him, the Jazz Foundation of America (www.jazzfoundation.org) was tuned in with financial and medical assistance from its emergency fund. It was 2002, and what happened next was an amazing three-year sequence of events that would allow *Little Pieces* to come to life. "Two Jazz Foundation volunteers named Lily Morton and Jeni Lausch were doing some cleanup in his apartment," Tolhurst recalls, "and they came across notebooks in a trash bag that were going to be thrown out. They found out these were notebooks of songs written by Jimmy in the 1960s but never recorded. News of this came to me and my ears perked up."

Tolhurst went to Norman's apartment around the corner from Penang, started going through the songs and was astonished to realize that Norman remembered the melody to each tune, scratch piano part included. "Jimmy had a heart attack in the mid-1990s after he joined The Coasters and couldn't travel or tour anymore," Tolhurst explains. "He got very excited again with the prospect of being able to record this stuff. So the next question came, how to do it? It was in fragments. Given Jimmy's health, I figured we had to get the vocals

ONE UNION RECORDING
SAN FRANCISCO POST HOUSE CELEBRATES 10TH BIRTHDAY

It hasn't generated waves of publicity like Skywalker Sound across the Bay, but San Francisco post house One Union Recording has remained "on the curve" of audio mixing, sound design, ADR and post-production technology for the past 10 years. For its 10th birthday, the all-digital facility got treated to a cosmetic facelift and technical renovation that includes a facility-wide upgrade to Digidesign Pro Tools|HD Accel 6.7, the latest Waves Gold Bundle and Digidesign Massive Pack 3 plug-ins. Each of One Union's four rooms now offers Mac G5 processors, Digidesign's Sync I/O and dual 19-inch flat-panel LCOs. All rooms are networked to a G5 server and operate off of a central machine room, which means that everything from music libraries to work orders to audio files can be accessed "at the keystroke of an engineer's fingers," according to facility manger John McGleenan.

Studios Two and Four both cater to commercial post, surround sound mixing, ADR and sound design; each contains a Yamaha O2R, with the latter also offering ProControl with Edit Pack. Studio One, the facility's premier room, also offers an O2R, and attracts audio post, voiceover work and mix-to-picture sessions. Studio Three, One Union's premium surround room, houses a Euphonix S-5. Aside from the technical goodies, the operation's comfortable décor, prime downtown location and scenic Bay Bridge views give high-profile ad clients such as Saatchi & Saatchi; film companies Dreamworks, Pixar, EA Sports and the Discovery Channel; and corporate heavyweights Microsoft, Macy's and The Gap even more reason to keep their business in downtown S.F. And apparently, they're not the only ones, as the city has experienced significant growth in the years following the dotcom and 9/11 slump. "San Francisco is an amazing post city and has amazing post people," says McGleenan. "It's definitely our time to shine again."

ROCK GROWS IN WEED
GFE RECORDS AT RADIOSTAR

Pictured in Studio A, from left: GFE members Tobias Hawkins III, Jeff Left, Ty Gerhardt, James Maize and producer/engineer Rich Veltrop

The Girlfriend Experience, a San Francisco–based hard rock band featuring members of Ing, Counting Crows and Laundry, recently wrapped up a two-week session at Syliva Massy Shivy's RadioStar Studios (Weed, Calif.). Shivy and Rich Veltrop co-produced several songs for the band's full-length debut, *When In Rome...Do As the Lions*, tracking on Studio B's Amek TAC and Neve BCM-10 consoles, and mixing on Studio A's Neve 8038. GFE reportedly approached Shivy because of her experience with like bands such as Tool, Powerman 5000 and System of a Down, and the results, as noted on the group's Website (www.girlfriendexperience.org), are "simply awesome."

NASHVILLE/NYC DOLLS
PARTON, JONES AT AVATAR

Norah Jones (left), co-producer Steve Buckingham and Dolly Parton (right)

Dolly Parton made the trek from Tennessee to New York City to record a duet with pop/jazz celeb Norah Jones at Avatar's Studio A. The song is one of many duets featured on Parton's forthcoming release, *Those Were the Days*, slated for October release. Other guests include longtime partner Porter Wagoner, Pam Tillis, Keith Urban and Sarah McLachlan. Matt Boynton engineered, with assistance from Ava Takemura.

BEHIND THE GLASS

SIMPSON SIGHTING
POP STAR ENTERS THE VILLAGE

In Studio F from left (top): assistant engineer Jared Nugent, keyboardist Dan Shea, producer Corey Rooney; (bottom) engineer Ian Cross, Jessica Simpson and her assistant, Kasey

Not long after wrapping up her *The Dukes of Hazzard* role, pop music/reality show star Jessica Simpson entered The Village in Los Angeles with producer Corey Rooney and engineer Ian Cross to create material for her next album. The Simpson crew worked in Studio F, the Village's new 5.1 room equipped with Pro Tools|HD3 and ProControl.

