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Photographed at Skip Saylor Recording, Los Angeles

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CIRCLE #003 ON PRODUCT INFO CARD

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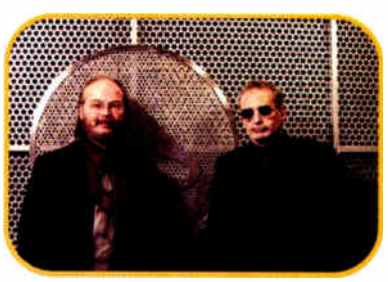
PROFESSIONAL AUDIO AND MUSIC PRODUCTION

APRIL 2001, VOLUME 25, NUMBER 4

FEATURES



On the Cover: One of the two Fairlight FAME editing suites in Turner Studios' new complex in Atlanta. Photo: Tom Hamilton/Spitfire Studios. For more, see page 14. Inset Photo: Mark Seliger.

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

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SOUND FOR PICTURE SPECIAL

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COAST TO COAST

DEPARTMENTS

COLUMNS

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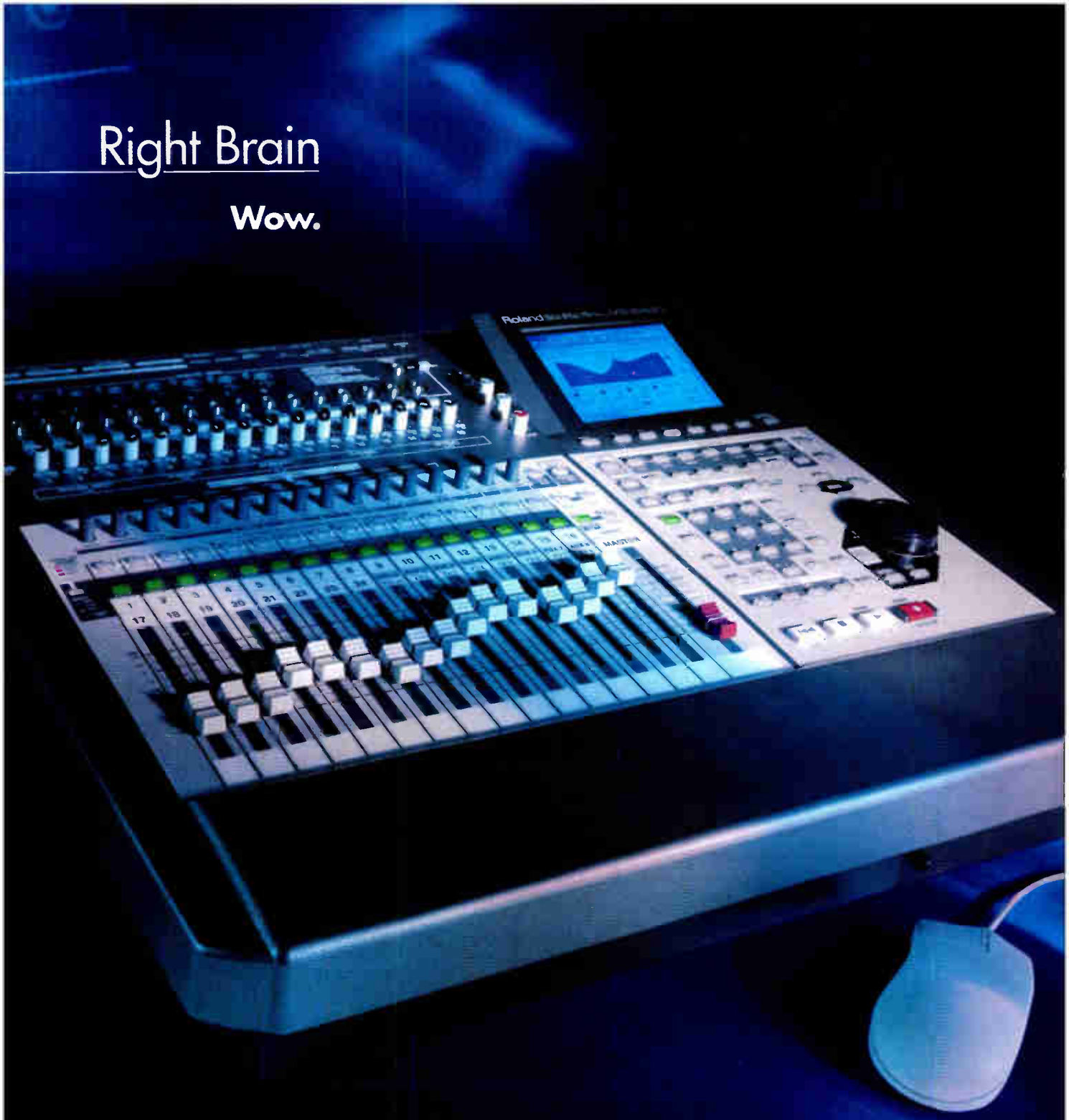

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CIRCLE #004 ON PRODUCT INFO CARD

FROM THE EDITOR

THE SMARTEST BET IN TOWN

Twenty years ago, MTV—the first 24-hour music video channel—was created by WASEC, a joint venture between Warner Communications and American Express. From a marketing standpoint, the notion was brilliant: Consumers subscribed to watch record label promo clips that were supplied free to MTV, which sold commercial spots and encouraged more cable systems to carry the service through its highly effective "I want my MTV" campaign.

On August 1, 1981, at 12:01 a.m.—just months after its inception—MTV debuted to the strains of The Buggles' "Video Killed the Radio Star," a selection that proved prophetic. The general public loved the "clips-as-programming" concept, and soon the copycats sprang up, ranging from NBC's *Friday Night Videos* and TBS's *Night Tracks* to local market clip shows, and eventually MTV's own spin-offs such as VH-1, MTV Europe, MTV Asia, etc.

Although these many promotional outlets (and the launch of the CD format around the same time) helped bring a boom to music sales, video also had its dark side. Artists suddenly found their music taking a backseat to their visual appeal. Ironically, a record label that balked at a $50,000 album budget had no qualms about writing checks for music videos (at $100,000 a pop) to promote that same album. But one thing was certain: Once the video box was opened, the music business was changed forever.

Around the time that MTV was launched, a visionary by the name of Michael Nesmith—yes, the same guitar player from The Monkees, but also a brilliant singer/songwriter/producer in his own right—released his 1981 "video album" collection of songs entitled *Elephant Parts*. Unconventional in that it was only sold in videotape form—without an accompanying audio CD release—the critically acclaimed *Elephant Parts* was not overly successful, but it was clearly years ahead of its time.

Whereas *Elephant Parts*' VHS format was fine for home viewing, videotape is hardly suitable for portable playback systems. Today, DVD provides an ideal format for long-form "video album" or live concert releases, and anyone who's listened to well-recorded Dolby Digital or DTS discs on a decent surround system would agree that the format is capable of audio performance that is acceptable to most consumers. By creating music releases in DVD form—with picture and sound—consumers would have numerous playback options, whether as audio-only in an in-dash player or watching the performance on a computer screen or large home theater system. As DVD replication makes its eventual price drop, DVD music plus picture releases could represent a powerful, value-added product priced competitively with today's CDs, yet offering much more in terms of versatility and content.

Whether DVD music releases will enter the mainstream as an alternative to CD is anybody's guess. However, DVD authoring services will surely be in heavy demand in the years to come. Many audio studios now offer CD editing/mastering/premastering, and DVD pre-production could provide a lucrative sideline for a facility or independent engineer. So as you're checking out this month's NAB show in Las Vegas, a couple of hours looking into authoring systems could be the smartest bet in town.

George Petersen

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FEEDBACK

HEALTHY HEARING COVERAGE

Thank you for the excellent pieces on hearing protection in January's *Mix*. There is a point that could benefit from additional emphasis, however. If a mixing engineer has sustained significant hearing damage, it is indeed probable that the engineer's perception of tonal balance is not going to be the same as the general population's. Bob McCarthy correctly describes this change in perception in terms of a graphic equalizer; the individual's ears are EQ'd with a broad high-frequency roll-off. It is also the case that the dynamic range of this individual's hearing is constricted so that, on a broadband basis, music is not going to sound nearly as loud as it does to the average listener. If you put these two characteristics together, it is clear that this engineer's mixes could be both excessively bright and (for live sound) even painfully loud when heard by nondamaged ears.

In standard audiometric practices, most clinicians only measure hearing sensitivity up to 8 kHz, and most are not trained in audio production and so are not able to suggest meaningful strategies to engineers. It seems that what is necessary is a convenient method for any engineer to determine how his or her ears perform, over the full range of frequencies and sound pressure levels, compared to the average person; and, more important, a signal processing strategy that will allow the engineer to compensate for hearing loss (if desired) through a private, personal monitor system, for the same reasons that we compensate for room acoustics. Ideally, mix adjustments should be made with accurate knowledge of one's own distinctive hearing characteristics, particularly after one has spent many years at the console.

Tony Eldon
Ear Q Technologies LLC

SHOCKING PHOTO

January 2001 *Mix* was most interesting for the articles on in-ear monitors and hearing. The articles by Mark Frink and Bob McCarthy were just the kind of viewpoints that working sound professionals need to be aware of.

I was shocked and saddened, however, to see a photograph of just the kind of thing we all should be working to eliminate. In the Moonshine Overamerica "Tour Profile" is an extremely scary photo of young people plastered against the speakers.

Was someone providing evidence for a negligence lawsuit, or did this one slip in under the radar of your editors? The young woman in the lower left of the photo is literally sitting with her head against the speaker grille (no doubt a subwoofer bin, the mids not far above), and the semiconscious folks to her left seem just as close, if not closer, and arguably senseless from either the sonic assault, or perhaps from things they ingested...

Hopefully, we'll see the end of this type of danger posed to naive or unaware concertgoers, before lawsuits begin to fly. Clearly, someone needs to protect children (and adults who act like them) who still think it's cool or hip to endure a lethal sonic assault. Maybe once-upon-a-time this was considered fun and relatively safe (considering the ±200-watt boxes that were used decades ago), but, today, the instantaneous damage inflicted by the kind of direct exposure to the drivers in the enclosures pictured in this article must be massive, immediate and permanent.

Concert venues and clubs have bouncers and security who protect performers and equipment. It's time someone protected the audience from their own ignorance, as well, and kept a safe distance between the speaker bins and the audience's ears. Why not make it mandatory to fly speakers or place protective barriers around high-SPL cabinets so that the sound is evenly distributed throughout the venue, instead of directly into the ear canals of the attendees?

Joe Hannigan
WestonSound.com

DVD-YAY!

Bravo on your DVD-A edition (December 2000 issue)! I have been very involved with the format for two years here at Sonic, in assisting our clients in workflow/title production. I am very pleased to see such good information published after all this time spent working toward the launch!

I appreciate that your magazine has been proactive in educating the audio community about the format. This will certainly help people conceptualize what the format can deliver so that they, hopefully, will decide to come onboard as demand increases.

Dietrick Hardwick
Sonic Solutions

NEW YEAR, NEW FORMAT

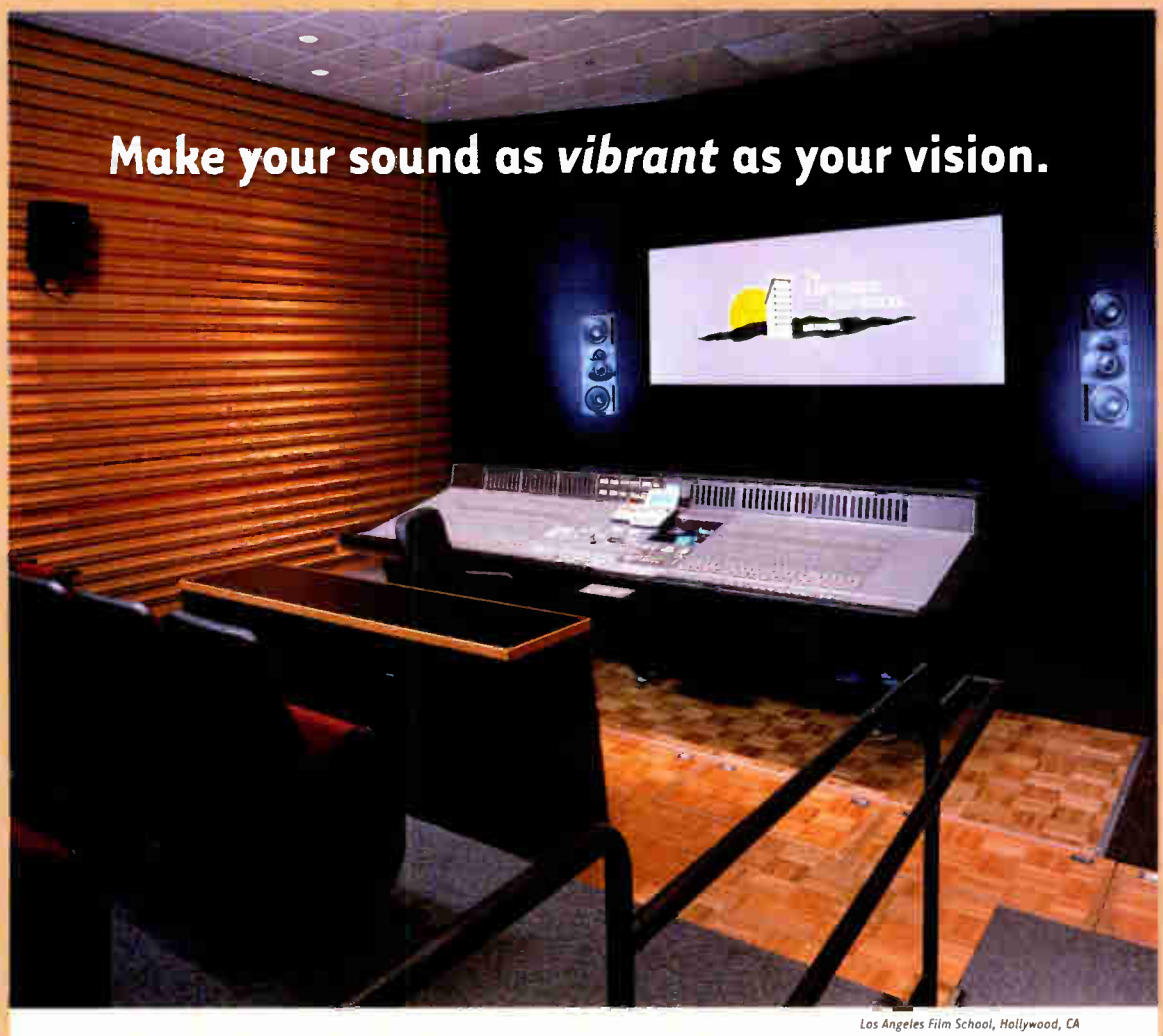
I liked the December edition of *Mix*, closing out the year with top-of-the-line A/D converters and the DVD-A section. I look forward to reading more about professional production for DVD-Audio covering all steps in the process, from some company's early meetings about a project to the mix house to the mastering stage and replication. Would you also encompass the availability and future of the hardware and software for consumers? I fully expect to read the review of the first official professional DVD-Audio player for studio reference playback in the pages of *Mix*.

In covering DVD-A, I hope you ask engineers who remaster older albums if they did a full remix from the original multitrack tapes or a mixed down 2-track. This is the stuff I find interesting when reading about remastering albums. Also, if the original was a digital recording, was it upsampled for the DVD-A release?

In reading other industry magazines covering surround sound production, I have found many differing perspectives on what goes into those six channels, and sometimes four channels. This is new ground to be covered, as surround mixing will become standard this decade. It is in these early years that we will see really groundbreaking new techniques. I think you should have a section every month that covers some aspect of DVD-Audio.

Brian Miklas
Via e-mail

Send Feedback to Mix
mixeditorial@intertec.com.



Los Angeles Film School, Hollywood, CA

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CURRENT

PROFESSIONAL AUDIO NEWS AND EVENTS

COURT ORDERS REMOVAL OF NAPSTER FILES

Napster co-founder Shawn Fonning

San Francisco—It was a packed house on March 2 at the U.S. District Court in San Francisco for the ongoing Napster trial. Lawyers for both Napster and various members of the record industry were in attendance to evaluate re-submitted injunctions, as was required by the Ninth Circuit Court on February 12. U.S. District Judge Marilyn Hall Patel issued her revised injunction against the file-sharing company on March 5.

The new injunction outlines the requirements imposed upon Napster to stop users from downloading illegally distributed music files. The injunction reads: "Once Napster 'receives reasonable knowledge' from any source identified of specific infringing files containing copyrighted sound recordings, Napster shall, within three business days, prevent such files from being included in the Napster index."

Concurrent with the preliminary injunction, Patel ordered that the recording industry bears the responsibility to deliver information by an "industry-accepted, computer-readable format" to Napster that includes the title of the work, the name of the recording artist, the file name available on the Napster system and a certification that the plaintiffs own or control the file.

Napster also told Judge Patel on March 2 that the company was installing its own filtering software to block nearly 1 million copyrighted files. According to David Boies, lead counsel for Napster, the filtering software allows users to post files to Napster's index but inserts a blocking mechanism between the user uploading the file and a different user viewing the index; therefore, users cannot download an infringing file because it does not show up on the index. However, users are currently able to access some infringing files by simply rewording song titles, such as typing in Metallica's "Fade to Black" as "Fade 2 Black." ■

GML FINDS NEW HOME

MANLEY LABS AND MASSENBURG ANNOUNCE MANUFACTURING ALLIANCE

EveAnna Manley, CEO of Manley Laboratories Inc., and George Massenburg, CEO of GML Inc., announced the beginning of production of GML audio peripheral products by Manley Labs. GML will vacate its current manufacturing facility in Van Nuys, Calif., and move all of its equipment and production staff to Manley Labs in Chino, Calif.

GML production testing, peripherals service, and automation support and service will relocate to Franklin, Tenn., where the R&D lab already resides. This facility will be directly supervised by Massenburg.

"I have admired EveAnna Manley's production capability for a long time," Massenburg said. "I thought, 'Why should I be tearing my hair out trying to duplicate this? We should just team up.'"

Manley said, "GML is the high-end, solid-state equivalent to our high-end vacuum tube gear. It fits perfectly. But it's the opportunity to work with George that is really exciting for us."

For more information, visit www.massenburg.com or www.manleylabs.com.

MIX FOUNDATION UPDATES

The Mix Foundation for Excellence in Audio recently announced the distribution of the proceeds from the 2000 TEC Awards. More than $45,000 was given to the House Ear Institute's Sound Partners Program, H.E.A.R., the AES Educational Foundation, SPARS, Berklee College of Music, Ex'pression Center for New Media, Institute of Audio Research, Middle Tennessee State University, University of Massachusetts-Lowell, University of Miami and the University of Southern California. The TEC Awards Scholarship Grant was awarded to Edgar Loor, a student at MTSU.

Mix L.A. Open Date Announced: The sixth annual Mix L.A. Open, sponsored by the Mix Foundation, is scheduled for Monday, June 11, at the Malibu Country Club. This year, the event will feature a silent auction, and a BMW roadster will be the prize at a special Hole-in-One Contest. Space is limited, so make your reservations early. For information about sponsorships or entry fees, go to www.tecawards.org or contact Karen Dunn at 925/939-6149 or KarenTEC@aol.com.