PLATINUM ICE
RAPPER MASTERS AT WEXTRAX

Engineer Rob Wechsler (right) recently mastered Vanilla Ice's new release, *Platinum Underground*, at WexTrax Mastering in McKinney, Texas. The project was mixed in Pro Tools (outboard assistance by a Lexicon 960L and multiple TC M3000s) by Hal Fitzgerald and the "Ice Man" at Maximedia Studios (Dallas), then delivered to WexTrax in 24-bit/48k, DVD-R format.

TRACK SHEET

MIDWEST
Engineer/producer Jeff "Madjef" Taylor completed production and mixing for Sounds of Blackness' latest album at SLR Recording Studio (formerly Flyte Tyme Studio, Minneapolis) with producer LaSalle Gabriel. He mastered the album at Bernie Grundman's in L.A...Engineers James Harley and Nathaniel Smasal and producer Matt Kirkwold tracked and mixed songs for Quietdrive's Epic debut at The Boiler Room, The Terrarium and Mastermix Studios (Minneapolis), respectively... Indie rockers The Melismatics mastered their latest album with Greg Reierson at Rare Form Mastering (Minneapolis)...Engine Music Studios (Chicago) reports that Brian Deck came in to produce PureTone Records' The You with Colin Studybaker and Balthazar De Ley engineering. De Ley also engineered tracks for Napalm Records band Hurtlocker...Eric Katte chose Smart Studios (Madison, WI) to record rock band Sunspot for an upcoming Raw-Tracks.com release...At Chapman Recording (Kansas City, MO), blues artist Gary Clark Jr. tracked/mixed songs for the upcoming film *Lenexa, One Mile*. Local band Pomeroy worked on a new EP with co-producer/engineer Robert Rebeck.

NORTHWEST
Studio D Recording (San Francisco) finished surround mixing/mastering on a Carlos Santana/Wayne Shorter DVD. Studio owner Joel Jaffe handled the audio post and surround mixing. Magic Christian, featuring Cyril Jordan from the Flamin' Groovies, recorded their next release with Jaffe engineering and co-producing (with Jordon). Jaffe also wrapped up indie artist Liz Kennedy's debut. Bonnie Raitt stopped in to film interviews for an upcoming film about B.B. King, and producer Wren Kleiss and engineer David Gleason worked on a forthcoming project for The Wake...Sylvia Massy Shivy, Kale Holmes and Rich Veltrop shared mixing duties for Final Animal Alpha at Shivy's RadioStar Studios (Weed, CA), the proud new owners of a pair of Crystal EQs pulled from one of Andrew Berliner's custom consoles at Crystal Sound in Hollywood...Nettleingham Audio (Vancouver, WA) engineer Kevin Nettleingham mastered releases for PDX artists Jesse Shriber, Jonny X & The Groadies, Lloyd Allen, Barbara Cecil, Softcore and Dave Carter, as well as the band Ten 33, a Deep Elm Records sampler and albums for Emile Pandolfi, Bronn Journey and CART!

SOUTHEAST
Allen Morgan mixed/edited tracks for artist Skye Dyer with producer Jamie Kyle, and worked on the upcoming release for Sarah Darling, a finalist from the E! channel's *The Entertainer*, at his Allen Morgan Audio (Nashville)...Jim Ebert camped at Dragonfly Studios (Haymarket, VA) with engineer Scott Spelbring to record artist Niki Barr. The band Down to This tracked their new album with producer/engineer Spelbring and mixer Jeff Juliano. Budweiser

Producer Richard Barone visited Dubway Studios (NYC) with Jolie Jones (Quincy Jones' daughter), who tracked material for her new children's album. Dubway's Jason Marcucci and Mike Presta engineered. From left: artist Johnny Rogers, Jolie Jones, Richard Barone, Dunway engineer Jason Marcucci and Dubwoy studio manager Steven Alvarado

True Music artists Welbilt also completed new music with Spelbring and Juliano...Jeff Carroll of Bluefield Mastering (Raleigh, NC) recently mastered Ron Sexsmith's newest project, *Sexsmith & Kerr: Destination Unknown*, out September 6 in the U.S... Jamie Foxx was in Miami's Circle House Studios to track vocals for a new single with producers Harold Lilly & The Usual Suspects and New York City engineer Kamel Abdo...ATL's happenin' Patchwerk Recording hosted Destiny's Child producer Ced Keys, who was in tracking beats for "Cater to You Remix" and "Girl Remix"; Steve Fisher engineered. Raekwon "The Chef" teamed with Fisher to record vocals for several songs, while Chingy spent six days with Miles Walker and Denny Ogle, who rough-mixed 10 songs and tracked vocals for another. The lovely Floetry tapped Leslie Brathwaite to mix three songs for a new project; Brathwaite stuck around to mix two songs for Ginuwine.