Scholarship Applications Available: Applications are now available for the 2001 TEC Awards Scholarship Grant. For an application form, send your request to TEC Awards, 1547 Palos Verdes Mall #294, Walnut Creek, CA 94596, or download it from www.tecawards.org. No phone calls, please. ■

Industry Notes

Numerous announcements at **Telex** (Burnsville, MN): **Jun Taniguchi** was named president of EVI Audio in Japan; **Ernie Lansford** is the new VP of professional development and marketing communications, as well as being responsible for Telex Academy; **Bill Gelow**, director of engineering for speakers. **Robert Eaton**, chief engineer for microphones and microphone-related products; and **Randy Siefert**, trade show manager...**Solid State Logic** (Oxford, UK) hired two new product specialists: **John Pastore** will be based out of the New York office, and **Ryan Hewitt** will be based out of the L.A. office...**Digigram** (Montbonnot, France) announced the formation of Digigram Europe, which will provide sales and customer support in Europe, Africa and the Middle East. The company also announced the hiring of **Cynthia L. Hall** as product support manager.. After seven years as the head of the antitrust division of the U.S. Department of Justice, **Joel Klein** joins **Bertelsmann** (NYC) in the newly created position of U.S. liaison officer...**Alan T. Rosen** and **Cristina L. Miyar** have moved up in the ranks at design/acoustics firm **Charles M. Salter Associates** (San Francisco) as VP and principal consultant, respectively...**Schoeps** (Karlsruhe, Germany) appointed **Redding Audio Inc.** (Newtown, CT) as its exclusive importer and distributor for the U.S....Hong Kong-based **Advanced Communication Equipment Company Limited** is the new distributor for **Shure** (Evanston, IL) products in China and Hong Kong...**Lory Electronics** (Playa del Rey, CA) named **Network Pro Marketing** (Los Angeles) as its distributor for both domestic and foreign clients...**Bag End** (Barrington, IL) reached a distribution agreement with **Art of Sound** (Tonsberg, Norway) to handle Norwegian customers...**Furman Sound** (Petaluma, CA) appointed **International Sales** to represent its line in South America, Central America, Asia, the Middle East and Eastern Europe. In other company news, **Paul Krabbe** was promoted to shipping manager...**Korg** (Melville, NY) announced many new hires: **David Spann**, product specialist for guitar-related products; **Mike (Mac) McCormick**, district sales manager for Minnesota, North and South Dakotas, Nebraska, Iowa and western Wisconsin; **Jimmy Gumina**, retail marketing representative; and **Chris Rance**, credit manager...**DSP Media** (Studio City, CA) expanded **Daxco Ltd.**'s (Singapore) distributorship to Cambodia, India, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand and Vietnam...New marketing reps over at **Community Professional Loudspeakers** (Chester, PA): **Right Track Marketing** (Whitestone, NY) will direct sales throughout New York City and northern New Jersey; **Bay Roads Marketing Group** (Sharon, MA) handles Maine, New Hampshire, Vermont, Massachusetts, Connecticut, Rhode Island and portions of upstate New York; **McFadden Sales Inc.** (Columbus, OH) covers Indiana and Kentucky; **CM Sales Inc.** (Redford, MI) treks through Michigan; and **Secom** (Atlanta) manages Alabama, Georgia, Mississippi, North and South Carolinas and Tennessee...**Circuit Research Labs Inc.** (Tempe, AZ) promoted **Kevin Clayborn** to product manager for the company's Amigo Series, while **Bryant Jones** now serves as sales support manager. ■

ON THE MOVE

Who: Mark Terry
What: President of Harman Pro Group Worldwide
Main Responsibilities: "To help create a more collaborative environment between all of the Harman Pro companies, one where the individual 'centers of excellence' that have made each brand a leader can benefit the other companies within the group. It's kind of like taking a neighborhood of separate houses and pulling them into a more tightly knit community."
Previous Lives:
- President of Harman Pro Group North America, 1998 to present
- President of JBL Professional, 1995 to 1998
- Executive VP of sales and marketing at JBL International, 1989 to 1995
- Worldwide VP of marketing at New England Digital Corporation
- National Recording and Trident, early '80s

Unusual highlights: "At National Recording, it would have to be doing the music for the Miss America Pageant (a real hoot!) and the music for *Disco Ferrante & Teicher*, a disco Connie Francis album.

"At Trident, I sold and rebuilt—24 hours before the premiere—the console for *Cats!*. I also sold an AK Q-Lock to the Hit Factory for the album John Lennon was working on when he was assassinated.

"At New England Digital, I staged the Sting concert in 1987 at the old Palladium (those key chains are still floating around the industry), and I sold a Synclavier to the Sultan of Brunei. (For what, I don't know!)"

In the CD changer: "Matchbox 20, Bonnie Raitt, Everclear, Sting, The Wallflowers, Santana."

Book(s) on his bedside table: "*Raising Cain* (a book on fathers and sons, and I have one), *Who Moved My Cheese* (part of our lives is constantly changing), *Harry Potter* (I have to read to my kids, because I can't make up fairy tales like my mother did) and *Nothing Like It in the World* (the story of building the transcontinental railroad)."

Favorite films: "*The Green Mile* (because life is all too fleeting), *Cider House Rules* (because it's a film that shows that anyone and everyone can make a difference), *Good Will Hunting* (because there are many different kinds of intelligence) and *A River Runs Through It* (because I love to fly fish)."

When I'm not at work, I'm usually off doing..."My passion is SCUBA diving, especially in pristine, remote locations. I have been fortunate enough to dive [in] many of the great underwater sites in the world, such as off the coast of Egypt in the Red Sea, Micronesia, Thailand, Kenya, Honduras, Fiji and many others. Having made my livelihood from sound over the past 24 years, I enjoy nothing better than the quiet solitude of being 100 feet underwater on a night dive." ■

HOT LINKS

www.korg.com: Korg's new improved Website now offers online demos, product updates, dealer locator and online product registration.

www.pomonaelectronics.com: Pomona Electronics' re-engineered Website now offers an online version of its catalog that is also available as a PDF to download.

www.servodrive.com, www.soundphysics.com: Users can enter either of these URLs and access either company's combined Website.

www.akgusa.com: AKG's U.S. Website.

www.neumann.com: Neumann archives are now available, including product info and technical articles.

www.seersystems.com: Seer Systems has completed a new Website to support a new direct sales service for Internet-based purchases.

CORRECTIONS

In "Mix Masters" (January 2001), David Thoener's usual mic setup was incorrectly listed. The drum mic setup should have read: "Kick: D112 inside, 47 FET outside." Also, cymbals were 414s instead of 421s.

The sound for the AC/DC Stiff Upper Lip tour as reported in "All Access" (February 2001) was provided by dh Sound in Mount Prospect, Ill., and not DB Show Services of Des Plaines, Ill.

In "Multichannel Ride Design" (March) the actual composer, arranger and performer of the music for *Men in Black* was Andy Garfield and not Pete Lehman.

Mix regrets these errors. ■

Turner Studios

Atlanta

ON THE COVER

PHOTO: TOM HAMILTON/SPITFIRE STUDIOS

The core Turner sound team around a Studer D950 and Fairlight MFX3plus system.

by Dan Daley

Last May, Turner Studios consolidated all of its technical media operations into a new 127,000-square-foot building on 11 acres in midtown Atlanta. This was a pretty ambitious undertaking, considering what's involved: production, audio and video post-production, graphics, Internet services, CGI, cel animation and more; all centralized to serve the Turner Entertainment universe of broadcast entities, including TNT, Turner Classic Movies, Turner South, WTBS and the Cartoon Network.

But wait—there's more! Turner itself became part of the Time Warner media empire several years ago, and as of January 12, 2001—a date emblazoned on T-shirts distributed to the Turner staff—Time Warner merged with online giant AOL. Consequently, the new Turner Studios, which started out as a critical cog in a very large media machine, is now at the center of an even larger media cosmos. The machinations of the executive boardroom will resonate for years to come, right down to the level of audio post-production.

Turner Studios' audio post capabilities in the new facility are substantial: Two acoustically identical audio editing suites are equipped with Fairlight FAME digital workstation/mixers and are augmented by two more suites fitted with Fairlight MFX3plus workstations and Studer D950 digital consoles, as well as a music recording studio and an on-air audio suite, each of which also has a D950 digital desk. These rooms, in turn, are buttressed with an array of other audio media facilities, such as voice-over suites, transfer studios and a MIDI music scoring suite. Much of the facility, both audio and video, is already networked via a central server, enabling media transfers with no moving parts; the goal is to have every aspect of post-production, right down to libraries, linked and routed through all-digital pipelines. All of these studios and suites came online over the course of the last year-and-a-half, as part of the rolling opening of the media operations center building.

Overseeing the audio post operations is Jeff Brugger, who had been on the job for all of three weeks when we spoke. After 13 years as a freelance post engineer and consultant, helping broadcasters such as The Discovery Channel set up new audio post operations here and abroad, Brugger didn't seem overwhelmed. But it helps to have a plan, and Turner does.

"The idea was to place all of the resources to support our clients in one place, to centralize the services, and then further centralize them within the operations by networking everything," Brugger explains. "The other part of the plan was to make the operation so good that none of our clients would want to go anywhere else." Turner networks do have that option, though even Brugger acknowledges that, "If every [Turner] network did decide to use us, we couldn't handle it. No one could. But we want to be good enough to be everyone's first choice."

Technology choices, such as the Fairlight workstations, the Studer consoles and the nearly ubiquitous Genelec monitoring, were chosen for a combination of reasons, including consistency of platforms throughout the facility.

As for the studios' future plans, Brugger says, "Our course is determined by where the overall industry moves and when it moves. For instance, we can do 5.1 mixing, but none of our network clients have asked for it yet. We'll move in that direction as the entire industry moves toward digital broadcasting. And now, with the AOL merger and the coming of Webcasting as a counterpart to broadcasting, other large forces will determine which technology is used, how it's used and when it's used."

Turner has implemented another plan that will help Brugger and his counterparts in other media divisions address the future. In addition to making a deliberate effort to recruit technical employees from a variety of disciplines, including music and Internet realms, Turner has a program in which some employees can elect to pursue the equivalent of an in-house technical sabbatical, sampling work in any other media technology department for a month at a time. It's a technical liberal arts curriculum that Brugger says will result in the kind of flexible, well-rounded employees that any major media company needs.

"We're going to need people who can do music one day and a voice-over the next and MP3 the next," says Brugger. "Everyone is going to have to be a utility player, but a more deeply talented utility player than ever before." ■

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ASK GRUMP

ONLINE ADVICE FROM THE DEAN OF CURMUDGEONS, AS TOLD TO PAUL D. LEHRMAN

ILLUSTRATION: WIL TERRY

Every month, we at *Mix* and Mix Online get hundreds of e-mails and forum questions about how to do stuff: mike a drum kit, get into a school, get *out* of a school, get a record contract, get *out* of a record contract, achieve the sound that some well-known group has on their latest album or handle an annoying client. Usually we try diligently to answer these questions ourselves or refer the questioner to someone more qualified. This month, we are very pleased that my old buddy Phineas T. Grumpmeier, Lit.D., Pd.Q, L.S./MfT, now on the faculty of the Department of Misapplied Audio at the Southeast Hackensack Institute of Technology, has agreed to lend us his impressive expertise and respond to some of our typical questions. Over to you, Professor Grump...

What's the best computer for doing audio editing?

We all know the problems that both Macintosh and Windows machines have, and although things have gotten a bit more stable recently, I still don't trust either of them. I also don't think much of the fact that, because there's no way to move session files between them or even between most applications on the *same* platform, then whatever you get now you're going to be stuck with forever—unless, of course, whenever there's any kind of update, you're happy to convert everything you've ever done throughout your entire career into a new format.

That's why I use a 1982 BBC Acorn for all my audio editing. I get 38 seconds of 8-bit, 6kHz audio on each 5.5-inch floppy disk—but you know, what goes around, comes around. And, as it happens, it's just perfect for Web work. The disks are dirt cheap, if you can find them, which I sometimes can in

BY PAUL D. LEHRMAN

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flea markets and on eBay, although dumpsters behind office buildings are a more reliable source. But the best part is that I don't have to worry about those silly hardware or software updates, because I know darn well there aren't going to be any.

I'm building a studio in my parents' garage. I have a lot of experience doing live sound for solo acts at open-mic Mondays at a local club and hanging around with the DJs the rest of the week, and I work days at a video store where I get to watch a lot of TV. So I'm positive I'm ready to move up to the next step and record major label acts and score Hollywood feature films.

I know that the gear isn't as important as how well you use it, and I think mine is good enough: I've got an 8-track cassette recorder in pretty good shape, a couple of microphones with the model and serial numbers scratched off (they're black and have a round ball at the end, if that helps) and some kind of mixer I found at a yard sale, which still has most of the knobs.

I also have a pile of old 2x4s and some slightly used sheetrock behind the house and a couple thousand empty egg cartons (my folks own a chicken farm), which I know will come in handy.

When Nolo blew his cookies into it, we had a clear signal right to tape. It was a wonderful moment, one that would be hard to reproduce, I'm sure.

What else do I need to buy, and where can I go on the Web to get free advice about design, acoustics, wiring, equipment, and recording and mixing techniques? I need to keep my total budget under $500.

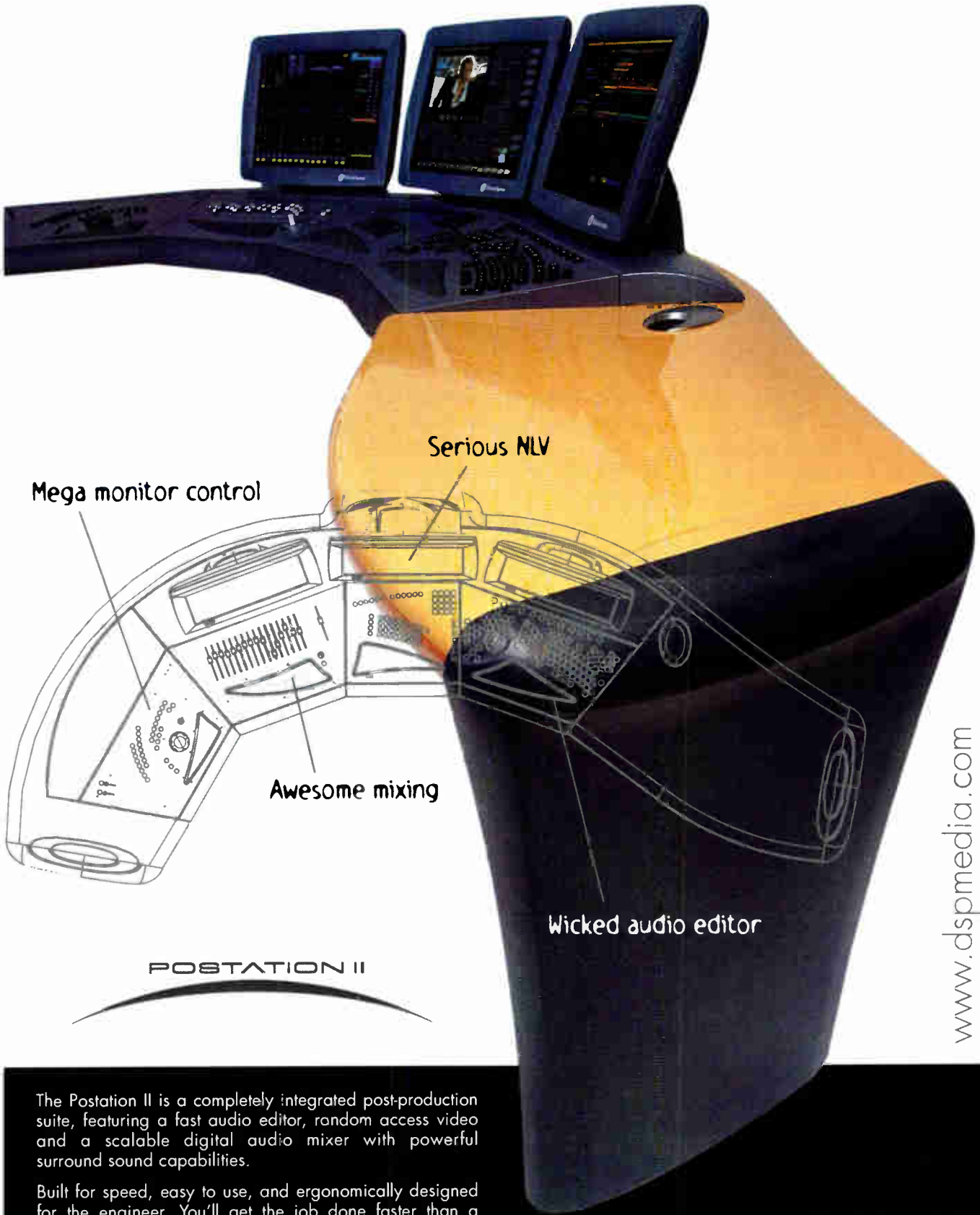
It sounds to me like you've got all that you need to go head-to-head with the big studios. Their stuff may be flashier and more expensive, but that doesn't mean it works any better—if it did, why would they need to keep full-time technical staff around?

As for information about how to build your studio and how to produce records and film scores, there are dozens of acoustical consultants, designers, composers, producers, and recording and mixing engineers who have posted everything they know on the Web, and it's yours for the taking. After all, they've already made their money, so now they're happy to give their knowledge away to anyone who wants it.

Just go to your favorite search engine, type in "How to make a hit record" and you'll be directed to thousands of great sites, some of which will also feature surefire ways of making $10,000 a week in only five minutes a day, while others will have grainy pictures of men, women and animals in truly remarkable poses. Best of luck to you. Just make sure those egg cartons are clean.

—CONTINUED ON PAGE 251

It's "Australian" for faster post production.



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dsp MEDIA

IT'S ALL OVER

THE DAY THE MUSIC DIED

ILLUSTRATION: TIM HUSSEY

For most of us, the Internet is certainly a part of everyday life, and MP3, WMA and other compressed music files are everywhere now. *Everywhere.*

With the help of the Great WWW, society has taken a truly sick turn and produced an entire generation that believes they are literally *entitled* to any and all existing intellectual property. They view their larceny as simply reaching out to take what is already theirs. In fact, they become quite agitated if it requires more than just the slightest effort to download stolen songs or cracked software. Just watch one of them when their Internet connection slows down a little while they're stealing.

A few short years ago, this would have been viewed as decidedly sociopathic behavior and treated accordingly, but no longer. The problem is far beyond what existing laws can handle. It is even beyond the *concept* of conventional laws.

This brings up several questions—and then several more. For us in the music industry, how music will be marketed in the immediate future seems to be a good question, so I'll dive right in.

Most of the existing record companies will simply die. Confused and stunned by theft.com, they won't even understand what really happened to them. They will blame piracy, but they will be dumbfounded. They will never really grasp *why* it happened. They just won't understand the shift in values that took them out.

BY STEPHEN ST.CROIX

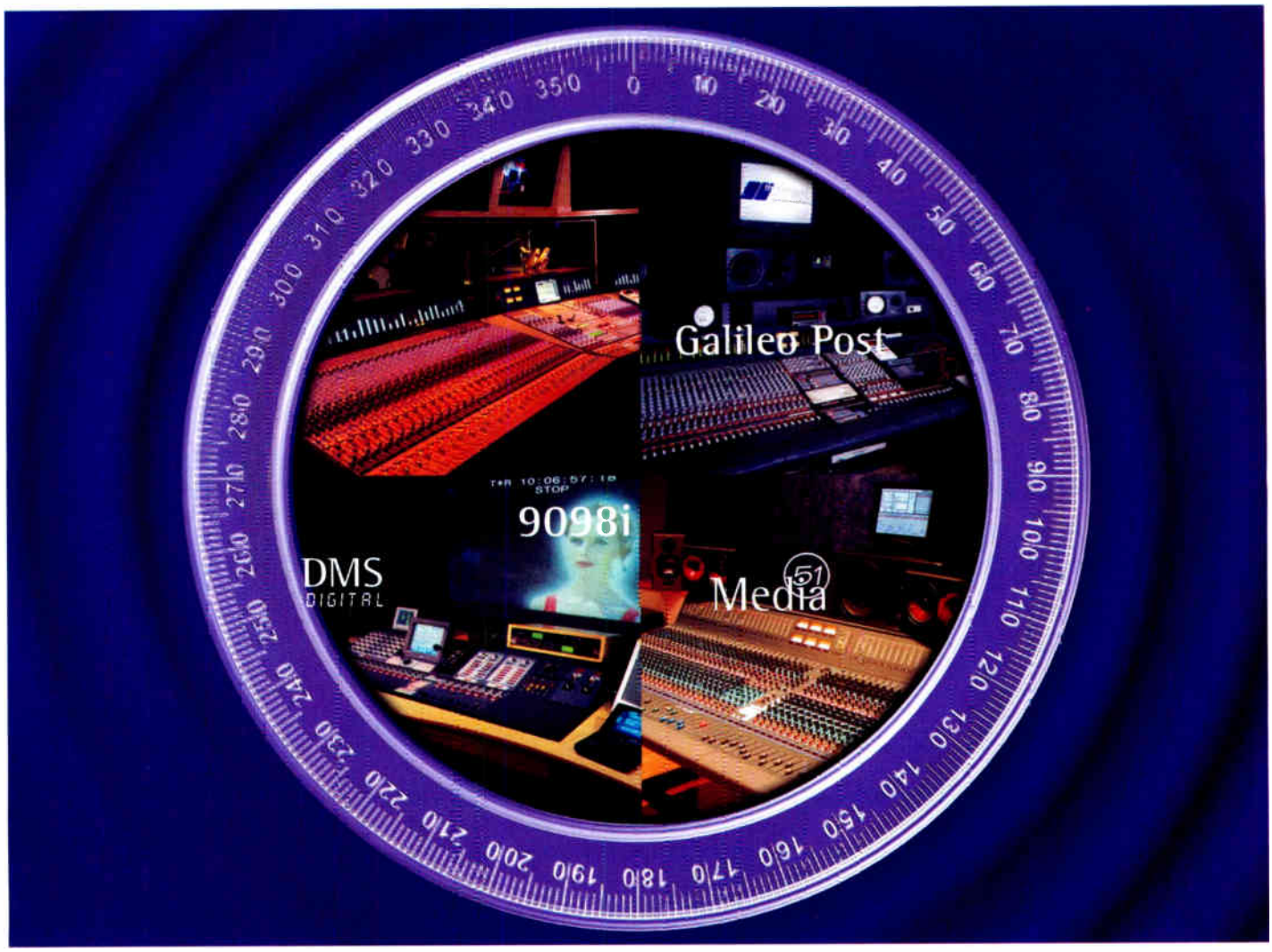
Sure, the music industry's most forward-thinking companies will try to make the transition to Internet-based audio. For them, the specter of e-commerce will appear as both the grim reaper and the last best hope.

But, because the world is now way too small (it's truly that damned global village), this will not work. The incredibly high cost of security, the overhead of copy protection, prosecution and the like will make these ventures ultimately unprofitable, and so they will leave.

IDEALS. REMEMBER THOSE?

A question was posed to me today: "In an ideal situation, with protected copyrighted music, how well do you think music e-commerce would work?" I answered that the

0-360 in 5.1



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question is moot, as real protection can never again exist. To even entertain that dream is a waste of time.

When the big boys leave, the anarchists and other counterculture factions will pick over the bones, while the naive and the socialists will try for their 15 minutes. Then music as we know it will stop.

I mean, *think* about it. Why would *anybody* create and record new music if the only possible outcome is to have it stolen and distributed by pirates? Eventually, all we will have is whatever has been recorded to date and nothing new. Music will disappear from our daily lives with certain meager exceptions. These are:

Group 1: New music will appear on the Net from the following people:

A) Those who need their ego fed—for a variety of reasons. These are the same people who build personal Websites, like "All About James."

B) A few who are truly altruistic; they just want to *give* the world new material.

C) Those remaining musicians who have made The Conversion.

Group 2: Those remaining musicians who have made The Conversion. These will be the New Troubadours, the new minstrels. Live concerts will return with a vengeance, as they will be the only place that a person can go to hear new music. Audience members will be scanned at the gate (and during the performance) for recording technologies. Take my word on this: ultrahigh-tech scanning technologies that can identify people who are covertly operating recording devices in massive, loud, dark audience conditions are currently in development. I guarantee it.

These live performers will post certain songs and excerpts on the Net as advertising, as loss leaders. This is why they made it into position C above.

That's it. No other new music. But, luckily for all of us, this won't really be a problem.

YOU THINK YOU GOT TROUBLES NOW...

You see, we are all heading for a very disturbing new age, an age that we as a society are not at all ready to enter—an era that we simply won't be able to handle.

The fast-approaching problem with music distribution is just one aspect of what is really coming. I chose it as an example for obvious reasons: This is an audio magazine. But the problem applies to *all* intellectual properties, and *that*, in turn, comes back to undermine the foundation of capitalistic life as we know it.

Let's back away a bit so that we may more clearly see the big picture. We have based all business, and indeed our very economies, on tangible, *physical* properties. Hell, until recently every U.S. dollar was backed by a tiny chunk of real gold sitting in a Federal Reserve out in the middle of nowhere.

I mean, think about it. Why would anybody create and record new music if the only possible outcome is to have it stolen and distributed by pirates?

Physical properties can be protected. Gold cannot be copied. Water cannot be copied. Even salt, one of the planet's first currencies, had value because everybody needed it, it wasn't laying around everywhere for the taking, and it *couldn't be copied*. Not that the concept even existed back then.

Today, things are different, yet the same—a very dangerous condition. Today, as it has always been, physical properties have value. But today, and more each year, many of these items were born of technology. Snake antivenom is a tangible yellow fluid, can't be copied, and happens to have been designed and created by scientists using the most modern tools on Earth. Genesplice therapy, anti-viral drugs, low-pollution engines, personal computers, Palms, airplanes, electric motors—all tangible, but all products of multiple technologies.

And why do we care? David can't post them on the Internet to be downloaded at will. How can they be pirated?

Well, here's why we care. Internet piracy undermines the very values and associated stability of our economies. As a larger and larger proportion of our tangible assets come from technology, the stability of our economy becomes more precarious, without our even knowing it. It's like having a house on the beach, where storms wash out sand underneath it for years, but you can't tell, because the surrounding plants and fences hide it all. Maybe a crack appears in the foundation, raising questions as to why, but by then it is far too late. The damage is done.

And here it is. All these "safe" tangible pieces of technology were actually created in and spawned from the intangible world of R&D, the world of *ideas*.

If research scientists cannot be assured of protection for their ideas, their intellectual property, then they will eventually stop developing ideas altogether. Even if these scientists want to continue their work purely for the benefit of mankind, then they won't be able to.

Technical products, from machines to medicine, are incredibly profitable. If there is no profit potential, then the grant or seed money for the research won't appear. If the money isn't there, then some million-dollar tech tool needed for the research can't be purchased, and the facilities for that research can't be maintained. If there are no tools or labs, then the research guys will not be able to do any more work.

If intellectual properties cannot or will not be protected, then our modern technology-based society and its intellectually based physical economy will collapse. Why would scientists embark on a 10-year path to discover a cure for something if they know there is no hope of even getting the money to make it through the first year because of rampant intellectual property theft?

Eventually, I think in about 20 years, a combination of the Internet and the sick, misguided anarchists who live there will bring the world to its knees. No functional intellectual property protection eventually means no intellectual property. And that means no further development, and so no new tangible or physical properties. And *that*, in turn, eventually means no new scientists. And as the old ones die off, the ability to create dies with them. And so does the ability to even repair existing technologies! The end of the world. Literally. Without a shot.

Sure, after all this happens, society

—CONTINUED ON PAGE 183

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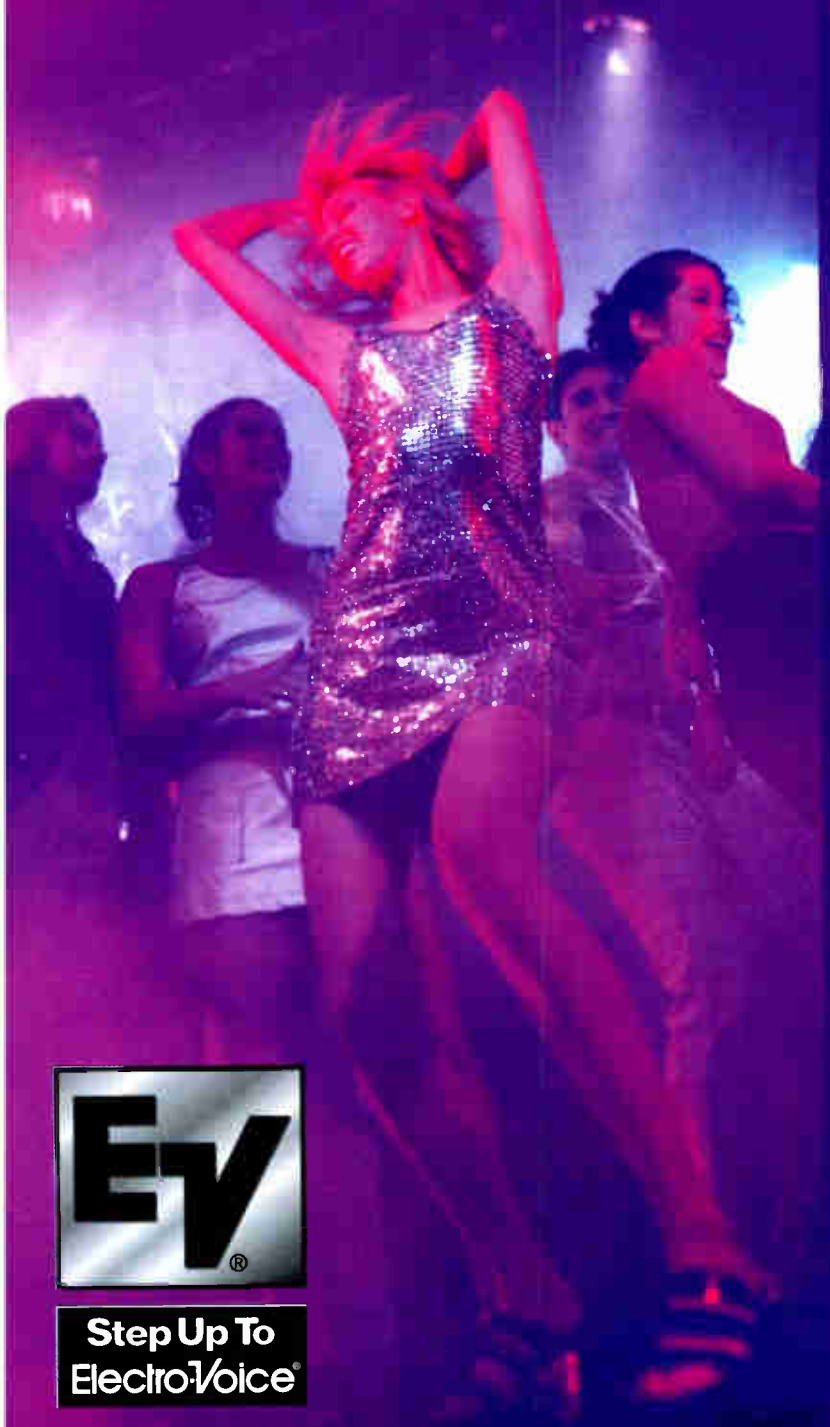

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With all due respect, recording onto linear media (a.k.a. tape) has some pretty severe limitations: Access time to cue points is slow. Punch-ins erase stuff you previously recorded. And the tracks just sit there side-by-side on the tape with no chance to easily slip, slide, cut or paste them in new ways.

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As easy to use as an analog recorder.

All basic functions are right there on the HDR24/96 front panel including transport buttons and individual Record Enable buttons for each track. Just hit Record and Play

* based on current U.S. list and pro audio dealer "street" prices at the time of ad production and on the assumption you will buy a CRT-type SVGA monitor and not an ultra-pricey flat panel model like our art director insisted on using for this ad.

** based on average of length of current pop songs using 24 tracks @48Hz/24-bits and a liberal number of extra regions and virtual takes. Does not apply to extended trance remixes.

ong thin strips of rusty plastic.

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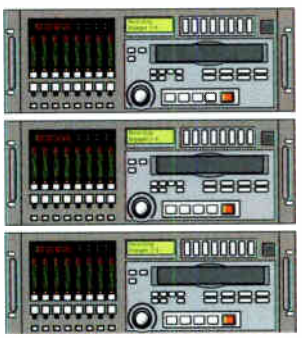
Each track also supports eight "virtual tracks," so you can do multiple takes and comp them together easily.



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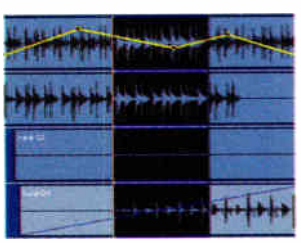

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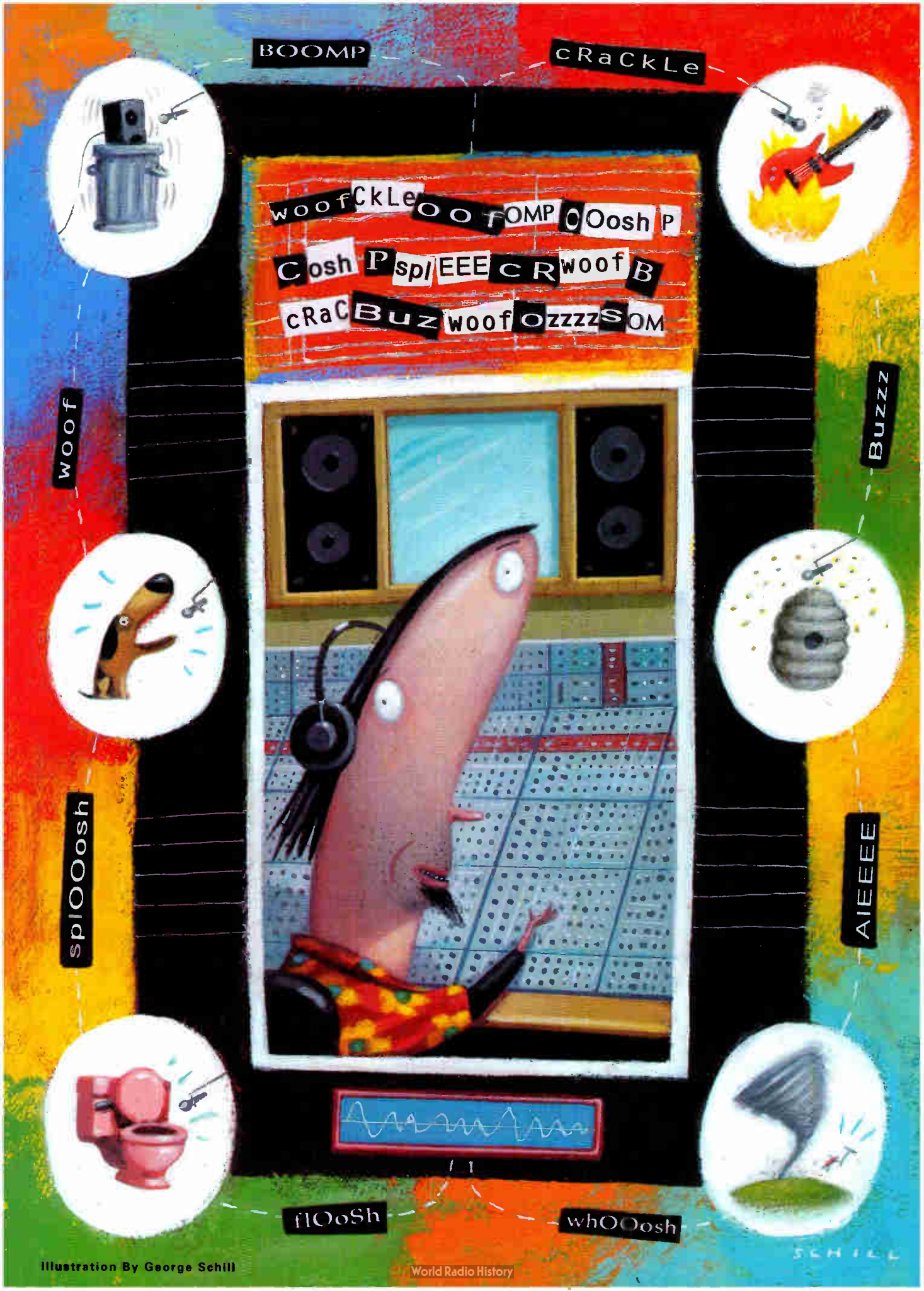

Illustration By George Schill

RaDicaL ReCorDing

Five engineers offer tips on adding wild, wonderful and downright weird sounds to your recordings

As it irrevocably mutates, the audio recording landscape is fragmenting into different camps and styles. Retro lovers, hell-bent futurists and all sorts of hybrids have staked their niches, hoping to be on the crest of the next wave. And, while there's no doubt that in today's generically marketed world "same-old, same-old" often rules, the arena remains wide open for those who dare to experiment. No matter what the format or instrumentation, and no matter what the market resistance, musical creativity and sonic inspiration always survive and eventually surface. Here, *Mix* gleans some thoughts from a few of the audio adventurers making waves on the current musical scene.

BY MAUREEN DRONEY

TCHAD BLAKE'S PIPELINE TO STRANGE SOUND

Contrarian Tchad Blake has long been recognized as a radical recordist. His extensive discography ranges from Crowded House, Los Lobos, Sheryl Crow, The Bangles and T-Bone Burnett to the soundtracks for *There's Something About Mary*, *Dead Man Walking* and *The Truth About Cats and Dogs*. We found him ensconced at Sunset Sound Factory's Studio B, where he took a break from mixing the debut release for Virgin Records' Miranda Lee Richards to talk about some of his ventures into alternative recording.

"I always connected to music more aurally than lyrically," he recalls. "I gravitated to records for the sounds. And, when I was growing up, I was really influenced by some of the English progressive stuff, like King Crimson, Hatfield & The North, Van Der Graaf Generator...by today's standards, they wouldn't be called well-recorded. They always had a weird, quirky sound—maybe a boxy drum sound that had one thing distorted on it, or a section where the hi-hat was so ridiculously loud that it was exciting. I also liked using atmosphere for ambience—like Pink Floyd used outside sounds from traffic, birds, whatever. I have recordings from back when I was an assistant where I'd put all the tracks through a speaker into a room and re-record them with stereo mics. Back then, of course, those recordings never got me any work!"

Blake's work with his frequent recording partner, musician/producer Mitchell Froom, on Los Lobos' dense and impressionist *Kiko* became the first record where Blake was able to stretch out with recording methods. "We decided to go for the sounds that we wanted, without worrying about trying to sound like anybody else," he recalls. "And one of the things that we did was to make a contrast between really lo-fi and hi-fi."

Some of the techniques used by Blake on *Kiko*, as well as on many later projects, involved miking reflected sounds, then enhancing the signal through the use of pipes, or, as he calls them, "mechanical filters." "I often used sound that was reflected off of boards, metal plates, glass," he explains. "For a long time, I had a huge metal plate that we called the 'Yucca Bone' [named for Hollywood's Yucca Street, where it was found] that we'd set up in front of the drums. It was about ¼-inch thick, with a curve to it, and it acted almost like a parabolic reflector. Along with that, I had a series of pipes that were loosely tuned to different notes. I'd put them up in front of the mics and mix that in."

Blake credits his piping inspirations to engineer/author Barry "Sherman" Keene. "He was a tech at Wally Heider's who also taught a class where he explained

HOMAGE TO BRIAN ENO (COMPLIMENTS OF KEN KESSIE)

Need more RadRec? Here are four tricks donated by engineer/producer Ken Kessie (En Vogue, Tony! Toni! Tone'!, Until December) that are bound to liven up a boring evening in the studio.

1. drone generator: Feed a synthesizer into a digital delay set for a very long delay time (four to eight seconds). Run the output of the delay through a compressor, then back to the input of the delay. (Note: This is a feedback loop. Keep your monitors on low to avoid speaker, ear or equipment damage until the system is stabilized.) Start feeding some sustained sounds into the delay, and slowly raise the level of the feedback loop until the system self-oscillates. Add compression until the system regenerates but doesn't increase in volume. Now the fun begins: Add new patches, octaves, volume fade-ins, until you have a thick soup of new and very regenerated sounds. Record everything on DAT, and you'll be sure to have some gold in there somewhere.


Ken Kessie

2. lead guitar spice: I discovered this trick while working on an industrial rock number that was stuck with a lackluster guitar solo. It saved that song and could save yours, too. I bused the guitar into two SPX-90s panned left and right. Each was set for 1/8th-note delay. I pitch-shifted one side up a semitone, the other side down, with lots of feedback. As one side kept feeding up higher and the other lower, this created a stair-step effect. Used like a reverb wash, it retained the clarity of the original sound but surrounded it in a mysterious spiral.

3. light stuff: Place a guitar on its back and get it really loud with a fuzz or distortion pedal (or an amp right near the feedback point). Take a steel blues guitar slide and rub it back and forth on a single string near the bridge using a very light touch. The sounds will amaze you. Be careful! A loud attack on the string might rip your head off.

4. "flatline": I once needed a flatline sound for a song about someone dying. I wanted three elements—a machine tone, high angelic voices and a granular cloud. I took a sustained note, fed it through a Harmonizer pitched up one octave (all effect, no original signal), then fed it into itself so it kept looping higher and higher. I sent this into a long digital reverb with a very diffuse setting. To make the effect wider and increase the weirdness factor, I took one finished side of the stereo patch, pitched it down an octave and then back up the octave again. ■

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that all microphone diaphragms were made in omni, and that it was the internal plumbing of a mic that made it directional. I guess I took him literally and started using plumbing to make my own patterns for microphones—and also my own filters. Instead of using electrical filtering to take off the top and low end, I'd record something through a pipe. The pipe takes off top and bottom but also creates a resonance within itself so that you get a bump at a certain frequency—basically a mechanical filter. I also used digiridoos. I'd put them up against the glass in a studio; the reflections would come off the glass through the digiridoo into the microphone, which you could move in and out for tuning."

The advent of the SansAmp, also much used on *Kiko*, helped cut down on the amount of plumbing supplies and sheet metal that Blake had to carry to sessions.

"It was a big thing for me," he admits. "I used it mainly on drums and bass. I could put the kick drum through the SansAmp, hit the Phase button and it would drop the kick drum something like an octave. It would also put this really weird top on it, this little bit of distortion. So that became my new filter."

Other equipment Blake has used as filters includes resonators from old radios ("I put microphones on the edges and use them in front of the drums."), reduced-frequency—okay, bad—microphones, line outs from voice recorder tape decks and esoteric compressors.

"I have a collection of really funky compressors that do nice things when you filter and EQ them. I have a couple that were used for the P.A. system in a submarine, and I have a Shure Level-Loc. It's a mic-level compressor made for speech; it craps out with drums at any level. Take a microphone, stick it in the compressor, put it in the drum room and the thing will distort—there's nothing you can do about it. But it's really cool to just mix in small amounts.

"A lot of people think I'm anti-reverb," he notes. "But that's not true. I like to get the sound of it with compression or distortion or something else. Reverb, itself, to my ears, often takes up too much space, so I only use it when I can't create that effect with anything else."

Although lately Blake's pipe collection remains mostly in storage, he always carries at least one short travel-size one with him, just in case. Then there are techniques such as putting baby guitar amps into trash cans with the lid on, and he hasn't stopped building: A recent invention started life as a large, square, olive oil can and has morphed into a kind of spring reverb. "I put a speaker in it," he explains. "Then coming off the speaker are a bunch of springs that attach to the sides of the can. When you put sound into the can, it makes both the springs and the can rattle. Instead of having a surface-mount transducer, the speaker actually makes the whole can shake.

Often there will be a happy accident, and I'll get somewhere that I hadn't expected. I think, in the studio, your attitude is more important than the equipment you use.