NORTHEAST
Avatar (NYC) welcomed John Mayer, who stopped by with producer/drummer Steve Jordan and bassist Charlie Hunter to work on an upcoming release with engineer Dave O'Donnell, then played on an upcoming B.B. King tribute engineered by Anthony Ruotolo. Donald Fagen nailed vocal overdubs with engineer Brian Montgomery and producer/mixer Rich Costey, who overdubbed and mixed the upcoming Franz Ferdinand album...Nothing Rhymes With Orange visited Threshold Music (NYC) to record their new CD with producer/owner AJ Maltese and engineer Kato. Indie bands Vinyl Addicts and Phase 9 also worked out new tracks...Sound on Sound (NYC) reports its busiest month ever. Producer/engineer David Beneth worked on projects for Dropping Daylight, The Chemistry, Bobaflex, As I Lay Dying, Breaking Benjamin and Clutch. Chico Hamilton tracked with engineer Chris Fasulo; KLB Productions mixed/edited a Converse spot with Grandmaster Flash and Kathryn Diehl; Will Downing mixed with engineer Ray Bardani; Mary J. Blige tracked with Swizz Beatz and Brian Lodato; Ali & Gipp recorded/edited with producer Dallas Austin and Chip Karpells; Ice Cube tracked with engineer Bojan Dugich and a slew of producers; and the imitable Kayne West tracked with engineer Lodato. ∎

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and the artists need to tour. We're not encumbered by those things. We have unbelievable talent showing up at our door because we have ways of exposing people's music and making money with it."

Staff composer Dan Silver, along with Emily Weber, runs RipTide's Pro Tools–based studio. "We specialize in on-the-edge, knock-your-socks-off action music," he informs, "but we have every style, from electronic, punk rock, orchestral, hip hop and industrial/metal hybrid to what sounds like vintage field recordings of a harmonica player. When the music originally comes in, we take a lot of time with it: editing, mastering, even going back to the producer

PHOTO: MAUREEN DRONEY

O'Henry's prize-winners, from left: composer John Frizzell, Nickel Creek's Sean and Sara Watkins, and engineer Rick Winquest

and helping construct it to better serve the clients.

"I deal with a huge flow of music. I'm constantly on e-mail and IM with several music supervisors at once who type, 'What do you have that sounds like this?' I distribute our music via Internet, IM or, if they've got one of our collections of compilation discs, I can suggest where [on them] to find the music."

According to Goldman, RipTide's success stems from performance, recording quality and, "the fact that it's an easy deal. We're a one-stop shop. For 95 percent of the music we offer, we represent both the master and the publishing side. We can make a deal on the phone immediately."

RipTide has now branched out internationally, both with clients and artists. Kaminsky offers an example: "One of the game companies needed something that sounded like it was a popular song in Turkey. We happen to have a great composer there. We e-mailed him the cue, he wrote the song—in Turkish—overnight,

and had a singer come in. A few hours later, it was done. The client was delighted."

"It's an exciting process," concludes Goldman. "You're doing everything you can to give clients what they need in a very limited time frame. They trust our intuition, and that they'll make their deadlines. The clock is ticking; they have faith that we'll deliver, and we do."

At Burbank's O'Henry Studios, composer John Frizzell and engineer Rick Winquest scored *The Prizewinner of Defiance, Ohio,* with orchestra and feature performances by "newgrass" band Nickel Creek's Sean (guitar) and Sara (fiddle) Watkins.

Based on a true story, *The Prizewinner of Defiance, Ohio,* due out later this month, takes place in the 1950s and stars Julianne Moore, Woody Harrelson and Laura Dern. It tells the story of a mother of 10 who supports her family by winning commercial jingle contests. For the soundtrack, Frizzell recorded approximately 45 minutes of music that he describes as "definitely not a 'normal' score," which includes lots of muted strings, a plucked cello and a jazz/country feel.

Having worked together for 10 years on something like 20 films, Frizzell and Winquest have a groove going. "I do very detailed synth mockups, which Rick listens to prior to recording," says Frizzell. "And we have discussions. For this session, we talked about where to put the piano and harp, which, for this score, work like a unit. They trade back and forth, with parts normally covered by the piano's left hand often played by the harp."