—Tchad Blake

"When I try these things, I try to keep it spontaneous," he concludes, "and not to think about it too much. Often there will be a happy accident, and I'll get somewhere that I hadn't expected. I think, in the studio, your attitude is more important than the equipment you use."

THE SONIC MAYHEM OF CHRIS VRENNA

An avowed sonic envelope pusher, Chris Vrenna honed his chops creating madness and mayhem as a drummer and programmer with Trent Reznor and Nine Inch Nails. From those NIN days at Nothing Studios in New Orleans, where he became known as a master of distortion, through his work with beats, loops and samples for Rob Zombie, Marilyn Manson and Smashing Pumpkins, and his remixes and productions for bands like Cold and Methods of Mayhem, one thing remains obvious: This guy just plain digs creating sounds. These days, Vrenna works from L.A. where he balances his penchant for the weird with his skills as a songwriter and producer.

"So many people are trying to be weird these days that I've changed my direction a bit," he says with a laugh. "My new twist is just to think of cheap, cool ways to be really good."

Although still an electronic music enthusiast, Vrenna now rarely uses stock samples; instead, he creates his own with the help of the artists he works with. "Using all the toys but making the person the signal generator, as opposed to a sample loop or a synthesizer, that's probably my latest one-sentence summary," he remarks. "I try to use each band in their own aesthetic as much as possible, making them the source material for all the bizarreness that we come up with together. That might be building an ambient bed from picking strings at the neck of a guitar, then washing it out through reverb and delay, because they hate synthesizers, or having their drummer strike his snare in a garage, sampling that and programming it.

"On one project, instead of using a drum kit, we had the drummer play his fiber road cases, empty and upside down on the floor. Because of their different depths, they're pitched: A floor tom case makes a great kick drum and a baby tom [case] makes a cool snare. It's a nice 'thucky' sound. We put foam rubber on the cymbals so they matched. And then, of course, I ran the whole kit through whatever pedal I was into at the moment. I went through a love affair with all the Electro-Harmonix reissues—the Micro Synth, the Bass Micro Synth and the Frequency Analyzer. For about six months, everything I did was through those three pedals.

"The cool thing about pedals is that they're cheap, relatively speaking, com-

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pared to a plug-in. I love Amp Farm, SansAmp, moogerfoogers and all the Bomb Factory stuff. But not only are plug-ins expensive, you need to own Pro Tools to use them. So when people ask, my advice is: 'Go buy four distortion pedals'—a Boss, a Big Muff; just pick four. Sixty bucks a pop, none of them will sound the same, and chaining them together will be infinitely crazy."

Vrenna feeds pedals direct from instrument outs or from the analog outputs of his Pro Tools. "I'll patch straight out from Tools with a guitar cable. I know—my impedences are wrong, nobody yell at me. The only thing you have to watch out for is that sometimes it's not really in time anymore, and you'll have to chop it and slip it up a little."

Having run through most of the world's stomp boxes, Vrenna's new obsession is delay. "I've been into making really simplistic beats and melodies that are filled out by delay. You can play a simple eighth note thing and the delay makes a staggered 16th note dub feel that, because it carries it through, is writing the melody more than what you played."

A favorite among the delays he's amassed is TC Electronic's new D-Two. "It's got 10 tap rhythms," he explains, "so you can create really complex rhythms. It's got filtering and reverse, which I used a lot on a soundtrack I was doing for American McGee's video game *Alice*. Something like glockenspiel through reverse delay sounds really neat. I'm a big bang-for-the-buck guy, and the D-Two fits that bill."

Having progressed from drummer to programmer to songwriter and producer, Vrenna now finds himself concerned with the big picture and preserving the integrity of the sounds he so painstakingly creates. "I'm kind of going the other way now," he says ruefully. "I've become aware that, while it's fun to make things sound really gross, you've got to record them really well to appreciate the grossness. A lot of times I've been disappointed in what I recorded. Between the distortion and the filter sweeping, a sound would be shaking the windows, but something always got lost in the translation."

Ironically, Vrenna finds that getting weird sounds on tape requires many of the same classic techniques that pristine pop does. "Level is really important, of course," he notes, "as is having the best A/D and being able to slam that A/D with really good mic pre's and DI boxes."

For DI, his current preference is an Avalon U5. "They have the most punchy, full bottom end I've ever heard," he asserts. "I also like API and Neve preamps, of course. There really is a huge difference in using them rather than just patching straight into the line-ins on an 02R."

There's no fear that Vrenna will turn into a classicist as far as recording goes,

I've become aware that, while it's fun to make things sound really gross, you've got to record them really well to appreciate the grossness.
—Chris Vrenna

however. Those expensive preamps and DIs are very likely being fed with a very cheap mic. "I'm using a lot of horrible mics lately," he states gleefully. "Lavaliers, little ones from Radio Shack—I'll try them on everything from vocals to the little mini guitar cabinets that I like. For *Alice*, I was trying to do a twisted, but organic soundtrack, so I got a bunch of RCA desk mics from the '40s and put them through some lo-fi preamps. Rather than finding boxes to run

through, I just bought the cheapest gear built in the era I was trying to emulate."

SMART TIPS FROM BILLY BUSH

Up in Madison, Wis., at Garbage's Smart Studios, engineer Billy Bush has been working on that hard-to-define band's third CD. It's common knowledge that Garbage founder/producer Butch Vig and his associates are always questing for the unusual; recently, they've added some new pieces of esoterica to their arsenal. "The University of Wisconsin is here in Madison," says Bush, "and every couple of weeks, they have a surplus sale where they sell weird stuff for next to nothing. The guys at the studio find all kinds of wacky things that they rebuild, and one of the cool things we've gotten lately is a wire recorder. We've got two of them here now; we started with four, but our Russian tech, Lonya, had to scavenge two of them to make two work. They were designed to be dictation machines, with a little handheld, intercom-looking mic, a weird crystal that's hard-wired to the recorder. You push the button and it does its thing, using spools of what looks like 12-gauge wire to record. Of course, the first thing we did was say, 'Hey Shirley [Manson, Garbage's lead singer], try singing through this!' She looked at it and said, 'What the hell!' We taped the mic on and gave it to her, and, of course, it sounded horrible—like the narrowest bandwidth filter you've ever heard. Really cool, actually, but it didn't handle volume very well. So next it was, 'What if we just lob it right in front of the drum kit?' And that was just the spittenist, most unbelievably blown-up sounding thing you've ever heard."

That wire recorder is now part of the regular drum miking setup at Smart, an array that generally includes approximately 16 mics placed both close and far, including Royer ribbons and an old Altec run through a Shure Level-Loc compressor (great minds think alike, see Tchad Blake). "The Altec through a Level-Loc is an instant drum loop kind of sound," laughs Bush. "A Level-Loc is definitely going to be the new $500 item that you find on eBay—the funkiest-sounding piece of gear you've ever owned. It's only good for one thing—absolutely destroying drums."

A lengthy search by the Smart crew for a hard-to-find Roger Mayer RM58 compressor was recently rewarded. "Butch had used it on, I think, a Freedy Johnston record, then he spent about three years after that trying to track one down," Bush explains. "Roger Mayer was the guy who made crazy footpedals and fuzzboxes back in the '60s. He also made this RM58 stereo compressor, which is great on drums; it shreds everything that comes through it. It does something inexplicable that has to be heard to be understood. Some sounds slide through and some are just slashed beyond repair. It's also completely random; you can run something through it twice, and it will sound different both times."

Billy Bush

DAVE SARDY:
NO DRUMMER IS SAFE!

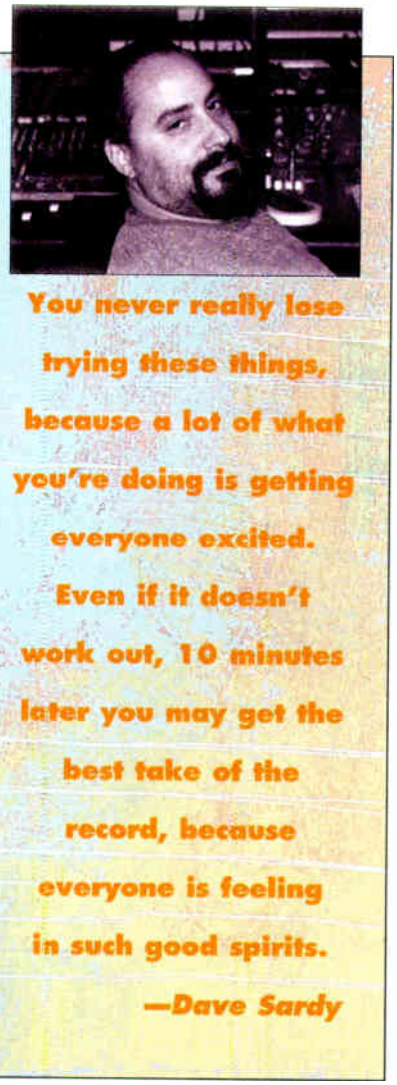
Just off of a busy 2000 that included production and mixing for Marilyn Manson's *Holy Wood* and critical faves Dandy Warhols' *Thirteen Tales From Urban Bohemia*, New York-based Dave Sardy was heading to London to record Bush when we caught up with him. A multi-instrumentalist, as well as a producer and engineer, Sardy is known for his open-minded approach to recording; his take-no-prisoners attitude has rewarded him with album credits such as "noises by Dave Sardy."

"A lot of what I used to have to wrench out of a console or an EQ was because of bad mic pre's and bad microphones," he admits, "but I didn't know that when I was starting out, so we'd do a lot of funny things."

A number of those early experiments had to do with drum sounds. "I was recording at Dessau Studio in New York," he recalls. "We wanted a German industrial, Einstürzende Neubauten kind of sound, and went rooting around in the basement looking for things that might sound cool. We found an entire high-rise building's worth of framed windows down there and lugged about 40 of them back upstairs, where we built a large glass box and put the drummer inside. It sounded amazing. Not inside of it, but outside."

Back in those days, it took a courageous drummer to work with Sardy, who was often intent on using the environment to create the drum sound. "Some people just record dry and then mess around with it afterward," he remarks. "I tend to record stuff to tape the way I want it to sound. When I first started, I never had any money to collect microphones or effects, so everything had to be organic. I've put drummers in closets and in vocal iso booths that were so small you had to use a floor tom for the kick drum and just one overhead mic. For one project, we got a really cool sound when we taped a PZM mic to the drummer's back and had him pound his chest in time with the kick drum. For a while I was living in a 10,000-square-foot warehouse with almost nothing in it; we recorded a lot of cool drums in there, just experimenting with close and far mics. And the first studio I ever worked at had a four-story steep marble stairway that was great to set the drummer up on using a mic at either end for the stereo."

Not all endeavors turn out well, of course: For example, there was that disappointing venture into an empty swimming pool. "That one didn't sound as good as I thought it would," Sardy recalls sadly. "But that happens sometimes with insane setups—they look a lot better than they sound. All that work to set a guy up in the pool, and it just sounded like a drum kit with a bad MidiVerb on it. Concrete, I learned, is not the nicest sound in the world."



Still, those experiments are rarely regretted. "You never really lose trying these things," he notes, "because a lot of what you're doing is getting everyone excited. Even if it doesn't work out, 10 minutes later you may get the best take of the record, because everyone is feeling in such good spirits."

A mansion in the hills, a large budget and plenty of time: For a producer like Sardy, Marilyn Manson's *Holy Wood* project was a dream—or a nightmare—come true. What *was* the real deal with those U67s left out in the rain? "They were the mics that were right by the door when it started pouring, so we used them," he says. "We were already recording [guitarist] John5 playing an acoustic outside so we'd have the traffic in the background. All of a sudden, the sky opened up with a thunderstorm, which is so rare in L.A. We were in a canyon, so it was reverberating all over the place—an amazing moment. You can hear it in the song 'Valentine's Day.'" (While you're listening, see if you can hear the moment when Sardy and his crew relented and threw plastic bags over the 67s in the hopes of salvaging them.)

Microphones were sacrificed to both fire and rain on "Valentine's Day," as Manson screamed into a burning microphone at the "Fall of Adam" section. "It sounds like he's singing into a walkie-talkie, but it's actually a tiny old desk microphone," Sardy notes. "We doused it with lighter fluid, put it in front of him and set it on fire. The last moment of that microphone's life was Marilyn screaming his head off a couple of inches from it."

"Disposable" microphones are a regular part of Sardy's arsenal. "I'm the guy who at the swap meets sees someone with a pile of old microphones and says, 'How much for the whole pile?' A really easy way to vibe things up on a session is to use messed up old microphones in tandem with really good ones. If you put a C12 and a screwed up microphone right next to each other, a singer can hear the difference when he or she moves their head. They can get into playing around with those different sounds themselves, as opposed to you doing it all.

"What it comes down to," he concludes, "is that you're trying to create an environment where the band feels like they're in their bedroom. At a live show, you have the energy and excitement of the crowd, but the studio is an abstract environment and not always the most conducive to creativity. It can feel like you're performing under a microscope. So what you want to do is make people feel comfortable, get everybody's energy up and have fun." ■

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

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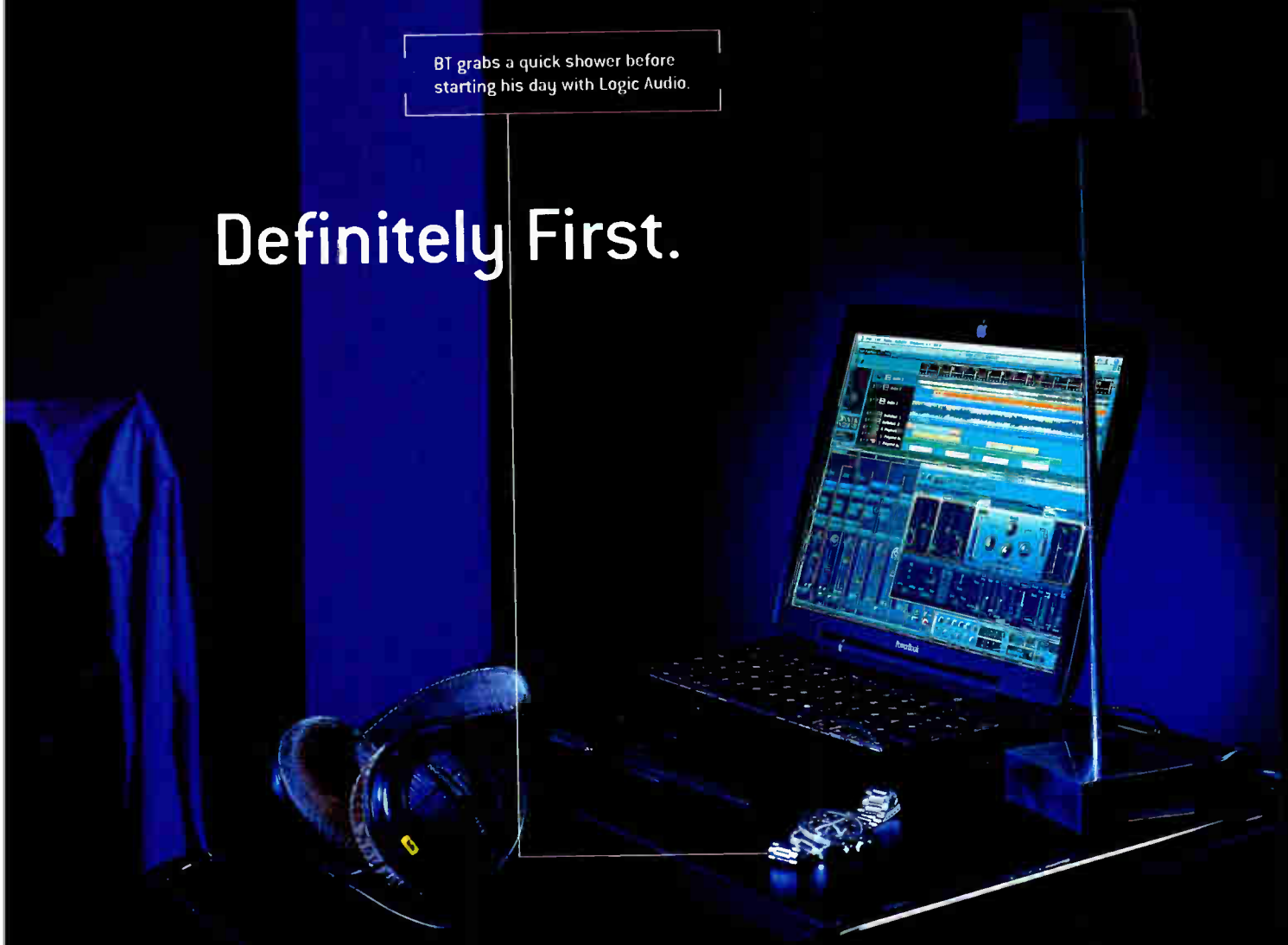

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PHOTO STEVE JENNINGS

AERO

by Blair Jackson

It's a measure of just how far Aerosmith has left behind its image as '70s bad boys that they were asked to be part of this year's Super Bowl half-time festivities, and that they staged an abbreviated Battle of the Bands there with none other than squeaky clean teen icons 'N Sync, and romped around with the likes of Britney Spears, Mary J. Blige and Nelly. There was Steven Tyler, still the energetic, rubber-lipped dynamo, dragging his trusty microphone stand around the stage with the same enthusiasm he had 25 years ago, shadowed step for step by the ever-dependable, guitar-slinger Joe Perry, who tossed off crunching power chords with effortless grace. Wait a second—what year is this? At this point, Aerosmith is more than just a band—they're an American institution. It is, as Jerry Garcia once said of the Grateful Dead, "like the town whore that's finally become respectable."

This is a group that understands its fans and its legacy, that never strays too far from what's expected of them, yet has managed to update its sound in subtle ways so they always seem current. All the critics' "dinosaur" jokes bounce off of them like bullets fired at Godzilla, because, year after year, Aerosmith *delivers*—on the road and in the studio. They *love* being Aerosmith—they wave that freak flag high—and they're seriously dedicated to keeping the experience fresh for themselves and their legions of fans. And part of doing that is taking the time to make albums they're proud of. Their latest is called *Just Push Play*, and like most of the Aerosmith records that preceded it, it offers up a blend of testosterone-fueled hard rock songs, gripping power ballads and grandiose productions that straddle several different moods at once. There are a couple of tunes with sweeping strings, but there are also ones with loops and other modern touches. Say what you will about them; they are not complacently standing still.

Just Push Play is the first Aerosmith album to be recorded almost entirely in home studios—Joe Perry's fabulously well-equipped basement, known as The Boneyard, and Steven Tyler's nearby barn studio, The Bryer Patch. It is also the first Aerosmith CD to use Pro Tools as the sole multitrack recording medium. The band didn't set out to work this way when they began pre-production in the fall of 1999—they had always worked well in conventional top-level studios. But as the project evolved over time, Perry, Tyler and their outside producer cohorts, Marti Frederiksen and long-time ally Mark Hudson, came to love the comfort and convenience of

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2001 Rock and Roll Hall of Fame inductees L to R: Tom Hamilton, Brad Whitford, Joe Perry, Steven Tyler, Joey Kramer.

working at home, and the flexibility and dependability of hard disk recording. That more and more top-level bands are working this way is sobering news for professional recording studios, but equipment manufacturers and dealers should be doing cartwheels—these "home studios" are stacked floor to ceiling with the latest gear, as well as fine vintage pieces.

"I've had a studio since I moved into this house 11 years ago," says Perry, who, like the others bandmembers, lives in the Boston area. "As with most project studios, it started off as a hobby years ago, with a cassette. In the '70s, I was the only one in the band that had a studio. Then I got an AudioTronics board and a Scully 1-inch machine and an 8-track. Later, I made the jump to an Allen & Heath 24-bus and an Otari 24-track. My main motivation through the years, aside from having a place where we could do demos, was to have a place where I could fly guitar solos over from. I always wanted to make sure that it would sound as good as it

Setting Up the Mix House

BY JOHN KLETT

PHOTO: T. HIGGINS

Mike Shipley and I were walking around the AES show in L.A. last September, trying to work out some scheduling issues for something, and he mentioned an Aerosmith mix that might happen in a house somewhere near Boston from the middle of November to the middle of January 2001. At that point, it was all up in the air; nothing was really set. Based on what he was telling me, I figured this would be six or seven weeks away, and no one had even looked at the house. We agreed that [studio designer] Francis Manzella and I should at least go look the following weekend. So we did, and we came away with a rather large list of things that would have to be done. Two weeks went by before we got word that the project was a "go," and we had five weeks to make it happen.

Fran issued a set of plans for acoustical treatments that would be applied to the mix room and specifications for beefing up the floor structure so it would hold nearly three tons of equipment. That part of the house was built in the early 18th century and had floor joists made from tree trunks split in half. A door and several windows needed to be blocked off so the neighbors would not be disturbed. Fortunately, Joe Perry had a tap into a good contractor who could do the work. I was left with pretty much everything else.

The house had a 60-amp service from sometime in the late '50s, so we would have to bring in a new 200-amp service. Joe pointed out that the power sometimes goes away in the winter when it snows, so we were looking at a UPS [uninterruptable power supply] and maybe a generator set. I went with an 18KVA Liebert UPS with an extra battery cabinet. This would hold the entire system up for about 45 minutes if the incoming power went down—plenty of time to shut down or change over to a generator. As an added benefit, the UPS was a double-conversion type, so it also provided rock-solid line output regulation no matter what was coming in. The noise floor of the SSL 9000 J that was rented for the project

—CONTINUED ON PAGE 44

Mike Shipley in the mix room

PHOTO: J. SEAVER

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could sound, and it would be technically strong enough to use—whether it was guitar or Steven's vocal. So I worked really closely with Perry Margouleff to build the studio here. It's been in three different parts of my basement. I got rid of the Allen & Heath, and I found this old Neve 8068 board at WGBH [in Boston] and Perry [Margouleff] reworked it from the ground up and made this 8-bus board into a 32. George Augspurger came down and tuned the room. It got to where the demos we were working on here started sounding so good that finally we just said, 'Let's do it here.'"

The band's previous CD, *Nine Lives* (released in 1997) was essentially cut twice—once at Criteria in Miami using ADATs and then re-recorded at Avatar in New York on conventional multitrack. The band had no interest in repeating that experience, though when writing sessions for the new record began, there was no real plan in place.

"We didn't really have any regular demos for this record," Perry says. "We were writing as we went along; the four of us—me and Steven and Marti Frederiksen and Mark Hudson. We might start with a drum loop or a rhythm track in Pro Tools, or on other songs we'd start with acoustic guitars. Probably half the songs were written on acoustic guitars, and we'd track with a loop or whatever. Then we'd put a rough drum track on here at my studio, just to get a vibe. And then from there we'd start layering. So the songs had a cohesiveness and a vibe to them at the end of the day."

"What we really did was take our demos and turn them into the record," adds Frederiksen, who had songwriting but no production credit on *Nine Lives*. "When we approached each song, it was like it was going to be on the finished record. With that in mind, we had the attitude that we were actually doing the record while we were writing, and we weren't going to redo everything later." Frederiksen says that when they were writing songs, "we were making sure that we were covering all the bases—some rock songs, some pop songs. I think we really nailed it this time." Perry says that one of the things he likes about Frederiksen is that the drummer/guitarist/vocalist brings a younger and hipper attitude to his writing—"He's from the Pro Tools generation," Perry jokes—but Frederiksen is quick to point out, "I didn't want to make them something they're not. I wanted to incorporate a fresh vibe for them, not change what they are."

Once the decision was made to keep building from the demos, recording everything in Pro Tools and working primarily at The Boneyard and The Bryer Patch, a Pro Tools engineer named Richard Chycki, who had worked with Frederiksen on a Jeff Healey album project in Canada, was brought onto the recording team, which included Perry's in-house engineer Paul Caruso, who has been with him for two-and-a-half years, and Paul Santo, who runs Tyler's studio.

"I think there's always been a little stigma about doing a home studio record," Chycki says. "I think it brings to mind an image of some guy in a dank, dark basement huddled over a 4-track with some 'mudtone' speakers, and all that. This is not like that. This place is obscene. There's just tons and tons of equipment at our disposal. Our slogan was '*more!*'" he laughs. "We had five or six Pro Tools systems, 160 gigs of hard drive space. Both Joe's and Steven's studios are amazing."

Though he is an engineer and mixer who has unabashedly embraced Pro Tools, Chycki is well aware that until recently there has been resistance to the technology in some engineering circles. That attitude, he says, seems to be changing. "I think there were a lot of people who didn't like Pro Tools just because it's computer-based and was therefore intangible in some way to people used to working with recorders, where you'd see reels spinning and you'd have actual tape. But when they see how it actually is to work with and they heard the end result, particularly with the best systems now...well, it's different than it was just a couple of years ago. Pro Tools has really come into its own."

"The danger in Pro Tools," Perry adds, "is things not being wide enough and getting enough air. So you need to get someone in there who knows how to work against those things. Richard's using some of the plug-ins, and he's using old LA-2As on other things. I think everything sounds really, really good."

"At The Boneyard, we've got a desk full of Neve 1073s [preamps], and we also have some Focusrite ISA 110s and a great microphone collection," Paul Caruso notes, "so when you combine those with the Pro Tools, it's going to sound good. The pressure is always on to have a good chain to whatever recorder you're using, and when it comes down to it, that's really what Pro Tools is, a recorder that also happens to have a lot of other features. The editing, DSP, recalling of mixes and all the plug-ins made it an easy choice for us."

"I have a beautiful, totally reworked Studer 800 Mark 3 that's just sitting over here in the corner," Perry says. "We never used it. We didn't need to."

Joe Perry's Boneyard studio.

PHOTO: J. SEAVER

Unlike many other Aerosmith albums where the band attempted to lay down live rhythm tracks as a group and then added vocals and solos later, on this project the drums and bass were the last things recorded and nearly every part was added separately, with each player reacting individually to what had already been put down in Pro Tools by the others. So, in effect, they built the master take of each song part by part in Pro Tools, and there is no band performance of any song.

"On the one-hand, some people might be disappointed to hear that the whole band didn't sit in a room and play it all together like a live track,"

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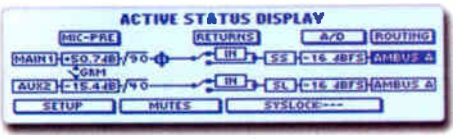

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Perry comments. "But that's such an impractical way to do things, because, in my experience, 90 percent of the time you go in and you do that and then you end up replacing the bass, replacing the rhythm guitars, and you're just trying to get a good drum track. When you think about it, what better way for the drummer to play to a song than to hear a song that's got guitars that are keepers and vocals that

PHOTO: MARK SELIGER

are keepers? It's like playing along with the band live, for real."

Drummer Joey Kramer and bassist Tom Hamilton had a wait of several months before their contributions were added to the songs; first, Perry, rhythm guitarist Brad Whitford and Tyler methodically laid in their parts. Perry prides himself on coming up with different guitar textures from song to song, and this album was no exception. "It might have even more [different guitars] on it than usual, because we did them at The Boneyard," he notes. "There are acoustic guitars on a lot of songs. For electric, I might go for a clean Tele into a Twin kind of sound or a highly overdriven rock thing. Since we record here, I don't have to cart my entire collection around, which I never do anyway. You usually just pick a few you know you're going to use. But here I have every guitar that I would ever want, and some that I don't, down here at our disposal. There are probably about 50 guitars out of the cases at any given time, and a lot of other things that have strings on 'em. I've got a Vox mandoguitar and a pedal steel and all sorts of amps. I'm a big Combo fan—I rarely use a 4x12. Maybe if we need something big and crunchy, but generally I find the smaller the amp, the easier it is to control and the sound is sometimes denser. A Royer [mic] can really handle high SPL, too."

"We'll switch around a lot between guitars and amps," adds Caruso. "He'll get out the Les Paul and put that through one amp, grab the Rick and the AC-30 and put that part on over here." Caruso says he and Perry also experiment with different mics on the amps, but on this project, "what I used a lot was a Royer R-121 ribbon mic, which was a microphone that Fletcher [of Mercenary Audio] suggested. Joe and I both really, really liked it a lot; it became my favorite guitar mic. When we track guitars here, it's high SPL," he says with a chuckle. "The Royer can really handle high SPL; it gave it a wonderful quality."

Adds Richard Chycki, "Being a guitar player myself, I love to record guitar and lots of it! Guitar setups varied from an organic single SM57 or Royer dead center cone on a combo, to an intricate array of amps, cabinets and mics with a matrix of Neumann KM86s, 87s, Royer R-121s, Shure SM57s, Sennheiser 421s and AKG D112s. I favor Neve mic preamps, or Focusrite ISAs occasionally, fed through a Pultec EQP-1AS—'hi end shelf' mode on the IAS model is awesome—with a bit of LA-2A or [Empirical Labs] Distressor, application dependent. I also used various combinations of Neumann KM84s and AKG 414 TLIIs or C-12s for acoustic guitars, often recording the acoustics in true stereo rather than double-tracking for a huge, but realistic, sonic image from the instrument."

And though Perry mostly used amps from his extensive collection, Chycki also employed an Amp Farm plug-in here and there. "I'd say that's my current favorite plug-in," he notes, "though I'm really looking forward to hearing the Fairchild Bomb Factory and the Pultec Bomb Factory. But the Amp Farm sounds really good—it's got an AC-30 in there, Twins..."

Tyler tracked many of his vocal parts at The Bryer Patch, which is equipped with Focusrite and Neve mic pre's interfaced to his Pro Tools system. "Some of Steven's earliest vocals were done with various Audio-Technica mics," Caruso says. "We tried a Shure SM7 for a little while [as well as a Neumann M149], but we ended up doing a lot of work with a C-12; that was probably used more than any other mic for vocals."

"The C-12 is one of my all-time favorite vocal mics, as it is for Marti," notes Chycki. "It complemented Steven's vocal texture perfectly. I also had both Joe and Steven's studios outfitted with identical equipment chains for vocals, so the recording remained consistent no matter where the recording was done.

When it finally came time to record the drums, they went out to Longview Farm, a highly regarded studio in rural Brookfield, Mass., where the band had worked before. "It's a really cool vibe and a big room and a Neve to track to," Caruso says. "We wanted to get a drum sound that had a lot of ambience." The team bypassed the studio's tape multitrack tape recorders in favor of Pro Tools. Then Tom Hamilton's bass part was interwoven with what was in essence a finished track.

After a couple of large string sessions at Ocean Way and the Village Recorder in Los Angeles with noted arranger David Campbell, a small-group string session at Sound Techniques in Boston, *Just Push Play* was ready to be mixed. Again, Perry and Tyler decided to stick close to home: "What happened was I bought my neighbor's house," Perry says with a laugh. "It's one of those great old

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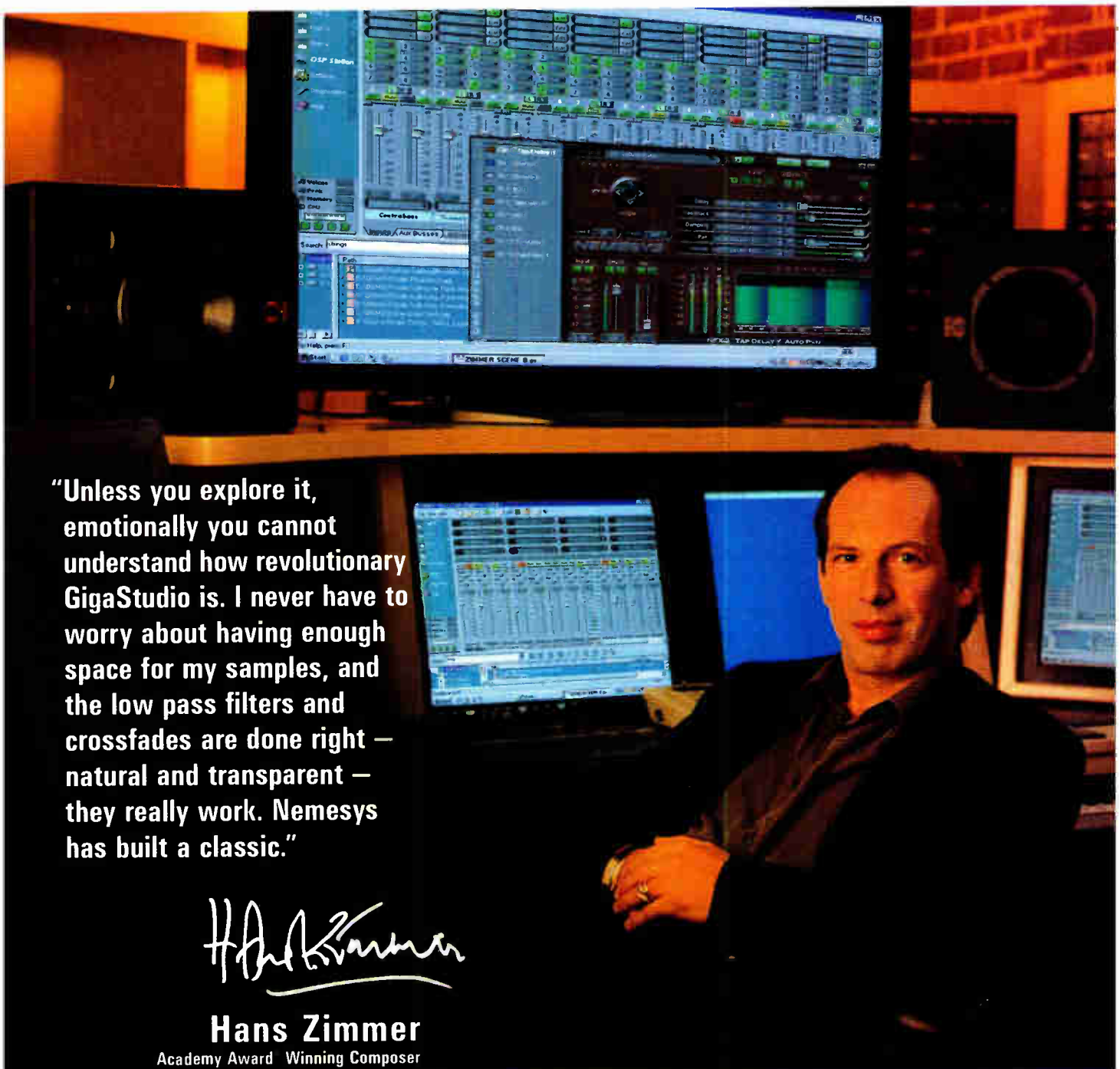

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New England clapboard houses; parts of it date back to the 1680s. Around the same time that happened, we were talking to Mike Shipley about mixing the record, and he said, 'You know, a

couple of times what I've done with Mutt Lange is I've set up an SSL in a house, and we've had great success.' So that's what we did. We did some work in the house, shoring up the floors and doing some acoustical work and then bringing in an SSL 9000." [See sidebar for more on this process.]

At the Mix House, as it was dubbed, Shipley mixed the CD from the Pro Tools tracks—which, in the case of a couple of songs that featured strings, numbered over a hundred. "The most we had was 102, with an orchestra, a full band and eight vocal tracks, all of which are used at different points in the song," Perry says. "But really, a lot of the decisions were made as we recorded, as opposed to recording *everything* and then trying to sort it out at the other end. We're big believers in walking out of the room with a rough mix that sounds as close to being done as you can get. If there's anything you can call a demo, it's those early, rough mixes."

"The good thing about Pro Tools," Chycki comments, "is you're always in a mix of some sort. We would sit down and premix the material to some degree, because we were deciding if we wanted something to be EQ'd drastically—like if we wanted a harsh radio tone on the vocal or something, we would use a plug-in for that and then Shipley would listen to that and decide if it would fit into the mix as is, or if not, he'd create something to his own taste." Shipley monitored the mixes on KRK E8s and Yamaha NS-10s. Peppered among the *nine* racks of outboard equipment were such pieces as a Fairchild limiter, UREI 1176, LA-3As, LA-2As, Roland's Dimension D, SPX 90 and EMT plate reverbs, and many Distressors.

Little mix tweaks were still being made by Shipley back at the Mix House when the band went down to Tampa for their Super Bowl appearance the last weekend in January, but for all intents and purposes, the record was finished, and all that remained was returning the rented equipment and restoring the building to (most of) its former glory. The first single, "Jaded," was already in radio programmers' hands and shooting up the airplay charts. "I don't think the record company thought we were going to give them a record for two years," Perry says. "When we first went to them and said we wanted to produce it ourselves and we wanted to record it in our own studios, they probably thought, 'Let them have their fun. They'll get tired of doing this, and then we'll bring in the big gun.' I think we shocked them last summer when we played the first eight tracks. Then it became, 'Let's talk about album art.'"

With another solid CD under their belts—Perry says the song he's proudest of is "Avant Garden," one of the tunes with strings on it—the band was starting to think about hitting the road once again. That will involve a little more work than usual: "We have to go in and learn the songs in a way," Perry says, "since we've never really played them in their finished form as a group. Frankly, I'm dreading having to go back and learn some of the solos. Some of these solos were done at two in the morning! I always have this attitude [when I'm recording] that 'I'm just filling the space. I'll redo it when I'm more together, or tomorrow or whatever.' And then, inevitably, that turns out to be the best solo. I never went back and redid them. It was that way on the whole record. The performances were really strong; we didn't redo much at all. A lot of it, I think, is because we had so much freedom in the way we worked; there wasn't that feeling of pressure every second that you've gotta nail it right away."

And though working at home allowed them to be more leisurely in certain ways, they rarely slacked off. This is a band famous for its work ethic, at least in recent years. Indeed, Caruso notes, "They love being in the studio; particularly Joe. It's part of what they do, and they take it seriously and they're really great at it."

Adds Richard Chycki, "I didn't know them before this project, but I can say they are, without a doubt, the hardest working band that I've worked with to date. They really want to do what they do. They really like to record. We'll be in the studio for 14 hours, and we'll all have a pale skin tone and everything, and Joe will come in at the end of the night and want to record some more stuff—some ideas that he has—and he'll keep going. He just loves what he does; they all do." ■

Blair Jackson is Mix*'s executive editor.*

—FROM PAGE 38, SETTING UP THE HOUSE

is so low that you can hear any residual system noise, so I opted for ground isolation after the UPS, and an EquiTech wall-mounted balanced power distribution cabinet. Once again, Joe came through with a great electrical contractor. I called the manufacturers and arranged the purchases and deliveries and handed off as set of plans to the electricians. They got the new service, a new ground field and all the wiring and panels in place before the electrical equipment arrived.

The audio wiring was mostly prefabricated. I spent quite a bit of time on the phone making sure everyone was busy and no one had to wait for anything. There was no time to waste. Jack Kennedy, who's a wiring specialist, and I arrived 10 days before Mike was schedule to start mixing. Because we were taking everything out after the mix, we had to be creative with how we ran wire. There were fireplaces in both the mix room and in the "machine" room where all the Pro Tools systems were, so we ran all the wire down to the basement and back up through the ash cleanouts. Fran showed up on the last day to take some measurements and had the contractor fabricate a set of dual-tuned Helmholtz resonators that smoothed out a couple bumps at 60 and 80 Hz. We delivered the room the next day in the afternoon—just six hours behind schedule. ■

John Klett is a technical audio consultant. He's on the Web at www.technicalaudio.com.

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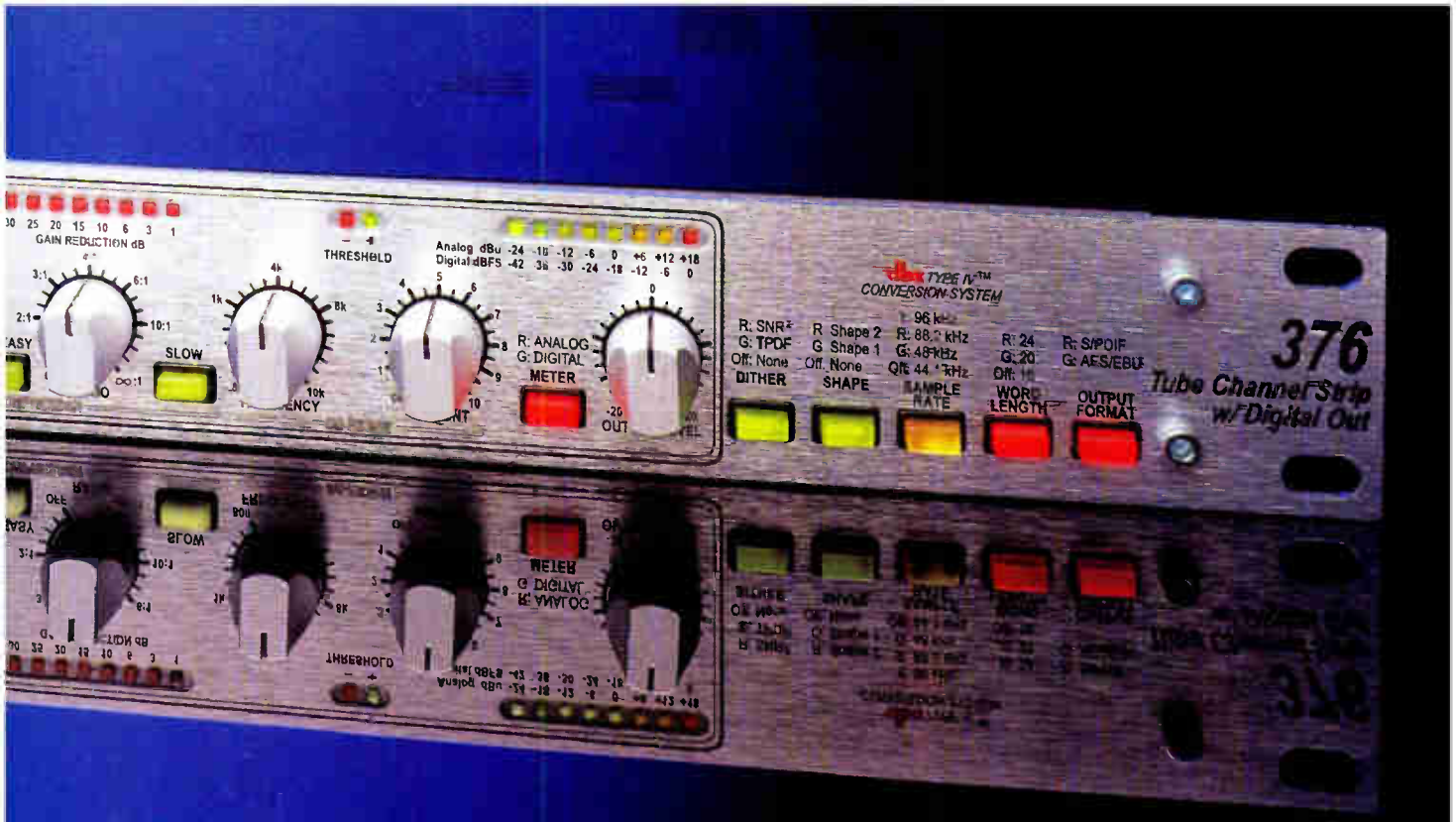

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Fairlight Prodigy

MIX'S 2001 GUIDE TO STAND-ALONE AND TURNKEY POST, MUSIC AND MASTERING SYSTEMS

An All-In-One AUDIO WORKSTATION In Every Room

BY RANDY ALBERTS

Despite an alarming number of proprietary file formats, hardware configs and CPU implementations, today's recording devices are moving toward an ever-global interconnectivity. Industry standards and manufacturing alliances are expanding, and no workstation is truly an audio island unto itself—or is it? The music, post and mastering production systems highlighted here bristle with the AES/EBU, VITC, SMPTE and 9-pin ports that pave an open lane between platforms. But this guide focuses on stand-alone systems—digital audio workstations that require little more than a monitor, keyboard and an AC strip (or five) to power-up.

iZ RADAR 24

Because we are focusing on turnkey systems, this list does not include software-only solutions. And Digidesign's Pro Tools, Soundscape's R.Ed 24 and Sonic Solutions' SonicStudio aren't listed here, because they are not offered in a turnkey bundle with a Mac or PC. Also, compact all-in-one hardware workstations like Yamaha's AW4416, Fostex's D-2424 or Akai's DPS24 have been excluded, because they don't provide an option for displaying all record, edit, mix, effects and mastering functions on an SVGA monitor. It's worth noting that Wave Digital's e-commerce site is a pull-down menu dream that helps users easily build turnkey solutions from a host of software, hardware and computer manufacturers' products, but, for the reasons given, it is not described below.