"Both instruments ended up together in close proximity in a large iso booth," adds Winquest. "Since they played off one another, leakage was a factor in a good way."

Although the jingles of the era—for which Julianne Moore's character wins toasters, groceries and enough cash to pay her mortgage—were sometimes set to music, they actually originated as small poems. "There are probably about 10 minutes of score that emulates the kitsch '50s sound," notes Frizzell. "But most of it is dramatic, because the movie is really a drama about the sacrifices this mother made to keep her family going."

Eschewing a period sound, Frizzell

and Winquest aimed for something "contemporary, but very pure, with minimal reverb and a kind of blunt presence on everything." Winquest used a combination of new and vintage mics, noting, "This score is very 'exposed,' so we had to be especially careful of noise problems."

For high and mid strings, he chose Sennheiser MKH 80s; for celli, Neumann M49s; and for basses, Telefunken/Neumann U47s. The piano was captured with AKG C12s and the harp with a Schoeps CMC6 body fitted with an MK21 capsule. Sean Watkins' acoustic guitar took a Schoeps CMC6 with an MK5 capsule and a Sennheiser MKH40. Six mics captured Sara Watkins' solo fiddle. "We recorded her alone, close-miked with an MKH 80," says Winquest, "and also with the orchestra's LCR and wide room mics: three Neumann M149s for the Decca Tree and two MKH20s for the wide room. When we laid the violin on top of the orchestra in the mix, it melded together naturally."

"It's pretty wild on this score," Frizzell says with a laugh. "We had vocal recordings, orchestral music, a rhythm section and a ukulele. It pretty much has everything." ∎

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and wanted to stay close to home and keep the costs down," says Blakey, who met the band during the making of their first record.

"This is a brand-new facility, and you can live on-site and have more of the amenities that you need," he continues. "We wake up every day laughing because the environment here has been so much better than where we tracked, which was practically held together with Band-Aids. I would love to return here and work because the folks here have been far too kind to us."

Blakey describes the trio's latest work as being more aggressive in places, while pointing out that there are plenty of acoustic textures and "beautiful pop moments" with undistorted guitars.

Working in the studio the day I visited were Tantric's Todd Whitener (guitar, bass, vocals), Matt Taul (drums) and lead singer Hugo Ferreira, who showed up with wet hair and a Karian robe; he later returned wearing a Motörhead T-shirt.

While I was hanging out in the control room with Blakey and the band, someone jokingly asked if there was any reticence to come to Nashville, as there are those who think that someone may slip into

the studio and put a banjo on their music. Without missing a beat, the band exclaimed that yes, there *is* a banjo that appeared on their music: the culprit, a song called "Fall Down," which also features harmonica, mandolin and, to provide some yin to the yang, a rap by Nappy Roots' Skinny Deville.

The band is particularly excited about Deville's contribution. "Nappy Roots was working in the place above where we were recording. He laid down the track once and then said, 'You know what? I need to re-do this,'" says guitarist Whitener. "He knew exactly what he wanted and he just said, 'Roll it,' and doubled everything perfectly and put the right emphasis on certain words. He was great."

With the departure of their former bass player, Jesse Vest, the bass duties went to Whitener. "I've always been a big rap fan since I was a kid," he says. "In an odd way, that mindset kind of paid off when I started approaching the bass guitar, because most rap music is built around bass lines and drum patterns."

Taul, who works out all the song arrangement parts on drums with Whitener, says, "Todd's technique and his strength in his fingers seemed like he had been playing for years. It's hard-hitting. In fact, it's the hardest-hitting bass playing we've had on record so far."

As for working with Blakey in the studio, Whitener states, "Elliot didn't try and change us. It sounds like us playing on a really good day," he says with a laugh. "Concerning Karian, this is my favorite recording experience of any place we've been."

Ferreria adds, "I think people who don't want to come [to Nashville] because they think their record is going to sound like mainstream country are crazy. I would rather stay here and work a million times over any studio in L.A. This studio is particularly nice because there are no distractions and you can really get some work done." ∎

Special thanks to MTSU's Courtney White for helping to put this piece together.

done first. He also has emphysema so he had great difficulty singing; I could only get him for short periods of time. To get him into a studio wouldn't be cost-effective, so I figured I had to get the vocals before we went any further."