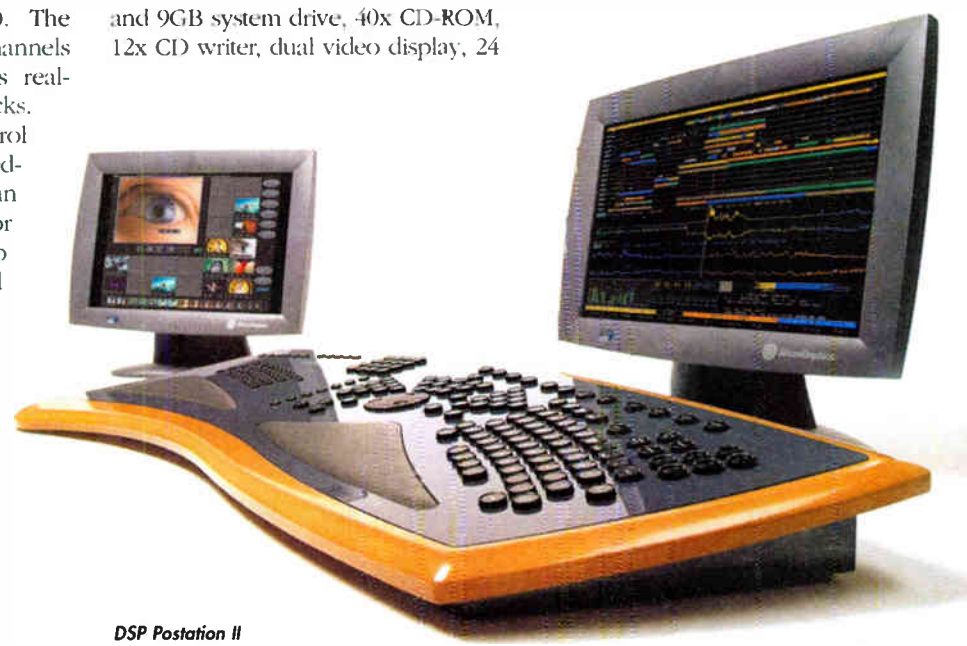
However, if you're a post, music recording or mastering pro looking for a powerful, "one stop" desktop system, then you should find what you're looking for. There's something here for any budget—prices run from a modest $3,000 to more than the cost of a middle-class home!

Akai's DD1500 ($10,000 to $15,000) is a modular system configurable for a variety of post facilities and high-end music production studios. The core of the system is the DD1500m Signal Processor Unit that handles multiple clock sources, all timecode synchronization tasks and digital I/O with four AES/EBU connectors (expandable to 12). The 1500m supports 32 audio channels and can create simultaneous real-time crossfades on 16 tracks. The DD1500's Remote Control Surface includes numerous dedicated parameter buttons, an audio/video jog wheel for scrubs, and can play traffic cop for up to 16 Akai DD8 Digital Dubbers and other post equipment. A digital storage unit with room for two fixed or removable SCSI hard drives is also part of Akai's top-of-the-line workstation, and magneto optical disks recorded on the company's DD1000, DR8, DD8 and DR16 machines are more than welcome in a DD1500 solution.

Akai DD1500

Previously managed by Sascom of Canada and now marketed on an exclusive worldwide basis by the newly formed Cube Technologies GmbH (Cube-Tec), the average multichannel AudioCube 5 system is debuting for slightly more than its $30,000 AudioCube 4-II predecessor. All development is still being handled by HDA (Houpert Digital Audio) in Germany.

The all-in-one AudioCube 5, which is used by the Smithsonian for the "Save America's Treasures" and "Smithsonian Folkways Recordings" programs, comes with a dual 1GHz Pentium III system, Windows 2000, a removable 36GB IBM audio drive and 9GB system drive, 40x CD-ROM, 12x CD writer, dual video display, 24 channels of 24-bit/96kHz AES/EBU digital I/O, and VITC and LTC, among other goodies (a 56-channel MADI interface card is due this summer and will be available as an alternate to the current AES/EBU card). SurroundCube users will be glad to know those features, including tools and Virtual Precision Instruments (VPI) for multichannel DVD-A work, will be incorporated in the overall AC 5 system, and Steinberg's Wavelab 3.03 and NUENDO 1.5 software will both be included as standard equipment, along with PitchBandit, DeClicker, Surround-PAN, LFE Manager and other VPI modules.

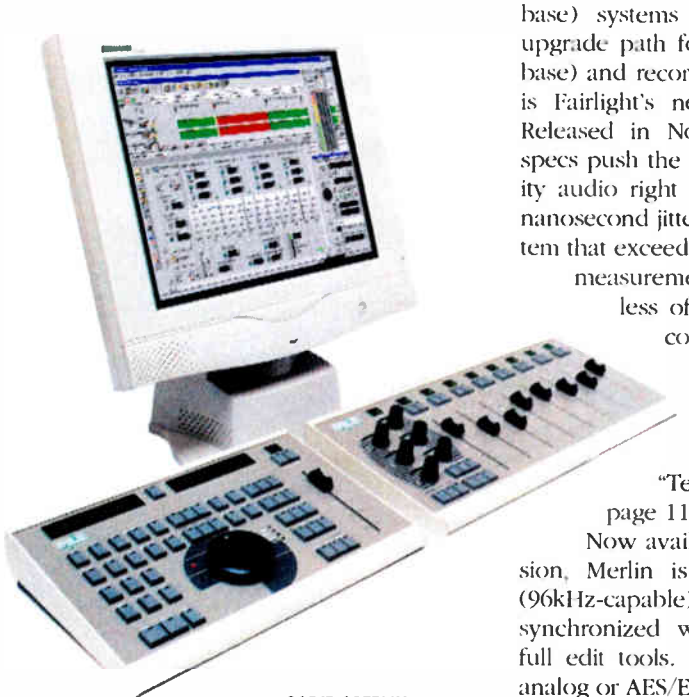


DSP Postation II

An All-In-One AUDIO WORKSTATION In Every Room

Quadriga ($25,000 average system) remains in the AudioCube family as Cube-Tec's 2-channel audio archival and restoration workhorse, an automated capture station for quality-controlled A/D conversion of sound archives to DAT, CD-R and digital mass storage systems.

DSP Media offers two high-end, post-production workstations. Starting at around $117,000, Postation II features sleek hardware surfaces and ergonomically amazing dedicated controls—it'd be right at home on the bridge of the *Enterprise*. (See Roger Maycock's "Field Test" in *Mix*'s December 2000 issue for a thorough description.) Random-access video editing is standard equipment, as is a 32x32 modular digital mixing engine that's scalable to 96 audio channels. Also included in this 24-bit record/edit machine are the company's Digital Mixing Processor and Non-Linear Video Recorder/Player modules, each with its own SGI high-definition 1600x1024 touchscreen display and the MP-1 Surround Sound Processor, the latter bringing a comprehensive bus matrix and simultaneous multiformat mixing, output and monitoring to the post-production dinner table. Postation II is available with the new DMP engine (PX System) or in its PY System configuration, the latter incorporating up to two Yamaha 02R digital mixers in lieu of the DMP interface. Also available from DSP Media is the Desktop System, a "trimmed-down" version of the Postation starting at $70,000 that includes the company's Digital Editing Processor, Speed Console interface, keyboard/mouse and Non-Linear Video Processor.



SADiE ARTEMiS

Designed for stand-alone 24/48-track recording or used with the TEC Award-winning System 5 digital console, the Euphonix R-1 supports all formats up to 24-bit/96 kHz and includes a 12x12 MADI router—essentially a 768-channel matrix for real-time routing over distances of up to 150 feet. The R-1 is available in numerous versions—with or without converters—and a 24-track system is easily upgradable to 48 tracks. Three control combinations are offered, depending on whether the user requires a screen/mouse/trackball/keyboard/etc. New for the R-1 is Version 3.0 software, which integrates the system into a networked environment by sharing with other workstations via Broadcast .WAV files. Also, Euphonix plans to support AES-31 file interchange in Version 4.0.

A long-standing member of the stand-alone DAW club is Fairlight. Included with the company's FAME2 ($116,000 base) and Prodigy2 ($83,000 base) systems and available as an upgrade path for its Prodigy ($69,000 base) and recording-only workstations is Fairlight's new QDC Technology. Released in November 2000, QDC's specs push the envelope of high-quality audio right out the window. *Sub*-nanosecond jitter provides a clock system that exceeds AES specifications for measurement reference regardless of sync source, and the company claims editing and recording commands respond with no perceptible delay. See Barry Rudolph's "Technology Spotlight" on page 112 for more details.

Now available in a 48-track version, Merlin is a stand-alone 24-bit (96kHz-capable) recorder/editor with synchronized waveform display and full edit tools. Users can select from analog or AES/EBU digital I/O, and the system can interface via MediaLink to multiple MFX3plus, FAME and Prodigy workstations, Merlin recorders, outside file servers and Windows- or Mac-based DAWs for seamless file sharing.

The FAME2 Fairlight Audio Mixer/Editor) workstation provides up to 48 record/mix tracks and 48 long-throw, motorized faders, up to 32 output buses, a 96kHz sample rate throughout, and as many as 48 analog and AES/EBU digital audio I/Os. The Prodigy2 features the same sample rate options, up to 32 record/mix tracks and 32 channels of AES/EBU and analog I/O, and a 16-fader control surface. The original Prodigy provides a 24-track recording/mixing engine upgradable to 32, a 12-bus mixer upgradable to 24-bus and 16 motorized faders. Each Fairlight system comes with LTC I/O, 4-band EQ and dynamics processing on each channel, compressor/limiters on all mix buses, integrated stereo and surround sound monitoring, and varying amounts of dynamic automation, mutes, pans and aux sends per channel. Whew.

Here's another distribution/nameplate change: iZ Technology, developers of the TEC Award-winning RADAR II random-access digital audio recorder formerly distributed by Otari, is now handling its own distribution and direct sales. For $4,995, the new RADAR 24's base system comprises a rackmountable audio engine capable of 48, 96 and 192kHz recording at 24-bit resolution, a BeOS-driven software backbone and a QWERTY-like control keyboard. Twenty-four channels of TDIF and two channels of AES/EBU and S/PDIF digital I/O are standard equipment, as are a 9GB removable SCSI drive, integrated 100-BaseT Ethernet, and backward file compatibility with RADAR I and II systems. Any standard SVGA monitor plugs right into the back of the RADAR 24 base unit, and though not required, any Mac or PC can control a stack of RADARs via MIDI machine control.

iZ's optional Session Controller ($1,195) sports hardware transport controls, a jog wheel, and dedicated edit and macro keys, and a 24-channel meter bridge can be attached atop the controller for $495. A 24-channel/96kHz AES/EBU card ($995) is available, and the same 48kHz analog I/Os found on the earlier RADAR units can be had in the form of an add-on card ($1,695). The company's RADAR 48 is also available (price TBD), with the choice of two removable 9GB drives or one 18GB SCSI drive per base unit, and an optional 48-channel AES/EBU digital interface

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card can be added to the included 48 channels of TDIF I/O.

The Mackie HDR24/96 is a 24-bit/24-track recorder/editor that can function as a stand-alone unit or be fitted with a standard S-VGA monitor, PC keyboard and mouse for more extensive editing and control. An internal 20GB drive is standard; a second bay accepts interchangeable media, such as Mackie's M90 22GB removable hard drives or 2.2GB Mackie PROJECT cartridges. Retail is $4,999; optional I/O cards—priced from $99/each—handle analog/ADAT/TDIF/AES interfacing. The deck supports 12-track/96kHz recording in double-wire mode, fed from third-party 96kHz ADCs. Standard features include MIDI/SMPTE sync, with a built-in 100BaseT Ethernet port for transfering tracks to another Ethernet-equipped computer or server. For more info on the Mackie HDR24/96, see the review in last month's *Mix*.

Otari continues to refine and expand its RADAR II 24-bit/24-track recorder/editor, with a host of new features and enhancements. The system is based around a rackmount main unit with a 48-track-capable RE-8 II remote controller/keyboard/meter bridge. A 9GB onboard disk is standard (additional drives can be added via a rear-panel SCSI connector), and sync lock includes all SMPTE/EBU timecode rates/formats, video composite (NTSC and PAL) and word clock. The latest V2.12 software adds waveform display, DVD-RAM support and several operational tweaks. Existing users may require a hardware upgrade to access the new features. Otari plans numerous system updates, including a 24-channel AES/EBU I/O card, MADI, a 96kHz Turbo card and a RAID array.

Mackie HDR24/96

Joining the Akai and Yamaha offerings in the compact hardware workstation category is **Roland**'s new VS-2480 ($4,495). Recently announced at Winter NAMM 2001, the latest mega-member of Roland's VS family lays claim to being the first self-contained workstation offering 24 tracks of 24-bit/96kHz audio in tandem with a 64-channel digital mixer, onboard effects processing and optional CD burner. Any VGA monitor and the included mouse plug into the 2480's back panel (no add-on card required) to join the unit's 17 motorized faders as one compact, little, ergonomic hardware wonder. SMPTE and Word Clock input, dual-stereo effects processors (expandable to eight), eight balanced XLR and 16 balanced TRS inputs, and a drag-and-drop, mouse-driven environment round out the VS-2480's bullet list.

SADiE's new 4.0 software update, which now supports all Microsoft Windows operating systems and is fully compatible with Mac audio disks and proprietary EDL formats without the need for file translations, is featured in the company's ARTEMiS ($15,495 base), 24-96 ($12,995 base) and RADiA ($7,495 base) stand-alone turnkey solutions. The new software also supports SADiE and DirectX plug-ins, 96- and 192kHz sampling rates on any SADiE hardware, 5.1 surround mixing and 32-bit audio resolution throughout each system.

Tascam MX-2424

The company's 24-96 and ARTEMiS systems come complete with a 667MHz Pentium III rackmounted PC, 10GB drive, 17-inch monitor, 40x CD-ROM drive, and a keyboard and mouse. Four-channel RS422 and timecode cards are included, as are Rorke data drives, an external SCSI interface and SADiE 4.0 software. The 24-96 provides up to 32 audio I/Os, LTC/VITC support and eight channels of analog I/O with an optional XLR breakout box; it is also available as a portable "lunchbox"-style Pentium III, starting at $16,495. Boasting three times the DSP power of the workhorse 24-96 is ARTEMiS, which offers multitasking capabilities for background recording and backup routines, and two removable 9GB SCSI drives come as standard equipment. Rounding out SADiE's stand-alone workstation team is RADiA, which features the previously described Pentium III-based PC system and is based on the original SADiE Classic workstation. Capable of recording 24 tracks of compression-free 24-bit/48kHz audio onto removable SCSI drives via four balanced analog XLR, AES/EBU and S/PDIF digital I/Os, RADiA is also sold as a single PCI card for existing SADiE systems.

PROFESSIONAL RECORDING EQUIPMENT

MANLEY Langevin

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An All-In-One AUDIO WORKSTATION In Every Room

Priced from $3,999, the Tascam MX-2424 is a disk-based, 24-bit recorder/editor offering 24-tracks at 44.1/48 kHz or 12-track operation at 96 kHz. Multiple four-rackspace unit can lock together for more tracks, and each unit includes onboard MIDI and LTC SMPTE synchronization, and standard S/PDIF and AES/EBU digital I/O. A planned upgrade of its MX-View software for the PC or Mac will add full-function editing with waveform views and onscreen control of multiple MX-2424s. Card slots allow the user to add various optional I/O cards ADAT/TDIF/analog/AES/etc. Other features include a jog/shuttle wheel, an onboard 9.1GB drive (45 minutes of 24-bit recording), an open slot for a second internal drive, a SCSI port for adding external devices and a Smart Media Flash ROM card for loading system updates. (For more details, see the MX-2424 review in the October 2000 *Mix*.)

FrameWorks/DX from WaveFrame is a potent 24-bit workstation with up to 96kHz sampling, 64 disk channels and several turnkey configurations. Pentium III-based rackmount systems start at $9,495 for a unit with 16 channels of digitaloptical I/O. Also available is MADI I/O (64 channels on a single optical or coax cable) and AES/EBU I/O (for up to 34 channels of 96kHz). Optional plug-ins include Reverb, TimeStretch, Dolby Digital AC-3 and DTS 5.1 Surround encoding and Denoising/Declicking—total price depends on components chosen. Dual-monitor display, an 18GB Ultra 160 SCSI drive and 128MB RAM are standard, and each system can be upgraded with a dual-CPU PC and removable Kingston audio drives. Full mix automation of all parameters, classic WaveFrame-style editing, and 10-band and parametric EQ are included, as are multiband dynamics processors, CD mastering, 5.1 surround panning, a user-configurable digital mixer and an open architecture that also supports DirectX plug-ins. The new WaveFrame/7 system, based on the post-production workhorse WaveFrame 408+ recently put out to pasture, is worth noting in brief here. Based on the same rackmount CPU options, WaveFrame/7 promises 24-bit audio up to 96 kHz and a host of power tools like the WaveFrame Sound Selector database, cue sheet printing, and special spotting, logging and ADR modes. Pricing for turnkey systems starts at $11,495.

Xytar ADMS 32HD

Offering several "studio-in-a-box" turnkey solutions, Xytar includes microphones, cables, a modem and even a preconfigured Website with its family of Cyrix 400MHz, Duron 900MHz and Thunderbird 1.4GHz-based rackmount audio engines. The company's ADMS 32HD series of 32-track/96kHz studios range from an $8,999, 20-bit version with eight analog I/Os and a 9GB Jaz drive, to a 24-bit, 32 I/O, 37GB drive package for $17,499. Each ADMS 32HD system includes one of the CPUs, a 17-inch high-res monitor, keyboard/mouse, analog and S/PDIF digital I/O and a 32-channel Xytar mic mixing console. An additional 2GB removable Jaz drive, 32x CD reader and 2x CD-RW drive are also onboard, and the company's Music Webcaster package with MP3 encoding software, Netscape Communicator, a 56k internal modem and a ready-to-post music Website package is included for easy links to existing music sites.

The company's new musician-oriented IBMS32 workstation ($2,499) features two analog I/O connectors, a 16-track console and the same base system as the ADMS line, *sans* the Music Webcaster package. Also new is Xytar's DMS4848 CDR system (starting at $29,499 for the 20-bit version), a 48-channel solution that provides simultaneous recording on 48 tracks, a 48-channel console and—you guessed it—a 48GB removable Winchester SCSI hard drive. The company's Sight-Impaired Users Option, a $2,000 hardware/software package featuring proprietary voice command and read-back technology, is a boon to those not so fortunate. Right on. ■

Randy Alberts is a musician, engineer and writer exploring music and recording technology in his Pacifica, Calif.-based studio.

Manufacturer	Website	Phone
Akai	www.akaipro.com	817/831-9203
Cube Technologies	www.cube-tec.com	905/469-8080
Euphonix	www.euphonix.com	650/855-0400
DSP Media	www.dspmedia.com	818/487-5656
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43rd Grammy® Awards

BY BLAIR JACKSON

PHOTOS BY SCOTT GRIES/ IMAGE DIRECT

A Salute to the Tech Winners

This is supposed to be the Age of Choice in the world of cable/satellite TV. So how come the first three hours of the Grammys, when 80% of the 100 are doled out, aren't televised *somewhere*? Instead, those of us who care about more than the so-called "major" awards have to settle for half-second mentions of the "other" winners as they scroll across the screen on the way to a commercial break. Not much


U2

glory in that.

This is not to demean this year's telecast from the Staples Center in Los Angeles. The show was nicely paced and ran smoothly. Jon Stewart of *The Daily Show* was a fine host—witty, without being too cynical—and there were a number of excellent performances, including Madonna's typically flamboyant opening; the silky pop/R&B of Destiny's Child (who looked like they were dressed for the Gammy Awards); U2's inspiring and anthemic performance of the Record of the Year; the peculiar but soulful grouping of Moby, Jill Scott, Blue Man Group, a band and an orchestra; the over-hyped but actually quite moving Eminem/Elton John duet on "Stan"; and many others.

Below is a listing of the winners from *Mix*'s world—producers and engineers, as well as a few words from three of this year's honorees.

RECORD OF THE YEAR: "Beautiful Day," U2

Produced by Daniel Lanois and Brian Eno. Engineered by Richard Rainey. Mixed by Steve Lillywhite.

Only this song from the group's superb *All That You Can't Leave Behind* album fell into the Grammy's eligibility period. Otherwise, we might have seen Bono and Co. bounding up onto the stage for Album of the Year honors, too. ("Beautiful Day" was also Song of the Year and Best Rock Performance by a Group.) Will the album be forgotten next year? Not if U2's upcoming tour of the U.S. keeps their name out front.

ALBUM OF THE YEAR: *Two Against Nature*, Steely Dan

Produced by Walter Becker and Donald Fagen. Engineered by Roger Nichols, Elliot Scheiner, Dave Russell and Phil Burnett.

Though Steely Dan albums have won technical awards in the past (see below), this year marked the first time Donald Fagen and Walter Becker have taken home trophies themselves, leading many to observe that perhaps this was more of a "career" award than a specific endorsement of their *Two Against Nature* comeback. The fact is, though, that the Steely Dan album was strong, tuneful and, as we've come to expect, impeccably recorded.


Walter Becker and Donald Fagen—Steely Dan

PRODUCER OF THE YEAR, NON-CLASSICAL: Dr. Dre

Dr. Dre has long been a formidable production force, and 2000 was certainly *his* year, between his own album, *Dr. Dre: 2001*; his work with Eminem, including "The Real Slim Shady" and "Bitch Please II"; NWA's "Chin Check"; and Ice Cube's "Hello." Recording Academy president Michael Greene made a point of saluting Dr. Dre's win in this category during his annual (and always entertaining) harangue during the telecast. Though Dre was naturally pleased by his Grammy victory, he was less than gracious about the Eminem CD's loss to Steely Dan in the Best Album category: "To be perfectly honest, I think we were robbed," he told an interviewer. At least the ballots weren't counted in Florida.

BEST ENGINEERED ALBUM, NON-CLASSICAL: *Two Against Nature*, Steely Dan

Engineered by Roger Nichols, Elliot Scheiner, Dave Russell and Phil Burnett.

Winning Grammys never gets old—just ask Roger Nichols. The veteran engineer, who has been involved in the recording of every Steely Dan album, won his fifth Grammy at the Staples Center (the others were Steely Dan's *Aja* in 1977, *FM* in '78, *Gaucho* in '81 and for a John Denver children's disc called *All Aboard* in '97). While hardly blasé about his victory, Nichols seems most excited that Becker and Fagen finally won the big prize. "I thought that we had a pretty good chance of winning the engineering Grammy," he says, "but even with that, you never know. So when we won that I was happy. Then, when Donald and Walter started winning the other awards, I thought, 'Oh, this is great, but I still bet the voters are going for Eminem for Album of the Year.' I absolutely did not expect to get that award; it's great!"

Sharing the award with Nichols is the ubiquitous Elliot Scheiner (a two-time winner for *Aja*, his first Steely Dan album, and *Gaucho*) and two relative unknowns: "Phil Burnett works for Donald in his studio, River Sound," Nichols says. "He was working with

L to R: Dave Russell, Roger Nichols, Elliot Scheiner

me when we were doing the recording. Lots of times he'd be manning the board when we were doing vocal overdubs, or something, and I'd be manning the Pro Tools, so we were side by side. He put in as many hours as I did. And the same sort of thing was happening in Hawaii at Walter's studio with Dave Russell. I'd do some overdubs and then Dave would work on them. We'd switch off—'The horns are coming in.' 'Okay, I'll do them.' 'Donald's doing some vocals; Phil you do that.' I felt like they did as much as Elliot and I, so they deserved the recognition."

The album, which was cut at Clinton in New York and Becker's and Fagen's studios, took 18 months to record, short by Steely Dan standards. Why does Nichols think the disc caught the fancy of the voters? "It's real music. The songs are interesting, the lyrics are good...Steely Dan albums stand the test of time."

REMIXER OF THE YEAR: Hex Hector

The New York-based remixer was honored for his mixes of Jennifer Lopez' "Feelin' So Good," 98 's "Give Me Just One Night," Whitney Houston's "I Learned From the Best," Madonna's "Music" and Toni Braxton's "Spanish Guitar."

BEST CLASSICAL ALBUM: *Shostakovich: The String Quartets*, Emerson String Quartet

Producers: Max Wilcox and Da-Hong Seetoo. Engineered by Wilcox, Seetoo and Nelson Wong.

Co-producer Wilcox has won two Grammys previously, for Classical Album of the Year in 1976 (*Beethoven: The Five Concertos*) and Best Opera Recording in 1983 (*La Traviata*). The internationally acclaimed Emerson String Quartet has won four previous Grammys. The CD was recorded live at Harris hall in Aspen, Colo.

PRODUCER OF THE YEAR, CLASSICAL: Steven Epstein

A seven-time Grammy winner (including Producer of the Year in '84, '95, '97 and '98), Epstein didn't attend this year's festivities. "I was up against some very strong competition, some wonderful producers, and, quite frankly, I wasn't so sure it was going to be a winning year for me," he says. "Honestly, it's *always* a surprise to me, and a happy one." Epstein notes that he was nominated "for a more eclectic group of recordings this year than usual," which may have helped him.

Two were high-profile "crossover" projects: *Appalachian Journey* featured a diverse group of classical, pop and country players that included Yo-Yo Ma, Edgar Meyer, Mark O'Conner, James Taylor and Alison Krauss. It was recorded in Mechanics Hall in Worcester, Mass. ("My favorite venue for recording chamber music," Epstein says.), using only a pair of B&K 4009 mics to DSD. Chick Corea's *Corea Concerto* brought together the jazz pianist's regular sextet and a symphony orchestra at Air Studios in London. "The challenge there," Epstein says, "was to combine two different approaches to recording: For the jazz group, you want to be in close, to capture the power of the individual instruments, whereas with the orchestra, you're going for a more natural overall sound of the ensemble. The trick is to get the best of both elements."

Other discs Epstein was honored for were *Corigliano: Phantasmagoria*, a collection of Dvorák pieces, and pianist Murray Perahia's *Song Without Words*.

BEST ENGINEERED ALBUM, CLASSICAL: *Dvorák: Requiem; Symphony No.9*

Engineer: John Eargle.

This was the first win (after three previous nominations) for Eargle, who also didn't attend the Grammys, "because I would've sat there like I was waiting for my own execution," he says with a laugh. The CD features the renowned Czech conductor Zdenak Macal leading the New Jersey Symphony and the 140-voice Westminster Symphonic Choir through two of Dvorák's best-loved pieces.

"Macal is certainly an expert when it comes to the music of his countrymen, such as Dvorák," Eargle comments. "And the setting was great. It was recorded at the New Jersey Performing Arts Center in Newark, which is a beautiful new room with acoustics designed by Russell Johnson.

"We put our gear into the radio booth in the back of the hall. We had eight channels of 24-bit Apogee AD-8000. We monitored a complete stereo mix, but at the same time we had bused out the following pairs: the two mics that covered the soloists, the main mic pair and the house pair. [Mics included the Sennheiser MKH20, Sanken CU-41, Neumann KM84 and Neumann KM100 Series.] That gave us a certain amount of remix flexibility, and it meant that we have the ingredients for bringing it out in the future as a surround sound recording. In fact, all our orchestral pieces are being done that way now." Mixing and editing were done at Delos International's facility in L.A. using a Sonic Solutions system. ■

Blair Jackson is Mix's executive editor.

PLAYR RECORDING, PHOENIX

SOUND FROM THE SOURCE

Nestled on the edge of the Phoenix Mountain Preserve, Kyle W. Harris' project studio, PlayR Recording, has been up and running in various incarnations since 1992. By combining the best of analog and digital technologies with a passion for acoustic music, Harris has found his niche as an engineer and producer, representing artists who could best be characterized by the Americana/folk music genre.

Working in Phoenix as a bass player since the '70s, Harris began playing sessions in the 1980s and became hooked on the recording process. One of his first clients after opening the doors at PlayR was Irish recording artist Matt Manning, who was accompanied by famed Irish music producer (and author) P.J. Curtis. According to Harris, "Everything I know about making a record is thanks to P.J. Curtis, an artist in the true sense of the word. He taught me to value performance more than perfection and to give the artist the most comfortable space possible to create in."

The heart of PlayR's sound is a strong analog front end that starts with a matched pair of Lawson L47 tube microphones, a pair of Avalon VT-737 mic pre/compressor/EQs, and a Trident Model 24 24-channel, 24-bus console. "My goal from the beginning has been to assemble gear with analog warmth and accuracy on the front end and to combine it with the ease and convenience of digital mixing and editing," says Harris.

After trying several different DAW configurations, Harris installed E-mu/Ensoniq's PARIS (with 16 channels of 24-bit A/D) saying, "The PARIS converters are the reason to go to PARIS. It sounds more like analog tape than any other DAW I've tried to date." When not using PARIS for the A/D conversion, a Mytek Workstation 20-bit AD/DA interface is used.

And, while Harris loves the sound of the Trident, he's found himself mixing in PARIS more often than not. With very few exceptions, once the tracks are in the digital domain, they stay there.

The monitoring is provided by a Klein & Hummel 096 powered three-way system, Dynaudio PPM2 and Chameleon A2 amplifier, with an Auratone Super Sound Cube reference.

Unlike most project studios, the absence of MIDI modules, sequencers and samplers in PlayR's arsenal is too obvious to ignore. Harris states, "Working in acoustic music, my focus is primarily on capturing the performance and interaction between the musicians. To date, my clientele has not expressed any interest in using MIDI synthesizers or samplers, opting instead for a more organic sound and feel in the music." In 1999, several of PlayR's clients began to receive national airplay and favorable reviews from both *Performing Songwriter* and *Sing Out!* magazines.

But it's not all about folk music, as Harris has pulled in a range of artists. One of his favorites was D Squared, whose second album, *Big Sky Full O' Dumb Stars*, was tracked and mixed at PlayR. "That project represented the ultimate convergence of artist, songs and technology," he says. "The difficulty in recording this project was in balancing the fragility of their sound [harp and guitar] with the power of their lyric. *Big Sky Full O' Dumb Stars* is a song cycle representing the personal cosmography of Don Charles and Deb Gessner. This project was one of those rare moments where everything came together and allowed me to capture the magic of this unique duo.

"Also, Lee Hazelwood dropped a very unique project into my lap," he continues. "We recorded three new songs and then married them to a collection of 19 previously recorded demos representing over 30 years of Hazelwood's career. The tracks consisted of vocal and guitar duos up to fully produced master tracks, all of which featured studio legend Al Casey on guitar. The album is called *22 Demos and 1 Tattoo*."

Though his tracking room is fairly small, it hasn't stopped Harris from getting a good rhythm sound. "It's all about the living room," he laughs. "The family gets temporarily relocated upstairs, and that opens up about 1,000 square feet of recording space. Using a combination of ASC Tube Traps, Sonex baffles and converted office dividers, I'm able to create a viable recording space—in addition to the isolation booth."

And, as he says, you know you have a project studio when you have..."dogs, semi trucks and aircraft. Our Australian Shepherds, Django (Dogheart) and Sadie, have added unsolicited, unscheduled backing tracks to more than one record."

Kyle Harris can be contacted by e-mail at playr@qwest.net and on the Web at www.geocities.com/playr_rec. ■

Ron Simpson is a freelance writer and Web audio technologist based in Phoenix, Ariz.

BY RON SIMPSON


"If you are considering a career in the entertainment media industry, I think there's only one choice. With the way technology is moving and the speed at which it changes, Full Sail is the only school that I've ever seen or heard of that consistently remains so up-to-date. It's a place that approaches education right - by getting your hands on the world's most current technology."
-Steve Vai
GRAMMY®-award winner Steve Vai at the Neve Capricorn console in Studio C - one of Full Sail's 37 production studios.
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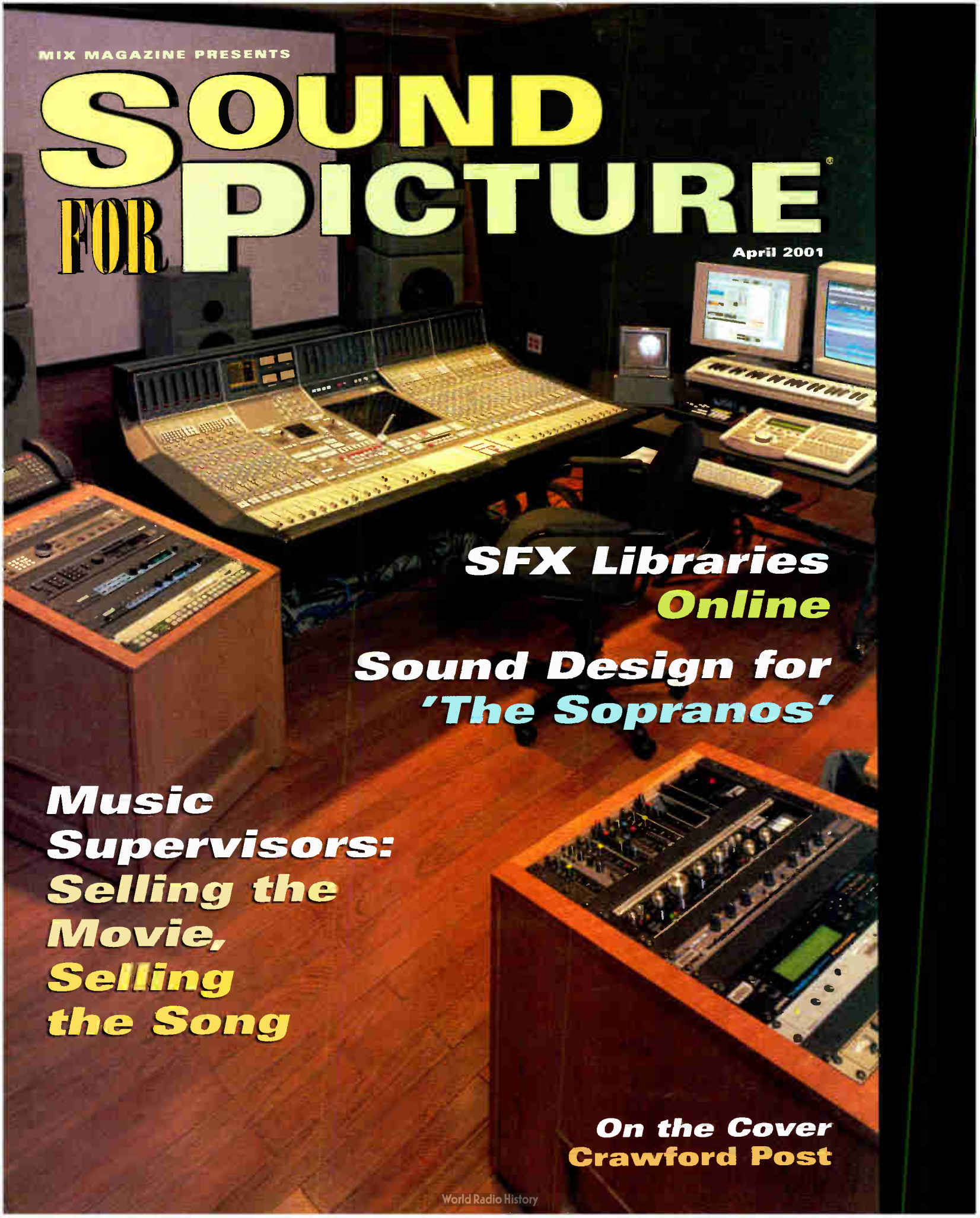


Mary J. Blige and George Clinton funk it up with "Atomic Dog"

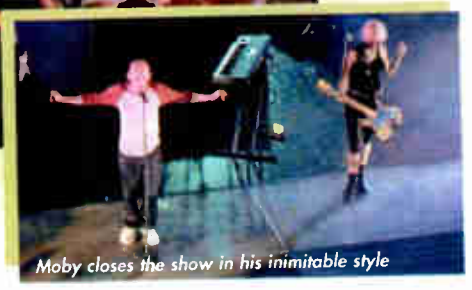
Big Music for the

Carlos Santana and Rob Thomas play it "Smooth"

Blues master B.B. King jams with Phishman Trey Anastasio

PRODUCTION PHOTOS COURTESY IMAX
CREW PHOTOS JON SHAPIRO

The Roots supply a hip hop groove for the B.B.-Trey jam



Moby closes the show in his inimitable style

Biggest Screen

IMAX Film Showcases Rock Legends, Today's Superstars—Up Close and Live!

By Tom Kenny

There's a point near the beginning of *ALL ACCESS: Front Row. Backstage. LIVE!*, the new IMAX film debuting this month, where Sting recounts a meeting years ago with Miles Davis. "You're the one with the big head," Miles told him. "I saw you in that movie. Your head filled the whole screen." It gets a puzzled look from Sting and a big chuckle from the audience. Just imagine if Miles had been around to see Sting seven stories tall onscreen, playing live to an audience of 10,000, in multichannel playback.

Mark Wright, Jon Shapiro and Elliot Scheiner

With all due respect to the Rolling Stones, who pioneered the music-for-IMAX genre on their Steel Wheels tour in 1991, *ALL ACCESS* is the ultimate in music-driven movies—large-format, stunningly clear visuals, 12,000 watts of 6.0 channel digital sound, multiple performers. For the artists, it provided a chance to showcase their live talents to an extended fan base and to be a part of the permanent record. For music fans, many of whom often sit in row ZZ, it's a chance to get up close and personal, to get as close to the coveted All Access pass as many are likely to get.

ALL ACCESS is the brainchild of Jon and Peter Shapiro, a couple of brothers with a passion for music and film. Jon, a self-described studio rat since age 14, when he assisted Ray Bardaini at Minot Sound, White Plains, N.Y., went to Northwestern University's Film School in the late '80s, then on to Hollywood, where he produced, among other projects, *Richie Rich* in 1994. Peter, a film producer who has put out numerous documentaries, including *Tie-Dyed* and a portrait of Ken Kesey, today owns the venerable music club Wetlands Preserve in New York City. "I had a music production background and went into film, and Pete had a film background and went into live music," Jon Shapiro says. "We had this interesting mixture where he put his chocolate in my peanut butter."

About two years ago, the Shapiros began thinking about bringing the energy of live performance—with multiple acts—to the IMAX screen. Jon had become enamored with the format when, as an 11-year-old, his parents took him to the Smithsonian to see the pioneering IMAX film *To Fly*. He followed the development of the format, and as the technology advanced, he saw the opportunity to showcase music as no film had.

"We wanted to give the audience an All Access pass to these unbelievable performances, taking them backstage, somewhere they can't go. Much like *Everest* took you to the top of Everest. Much like other IMAX films that take you to outer space or swimming with sharks, all things you can't do in normal life. The Stones did the performance aspect incredibly well, and I love the movie. They went for scope. But we wanted to do something different. We wanted to give people a more intimate experience, where they really feel like they are front row, or backstage, or behind the stage."

THE LINEUP

The Shapiros first approached IMAX in early 1999, and the initial reaction was something along the lines of: Are you guys crazy? You've never made an IMAX film, and you'll never pull this one off without label support. "So we took their advice and went ahead anyway," Jon Shapiro laughs. "But we did tell them that if we made the film, they would distribute it, because they have the prowess and the name brand."

Because they did not want label influence, the Shapiros next drew up a wish list of artists and began approaching them individually, using the IMAX experience as a selling point. It proved a relatively easy sale.

"We knew that we wanted multiple acts, and we also knew that we wanted different generations paired up in unique ways on a song that would never be repeated anywhere else—ostensibly a pairing of a mentor and a

At Presence Studios, front to back: Elliot Scheiner, Peter Shapiro, Jon Shapiro and co-producer Kelly Knight

First, the Music Mix

Renowned producer/engineer Elliot Scheiner was brought on the project as an audio consultant and mixer for the entire ALL ACCESS project. Producer Jon Shapiro was a fan of Scheiner's work on many classic albums over the years and learned that he was the reigning guru of surround sound. "We wanted him as a part of the Dream Team we assembled for the film, and he was equally interested in what we were doing," Shapiro says. Scheiner mixed the tracks at John Russell and Katherine Lombard's Presence Studios in Westport, Conn., in a room he's come to call his 5.1 home, because he loves its sound—its accuracy—and he loves the VR Legend console. But he was also involved on location.