Unafraid to set up a basic field recording situation, Tolhurst started showing up at

Norman's place with a MiniDisc recorder to put down roughs of songs that would work together for an album. Next, Tolhurst took the roughs home, laid guitar down to a click track and mapped out arrangements for Norman to cut his sweetly gruff vocals back at his apartment, as Tolhurst recorded him through an Audio-Technica 4050 mic and Joe Meek preamp into his trusty Alesis ADAT 8-track. "I was looking for songs that would work as a cohesive unit, that fit the period but would speak now," says Tolhurst. "I love the Memphis R&B crossover, and that's kind of where I wanted to go with it. Jimmy was born in Nashville, so he has those roots.

"For recording, the room in Jimmy's apartment was pretty well padded. You could barely move in there and it was remarkably quiet. Jimmy enjoyed it; he'd always been at a formal studio with the clock ticking."

Vocal tracks in hand, Tolhurst headed to New York City's Studio 900 and dumped the ADAT recordings to 16-track 2-inch tape. Next, he brought in the pro musicians who made up the core of the Penang jam band to provide Norman with virtual backup, including bassist Paul Ossola, drummer Tony Beard, and keyboardists Jonny Rosch and Tony Shanahan. A laundry list of top New York City musicians would continue to come onboard to contribute Hammond organ, Wurlitzer, horns, backing vocals and more to the project. The list of contributing musicians grew to global proportions when Tolhurst went back to his native Australia and came away with another guest star, ex-Procol Harum organist Chris Copping. A half-dozen overdubs came in from across the world as Pro Tools files and ADATs (from anyone Tolhurst could find working on the format).

Along the way, Tolhurst was constantly planning ahead to prevent a logistical multimedia mess from forming. "I try to be organized," he says. "When I record, I don't overindulge myself. I tend to think before I put something to tape, and I like to know where it's going to go. I hear the stereo mix, and if there's a place to fill, it's going to go there. I'm not the kind to pile a lot of stuff on and figure it out later, so tracks that go down have a purpose."

It was moving in fits and starts, but *Little Pieces* was coming together. "All this was over the course of a couple of years. I was just grabbing time when I could and everyone was pretty much doing this pro bono," Tolhurst notes. "Then we hit a

stalemate because we ran out of money. Fortunately, a friend who was getting into the music business, Sam Nole, put up some money to get the record finished. When it finally came time to mix, things were pretty much in place."

Next stop was producer Joe Blaney's downtown studio, Joe Music, where the 2-inch tape and Pro Tools files came together to make 11 songs a rich reality. With mixer Dave McNair moving the faders, song after song emerged as its own chapter in an album that may someday be regarded as an instant classic. The graceful title track balances Norman's voice and lyrics with melodica and gentle rhythms, hair-raising in their musical subtlety. For true music aficionados, however, the capper will be Norman's soul-stirring rendition of "Time Is on My Side," a naturally awesome rebirth for a timeless song, performed by a man who took part in its creation.

Kerryn Tolhurst at a Little Pieces overdub session at Unique Studios

After being mastered by Rick Rowe of Rick Rowe Mastering, another New York City–based music legend, Judy Collins, stepped up to release and distribute the record on her Wildflower Records label. Four decades in the making from concept to completion, Jimmy Norman's 21st-century solo album proved to be worth the effort for everybody who had thrown their heart and soul into it—maybe Norman most of all.

"Jimmy was knocked out, having seen it go from the humble beginnings to the final mix we got in the end," Tolhurst says. "Jimmy had been a producer in his time, but he hadn't done that much recording in 10 years or so and a lot had changed in that period. It was a whole new world for him. The album is called *Little Pieces* because it's one of the songs, but it made sense: It was made up of little pieces of stuff in his apartment—little pieces of his life." ∎

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—FROM PAGE 28, THINGS THAT CHANGED MY LIFE
individual being able to control what they hear as they move about away from home. For the first time, ordinary people could sequence their own songs onto cassette and listen to what they wanted, when they wanted and *where* they wanted.

The entire MP3 industry owes its success to that.

7. SYNTHESIZERS

I don't know if this was a good thing or a very, very bad thing, but they arrived nonetheless. Between Moog and ARP, the deed was done. A whole new class of artificial sounds was suddenly available—sounds that no one had ever heard before. So, of course, everybody had to hear them 100 times a day, every day, for a decade or so.

Personally, I feel somewhat ashamed for my part in all this. I played a small role in their development: I programmed and I played them live and in studios. In fact, I did quite well with it all, and I am sorry.

I can't stand to listen to '70s synth crap. I am so sorry I helped. I didn't know…

8. THE ROCKMAN, THE ZOOM

One day, a tiny company came out with a handheld plastic box that made you sound like you were playing guitar live on a giant, noisy stage. Compression, distortion and cheesy bucket-brigade reverb in your pocket (if you had a big pocket). Quirky, noisy and breakable, it still produced the "Section 5 Effect," in fact even more so than the original item 5. Two sets of cans and you were a star.

And then came the Zoom 9002. It was 1,000 times a Rockman. Stereo, digital and loaded with effects that you could control, combine and memorize. This was an amazing toy. With a Zoom, the Section 5 Effect was poised to reach new mile-high levels. It just needed…

9. THE STEINBERGER

That's *it*! That's what it needed. The perfect air guitar! The original Steinberger six-string was technology at its best. A very good, very playable, futuristic, carbon-fiber headless guitar that had its own preamp and was so freakin' small *it fit in the overhead*. Now that, my friends, is progress!

Yes, one could now impress the hell out of women by playing live guitar on a plane or in a hotel room while sounding like the live concert from hell.

This indestructible guitar (and, yes, I did actually hammer a nail through a 2x4 one night with it) was so stable and reliable that I found myself, with only a few pickup mods, doing almost half of my studio work with it, making traveling reasonably painless. In fact, it stands in front of me as I type now, 200 years later, ready to pick up and play without tuning. Stable, instant gratification.

Thank you, Ned!

PARTING IS SUCH SWEET SORROW

And with that ends Part One. We have gotten up to the Good Times, when technology could be fully understood by those who wished to and life was getting real comfortable.

But now we have to take a short break. Don't go away. Have another drink, and we'll be right back to finish our list. Part Two will cover the transition years, when, in the interest of power, we all gave up understanding technology to get more technology. ∎

SSC is being uncharacteristically quiet about the apparent trend in his last couple of columns, but did reveal plans to return to a more hardcore line after next month. We are, however, not sure what that means.

World Radio History

this simple has potential problems: The designers found that the coin would sometimes bounce on the downswing, creating multiple triggers, so they put in a timer that would ignore new notes that were less than 250 ms later than previous notes. They justified their modification by explaining, "We predicted that typical users would not headbang faster than 240 beats per minute."

A team from Stanford University's CCRMA showed Beat Boxing—a pair of lightweight boxing gloves equipped with force sensors and accelerometers—hooked up to play percussion samples and loops with each punch and jab.

Roger Dannenberg of Carnegie Mellon University, who has been an important force in music software development for many years, showed a rather different side of himself with McBlare, a MIDI-controlled Highland bagpipe that can be played many times faster than it would in the hands of an actual Scotsman—and just as loud. It had its world premiere performance, he reported, at the recent graduation exercises of the university's School of Computer Science.

Perry Cook of Princeton University showed his devices for generating speech sounds based on wind-driven instruments, but not in the way you might think. Lisa is a modified accordion, with the keys controlling pitch, the buttons specifying phonemes and various flex and pressure sensors doing real-time modifications. Maggie (where ever did he get those names?) is based on a concertina—much simpler, but still very versatile—with built-in speakers to improve the illusion that it's (she's?) actually singing. Cook also had a contraption that looked like it had crawled out of the wreckage from an accident involving a small MIDI keyboard and a Hohner Melodica—which you might remember was a popular music toy some years ago—played by blowing in one end while fingering a keyboard sticking out in front of one's face. Cook calls his instrument the Voice-Oriented Melodica Interface Device, or VOMID.

Some presenters talked about participatory works, where the audience is the performance. In Levin's "Dialtones: A Tele-symphony," which was first performed in 2001 in Austria, about 200 audience members with cell phones are given specific ringtones and seat placements in the hall before the concert. A computer then plays the piece by dialing the phones' numbers in a pre-programmed order and switching on spotlights in the ceiling that point to where each phone is ringing. "There's an accuracy of plus or minus about a half second," Levin admitted.

There was also plenty of serious work and heavy-duty musicianship on display. Dan Overholt of the University of California, Santa Barbara talked about and performed with his Overtone Violin, a six-string solid-body violin with optical pickups, along with several knobs, a keypad, two sliders and a joystick. There's also a miniature video camera mounted at the top of the neck and ultrasonic sensors and accelerometers in the instrument and in a glove worn on the bow hand. It's all hooked up to a wireless USB system so there are no cables to trip over.

French-born composer Laetitia Sonami did a piece with a performance system called the Lady's Glove, which she helped develop at Amsterdam research center STEIM and has worked with for 15 years. It contains a formidable variety of touch, motion and electrical sensors, allowing for control of up to 30 simultaneous musical parameters. Her performance was a wonderfully expressive mix of concrete and abstract sounds, and was a great example of what can result when a performer has enough time to become a virtuoso on a new instrument.

Another virtuoso was Japanese composer and researcher Yoichi Nagashima, whose Wriggle Screamer II has two sensing systems. One looks like an empty picture

frame divided up into a 13x3 grid by optical beams. As he put his hands and wrists through the frame, he produced sounds of harps, bells, strings, percussion and orchestral hits, depending on whether he was slapping, poking, caressing or karate-chopping the space. The second system uses muscle (EMG) sensors in his arms and legs to provide more complex control over the sounds, which he exercised by wriggling his fingers, rotating his wrists and elbows, and kicking his feet.

A number of the presentations and performances involved dancers and how their highly disciplined body movements can be used to make music. Luke DuBois of New York University (and also the author of Cycling '74's Jitter software) did a fascinating collaboration with Turkish dancer Beliz Demircioglu, a graduate student at NYU. While DuBois held a video camera, Demircioglu athletically moved around the stage and a stylized image of her was projected on a video screen. At the same time, motion-capture software analyzed the dancer's position in space and looked for certain gestures that it was trained to recognize. It then translated that information into various musical parameters. It was an evocative performance and was true to Buxton's vision, as the connection between the physical gesture and the music was very clear.

Bringing down the house at one of the concerts was a performance by Giorgio Magnanensi, an Italian-born composer who now lives in Vancouver. Seated at the front-of-house console in the middle of the audience, Magnanensi frantically manipulated a dozen modified electronic toys of the old Speak&Spell variety, creating a ghastly, hysterical landscape of screaming, ripping "circuit-bent" sounds, made all the more hideous by the sounds' roots in (badly sampled) human voices, thrown around the hall by a 16-channel digital matrix mixer. At one point, a Furby with a small speaker in its stomach stopped working and the composer ripped a wire-filled twist tie in his teeth and shoved it into the critter's back, which brought it back to life. He told me later a solder joint had failed and he knew exactly where it was.

There was much more. Two presentations involved a Lemur, but they actually had nothing to do with each other. One Lemur was a new combination touch surface and LCD made by French company JazzMutant. (The product should be available in the U.S. from Cycling '74 by the time you read this.) Users can set up buttons, faders, knobs and moving colored balls on the 12-inch surface, which responds to multiple fingers simultaneously. It's very impressive and looks like it could be a great help in any digital studio, but it's not cheap—the cost is about the same as two Mackie control surfaces.

The other is an installation project comprising an army of MIDI-controlled mechanical instruments that are equipped with small motors, cams and various striking and spinning devices that vibrate, bang, scrape, pluck, slide and rattle. The creators of this menagerie call themselves the League of Electronic Musical Urban Robots (LEMUR).

Several speakers bemoaned how difficult it is for new electronic instruments to survive in the marketplace, despite the amount of ingenuity, inspiration and just plain hard work going on in the "alternative controllers" world that was evident at NIME. But one presenter gave a potentially bright picture for designers of these devices, thanks to the growth of other forms of electronic entertainment.

Tina "Bean" Blaine—percussionist, vocalist, inventor, "musical interactivist" at Interval Research and now professor at Carnegie Mellon—gave a talk on "The Convergence of Alternate Controllers and Musical Interfaces in Interactive Entertainment." A lot of the future of music is in games, she said—not just composing for them, but designing gadgets to use with them. From Dance Dance Revolution to Donkey Konga and Groove, many successful music-oriented games depend on unique hardware interfaces. And the game companies don't develop them, they license them. So who better to create those interfaces than the tinkerers and solder jockeys at NIME? "Everything you're doing," Blaine told the attendees, "the game industry can use."

So once again, a trip to Vancouver has left me in awe, both of the beauty of the place and of the concepts I encountered. I left the conference with all sorts of new ideas for my own course and my own music ringing in my head.

Perhaps what comes out of NIME will not be as earthshaking as what I saw at Digicon '83, but it eventually may be just as influential, in more subtle ways, as the science of computer/human interface design becomes more important in all of our activities. Better still, NIME is now established and will happen every year, so more and more people will be exposed to this exciting field. NIME '06 is going to be at IRCAM in Paris. I wonder whether I can come up with another idea for a paper? ∎

Paul D. Lehrman started piano lessons at age five, got his first soldering-iron burn at nine, sang in his first opera at 11 and bought his first electric guitar at 12. He's still collecting, singing and occasionally getting burned.

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C/O Rob Jaczko
Chair, Music Production and Engineering Department, MS-150 MPE
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All application materials must be received no later than **January 6, 2006**.

Incomplete applications will not be considered.

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Digidesign ICON

Keeping the Controller Under Control

As a longtime Pro Tools user and the owner of the first—and still largest—ICON console, I have discovered, created and stolen some great tricks. Many of these seem more common sense than trickery, but as Voltaire once said, "Common sense is not so common." My expertise leans greatly toward post-production, so many of the references will be about film and TV mixing.

FIRST THINGS FIRST

My first bit of advice isn't really a tip—it's a necessity: Upgrade to Pro Tools Version 6.9. I've been using V. 6.9.3 for a while now—a benefit of being a Digidesign beta tester— and I can't go back. In my opinion, V. 6.9 is the biggest mixing update since V. 4.3, when the ProControl was introduced. Automatch, auto-merge, null-point trim mode, non-destructive solo, inline console—there are too many improvements to list here, but the tips below assume you have an ICON and Pro Tools V. 6.9.

ONE-SHOT ACTIVATION

Several features embedded in V. 6.9 are specifically designed for D-Control and D-Command. On every setup, I use D-Control's ability to activate all automation parameters in one shot. If EQ or dynamics are focused and the Auto button is lit, then just touch any rotary knob while holding the OPT key. The same can be accomplished with any insert that's accessed with Custom fader "plug-in" mode or editing a plug-in on a channel strip while holding CTRL + OPT + CMD while the Do to All button is lit.

PAN FOR PARAMETERS, TOO

Beyond panning, the new joystick panners are also useful for editing plug-ins. In the Pan Mode window, press Custom on the touchscreen, then either X axis or Y axis. You can then assign a value to these by touching any rotary knob or fader that is on the focused channel. This can be useful for EQ sweeps or even Dopplerbys in GRM tools. The Auto mode lets you do perfect pans by moving the joystick to your end pan position and then hitting Punch 1 when you want to start the

pan. You must be rolling to do this, and the pan duration is determined by the glide time you have selected in the console's refs section.

THE NAME GAME

Glazed over in the manual, a simple but effective trick is the ability to name custom fader banks. If you select a bank and hold CTRL while double-tapping the bank's Edit button, a window will appear on your Pro Tools screen to name the bank. The bank name will then show in the center info section in D-Control or D-Command when the Bank Sel button is pressed.

SHUN THE MOUSE AND TRACKBALL

The real key to quick and efficient mixing is avoiding the mouse and trackball as Pro Tools has key commands for almost everything. Become familiar with the key commands document supplied with Pro Tools V. 6.9. This may not seem like a great tip for the ICON, but they do apply. Most everything you can do onscreen with the mouse, you can do on the console. The OPT key (or ALT for the Windows world) with a click on an onscreen parameter resets that parameter to its default. OPT + touching a fader on the console snaps that fader to zero. As CMD + dragging a value onscreen will adjust in fine scale, CMD + any rotary knob will also adjust in fine scale on the console. CMD + CTRL while clicking a value onscreen will view that value's automation. Hold CMD + CTRL and touch any knob or fader to bring that automation to view.

GLIDE AUTOMATION

I often use the "Write to all enabled parameters" setting for EQs, reverbs, pans, etc., but frequently need to do this in the middle of a clip. Glide lets you morph between a series of settings. When I have a sudden jump in automation, I select the out point of where I would like to glide to, suspend automation, drag my selection back to my glide In point and then "Glide to all enabled parameters." This function now exists in ICON's second Actions page.

MULTIPLE CUSTOM FADERS

Having the left and right Custom Faders sections was originally intended to let two mixers have custom layouts on the same system, but this is very useful in single-mixer applications. On the one side, I map the most frequently accessed faders for a given element so that I can easily switch between elements and not move much from the sweet spot. On the other Custom Fader set, I map my masters chain for particular elements. I may switch between two dialog chains that each have an EQ, compressor and the insert for my CEDAR DNS-2000. Using custom mapping, I can assign the master volume, the compressor's threshold and make-up, the high- and lowpass and a notch for my EQ, and the seven parameters for my CEDAR all to one bank of faders.

AUTOMATION COPY/PASTE

One of the frustrations of mixing with Pro Tools is its inability to group pans and other functions. A good workaround is Pro Tools' ability to copy all layers of automation. When viewing any automation parameter, highlight the desired area when you have created some automation and then hold CMD + CTRL + "C." A normal paste (CMD + "V") will paste all levels of automations, including multichannel pans, inserts and send automation. This is useful when you've created a complicated task on one region but wish to duplicate it on another region at the same time or elsewhere in the timeline. ∎

Brian Slack is the president of Widget Post in Los Angeles.

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