"You are very limited when you are on a stage with what you can do in terms of 5.1," he says. "You can't put up a tree around the drums necessarily. Obviously, the 5.1 field was going to come from the mix and not from the recording, except in terms of the ambience. There had to be at least 30 ambient mics around the room. It was pretty cool.

"It is contrary to the way the movie looks, but the cameras are constantly moving, so I took a lot of creative license with how I wanted to mix things," Scheiner continues. "In Santana's band, the horns are on the right, if you are looking at them, yet I put them in the center rear. For me, the object wasn't to re-create how it would look onstage, but just to create a feeling you would get if you were on the stage."

—CONTINUED ON PAGE 66

Bottle™ PRODUCTION 2000

A classic modern vacuum tube microphone made the old-fashioned way, without compromise. In every industry – cameras, automobiles, audio, and more – there are a handful of small companies reputed for a rare blend of scientific precision and artistic passion. You know who these artisans are; their trademarks are synonymous with the ultimate in hand-crafted perfection. Our flagship "The Bottle" microphone parallels this vision, representing BLUE's highest achievement in quality and innovation. The Bottle is a precision recording tool, combining the low noise and superb transient response of top-grade electronics with the sonic magic of legendary vintage vocal microphones. The Bottle is not simply a microphone, but a fully featured microphone system with eight optional interchangeable capsules. In an instant, these bayonet-mount capsules can be exchanged to provide different tonal characteristics and pickup patterns, while the power supply is still turned on!

INCLUDED ACCESSORIES

BLUE #9610 Power Supply
ATA Flight Case
Blue B6 Cardioid capsule
Champagne Tube Microphone Cable ™

TECHNICAL DATA (w. B6)

Acoustical operating principle	Pressure gradient
Directional pattern	cardioid
Frequency range	20Hz–20KHz
Sensitivity at 1 kHz into 1 kohm	20mV/Pa
Rated impedance	200ohms
Rated load impedance	not less than 1khoms
Weight & Dimensions	1700 g 390x90

Bottle™ PRODUCTION 2000

Like the mics of yesteryear, the Bottle canister is not just for looks, but also holds a small fortune in precision electronics. The internal circuitry of The Bottle is thoroughly modern, of course, with an amplifier design utilizing a single hand-selected vacuum tube pentode EF86 in triode mode. The tube circuit is Class A and fully discrete. To this end, The Bottle utilizes electronic components of the highest quality (such as expensive metal-film resistors and a large custom-built transformer), and there is no pad or low-cut filter switches in the microphone circuit. In short, this is a signal path of the highest possible quality, allowing the user to get the maximum benefit out of the unprecedented capsule selection created by BLUE. The Bottle is finished in a luxurious blue lacquer paint with other colors available by special order. Additional capsules are available from your pro audio dealer.

OPTIONAL CAPSULES

"The Ultimate Big Vocal Sound"
B0: Cardioid large diaphragm single backplate.
"The Accuracy Plus Capsule"
B1: Cardioid small diaphragm.
"The Vintage Capsule"
B2: Figure of eight large diaphragm.
"The Neutral Capsule"
B3: Cardioid mid-sized diaphragm.
"The Big Omni"
B4: Perspex Sphere Pressure omni small diaphragm.
"The Presence Omni"
B5: Pressure omni large diaphragm.
"The BLUE standard – The Modern Presence Vocal Sound"
B6: Cardioid large diaphragm dual backplate.
"The Clasical Vocal Sound"
B7: Cardioid large diaphragm single backplate.

Cactus™ PRODUCTION 2000

At BLUE, quality is the driving force behind our company. We explore all aspects of design and manufacturing to take what we know to the next level, In this day and age there are host of possibilities to reap from. What we know from the past and what we have available to us today is astounding. Of course fusing this is not easy. This process is difficult but in the truest sense the most rewarding. Our respect to this philosophy is represented by the Cactus Tube Microphone. A blend of the past with the cutting edge of the future. With detailed information in the midrange area and a soft silky response in the top end, the Cactus fills the need of detailing and mellowing the program material. The amplifier design is based on a single vacuum tube sub-miniature pentode in a triode mode. This tube is hand-selected by BLUE personnel for low noise performance. The BLUE power supply for The Cactus Mic is based upon our 9610 model and features a sophisticated, regulated circuit design. A unique slow-start feature prolongs and protects the valuable tube life.

INCLUDED ACCESSORIES

BLUE #9610 Power Supply
ATA Flight Case
Series One Shockmount/Pop Filter
Our top end shockmount and pop filter assembly, unique in design and great in performance.
Champagne Tube Microphone Cable ™

TECHNICAL DATA

Acoustical operating principle	Pressure gradient
Directional pattern	Multipattern
Frequency range	20Hz–20KHz
Sensitivity at 1 kHz into 1 kohm	18mV/Pa
Rated impedance	150ohms
Rated load impedance	not less than 1khoms
Weight & Dimensions	800 g 250x50x30

Supply Cables

No other commercially available tube mic power supply offers the unique features of the BLUE model 9610. To assure the longevity of the vacuum tube and the stability of the tube microphone circuitry, BLUE has developed the 9610 power supply with the new SOFT START feature.

Blueberry Cable ™
A two conductor 22Awg cable using only BLUE's virgin proprietary materials. The twisted pair construction eliminates any noise caused by electromagnetic interference emanating from equipment used in the studio or stage environments.

Cranberry Cable ™
A rugged two conductor 20Awg twisted pair mic cable using BLUE's virgin proprietary materials. This cable is the perfect compliment for any type of radio, TV, or sound reinforcement applications. The twisted pairs reject any electromagnetic interference.

Kiwi Cable ™
The ultimate in quad mic cable design, the Kiwi cable uses BLUE's hand picked virgin proprietary materials. The quad design gives the cable an advantage when trying to achieve the highest quality recording where exquisite tonal quality is the utmost.

Champagne Tube Microphone Cable ™
BLUE Champagne is a microphone cable with a "sky's the limit" capability. The cable's design incorporates a complete seperated shielded mic signal path to achieve fullest transparency and deep seamless clarity.

"In only ten years, Baltic Latvian Universal Electronics has estabilished itself as one of the premier microphone builders in the world... with its innovative design and superb construction, the Dragonfly is not only worthy of a design award, but it may very well inspire singers to new heights... "

Electronic Musician

"The Blueberry had the same high level of craftsmanship as its big brother, The Bottle, with a clean circuit layout and an impressive-looking capsule.Our first session with The Blueberry was a male vocal, and we liked the sound of The Blueberry right away. On piano, The Blueberry was one of the few mics we've used that sounds more like music and less like a microphone. Transient response was excellent. The Blueberry is a very good, all-around microphone with excellent construction. Most studios would find it useful in many situations, and it's priced reasonably enough that they won't have to break the bank to buy it."

Steve La Cerra EQ magazine

"Not surprisingly, studio engineers covet the Bottle's sound and sensitivity."

Wired Magazine

From the Critics

The development and production of microphones is viewed as an artistic endeavor at BLUE. Our designs have been recognized not only by the professional end user but by the recording industry, architectural, high end audio and cutting edge publications throughout the world.

"To put it simply, the manufacturing quality of the Mouse is the best I've seen in 30 years. You should hold in your hands something that's as well made as human hands can craft. The industrial age hasn't produced many of these – Leica cameras, Ampex reel to reels, the Mouse belongs in that company; it's work of machine age art masquerading as a microphone."

Paul J. Stamler, Recording Magazine

"BLUE has always been an innovative company that does things differently." "The construction and workmanship are impeccable, and the parts used throughout are of the highest quality."

George Petterson, Mix Magazine

"With the Dragonfly, BLUE has produced a real winner, and contributed greatly to the personal studio recordist's quest for high-quality sound and hip style at an affordable price."

Brian Knave, Electronic Musician

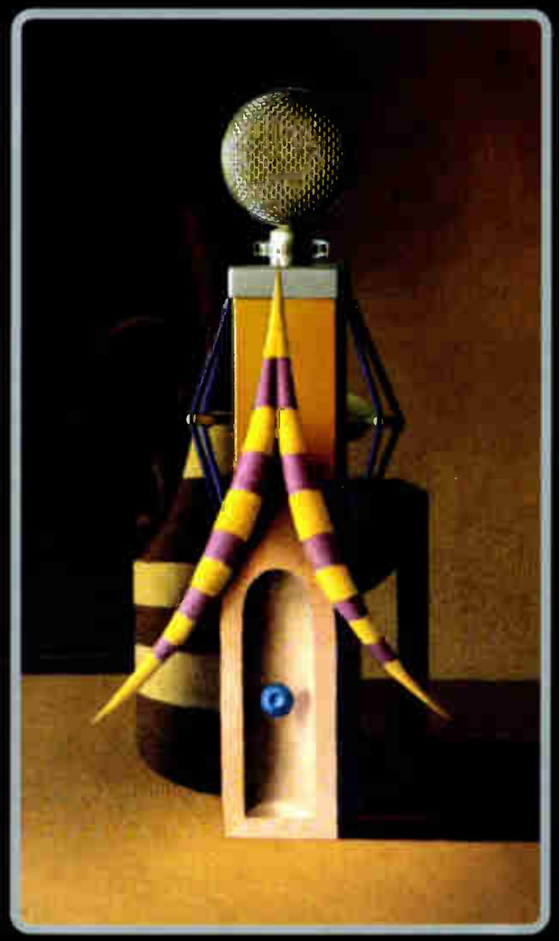
"We're talking the difference between Chevy and Rolls here! Never before have I seen such a beautifully built microphone and power supply."

Dr.Fred J. Bashour, Pro Audio Review

"But the loveliest things on the A.E.S. main floor were the creations of Baltic Latvian Universal Electronics (BLUE)." "It's microphones are stunning examples of Machine Age industrial art, deserving of a place of honor at San Francisco's Museum of Modern Art."

Stereophile

FOR THE USERS LIST OF BLUE PRODUCTS VISIT WWW.BLUEMIC.COM



Dragonfly™

PRODUCTION 2000

Complete with an integrated elastic shockmount, The Dragonfly electronics are based on a class A discrete circuit, with a transformerless output. The result: what you hear is what you get! The Dragonfly's overall sonic character is neutral and always pleasing to the ear, making it an ideal microphone for recording vocals, drums and percussion, electric guitar, bass, and any acoustic instrument including "difficult" sources like saxophones and stringed instruments. The Dragonfly is a pressure-gradient cardioid condenser microphone, employing the BLUE single-membrane large diaphragm capsule. For this hand-crafted diaphragm we have selected a 6-micron mylar film, sputtered with a mixture of pure gold and aluminum. Enclosed within a rotating spherical grille, the capsule can be positioned and adjusted in the smallest of spaces. This innovative design offers fine-tuning and precise placement to please the most discerning recordist. The Dragonfly comes protected in a vintage styled linen microphone box embossed with a silver BLUE Logo.

A matched set of Dragonfly's can be specially ordered directly from BLUE. These uniquely colored mics are finished in a luxurious green lacquer with gold accented trim and housed in handmade cheerywood boxes.
Manufactured on a limited-edition only basis, please contact BLUE directly for more information.

TECHNICAL DATA

Acoustical operating principle	Pressure gradient
Directional pattern	cardioid
Frequency range	20Hz–20KHz
Sensitivity at 1 kHz into 1 kohm	21mV/Pa
Rated impedance	200ohms
Rated load impedance	not less than 1khoms
Weight & Dimensions	630 g 165x60

Blueberry™

PRODUCTION 2000

Named Microphone of the year by Electronic Musician for 1999. The Blueberry consists of a Class A discrete transformer based microphone amplifier perfectly chosen to our single pattern, cardioid, handbiult large diaphragm capsule. First and foremost, the Blueberry has been designed to provide the commanding, intimate presence associated with the world's best (and most expensive) vintage vocal microphones. With its shimmering, detailed highs, smooth midrange, and minimized proximity effect (a bass boost inherent in all unidirectional mics), the Blueberry excels at delivering a vocal right to the front of the mix where it belongs. When processed with limiting and/or compression, as is standard practice for most pop vocals, tracks recorded with the Blueberry will be free of pumping, low end thumps. Acoustic guitar, hand percussion, drums, and other critical high end sources also shine in front of the Blueberry, gaining an extra measure of presence that enables the most delicate sounds to cut through a mix, even at very low levels. The Blueberry has been designed to fill the needs of the home musician and professional alike.

OPTIONAL ACCESSORIES

Series One Shockmount/Pop Filter
Our top end shockmount and pop filter assembly, unique in design and great in performance.
Series Two Shockmount
If a pop filter is not required, we offer a budget shockmount that delivers the same performance.
Blueberry Cable ™

TECHNICAL DATA

Acoustical operating principle	Pressure gradient
Directional pattern	cardioid
Frequency range	20Hz–20KHz
Sensitivity at 1 kHz into 1 kohm	20mV/Pa
Rated impedance	150ohms
Rated load impedance	not less than 1khoms
Weight & Dimensions	520 g 235x50x30

Mouse™

PRODUCTION 2000

The Pop Filter

The Shock

The Mouse microphone amplifier consists of top grade quality components such as polystrene capacitors and metal film resistors. The single pattern, cardioid handbuilt capsule, manufactured in our Latvian factory uses only the highest quality mylar film and is sputtered with a special mixture of 24 karat gold (99.99%) of absolute pure quality and aluminum. The microphone capsule is shockmounted in two areas, internally in the grill assembly and within the rotating grill armatures. The Mouse is available with two different output circuitry's, transformer and transformerless. The main difference between these designs is that the transformer based Mouse allows the user the option to run extra long mic cables for special applications and provides the user with the utmost protection for outside interference such as radio type frequencies (RF). These models are also designated by their difference in body color. The transformer version styled in matte black and the transformerless finished in a dark royal blue.

OPTIONAL ACCESSORIES

The Pop Filter
A vintage look, for a modern microphone. A handbuilt stainless steel pop filter.
The Shock
Provides additional protection from unwanted low end and adds extra positioning to the microphone.
Cranberry Cable ™

TECHNICAL DATA

Acoustical operating principle	Pressure gradient
Directional pattern	cardioid
Frequency range	20Hz–20KHz
Sensitivity at 1 kHz into 1 kohm	21mV/Pa
Rated impedance	150ohms
Rated load impedance	not less than 1khoms
Weight & Dimensions	980 g 165x65

Kiwi™

PRODUCTION 2000

All of us are unique in our own ways. Our personalities and facial features let us stand apart from one another. At BLUE our goal is to achieve individual personalities for each of our microphones. Our top of the line Class A Discrete model, The Kiwi delivers just that. Capsule patterns of Cardioid, Figure of 8, Omni and selections in between for a total of nine different choices. This is achieved in a careful, unique manner using our BLUE double backplate capsule. These unique capsules are measured in the anechoic chamber for the optimum performance. Mounting of the Kiwi microphone capsule to the amplifier is provided by our mold injected rubber stem to help isolate unwanted rumble. Included with the Kiwi microphone is The Shock. Additional protection from low end rumble is provided by this elastic spider type shockmount. The Kiwi provides recordists with many options for the most critical of all recordings.

OPTIONAL ACCESSORIES

The Pop Filter
A vintage look, for a modern microphone. A handbuilt stainless steel pop filter.
Kiwi Cable™

TECHNICAL DATA

Acoustical operating principle	Pressure gradient
Directional pattern	multipattern
Frequency range	20Hz–20KHz
Sensitivity at 1 kHz into 1 kohm	19mV/Pa
Rated impedance	50ohms
Rated load impedance	not less than 1khoms
Weight & Dimensions	900 g 220x60

Latvian

Founder of BLUE, Martins Saulespurens, at work in anechoic chamber in Riga, Latvia.

Founder of BLUE Skipper Wise with The Mouse.

BLUE microphones are more than just a recording tools...they are investment in value, quality, and expression. You will display them for their artistic beauty, covet and protect them for their investment value, and treasure them for conveying the heart and soul of any music recording.

BLUE stands for "Baltic Latvian Universal Electronics" – and for the ultimate in quality! Our work speaks for itself. You'll find BLUE microphones are beyond compare as a valuable investment and unsurpassed as a musical production tool. BLUE has its own facility located in Latvia (one of the Baltic states, located outside Russia). At BLUE, we are not interested in cost-effective mass production, which could jeopardize the design quality of our tube and solid state microphones and related products. We design and manufacture all capsules – the heart of the microphone – as well as precision parts, from the smallest screw to the large body shells used for our "Bottle" microphones. We've researched the needs of engineers and musicians alike, to create an exceptional collection of microphones. What makes BLUE microphones so unique, and so valuable?

BLUE microphone capsule assembly.

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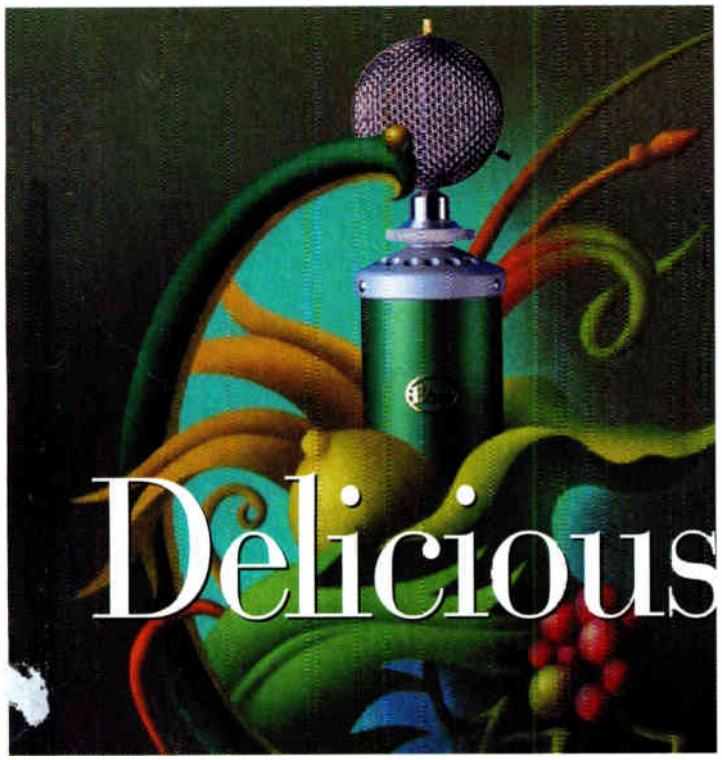

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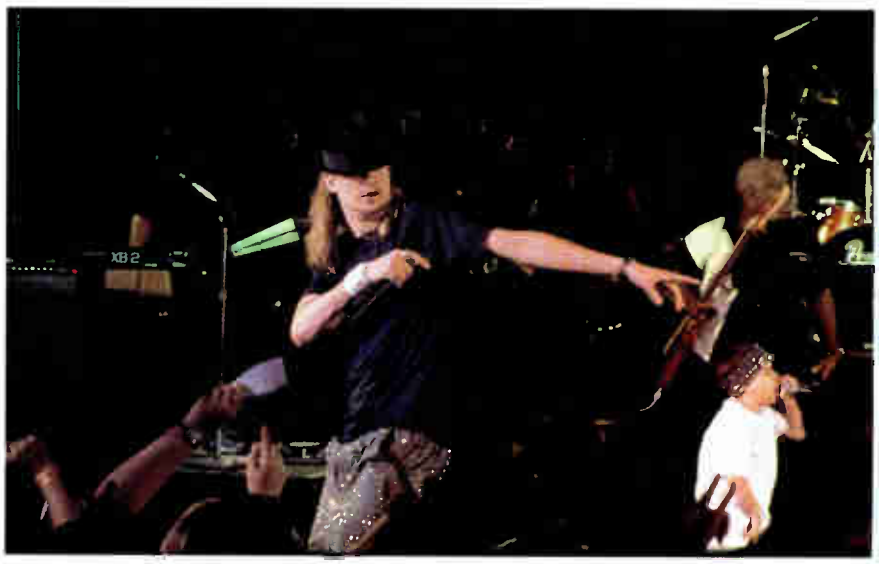
protégé," Shapiro explains. "We first went after the legends. Our first call was to Carlos Santana, then Sting, then B.B. King, then George Clinton. To our surprise, Carlos indicated interest immediately. This was right before his star started to shoot through the roof with *Supernatural*. To his credit, and to his manager's credit, he stuck with it throughout. We filmed Santana's performance of 'Smooth' with Rob Thomas the day after they won all those Grammys. The energy and the magic in that room...it was the pinnacle moment, I thought, of everything that had happened to him, not only with the past year, but his career, and you'll see that come across in the film."

After Sting, George Clinton and B.B. King signed on, the Shapiros started going after the next generation and pulled in Sheryl Crow, Dave Matthews Band, Mary J. Blige, Kid Rock, Macy Gray and Moby. For King's performance, they went three steps deep.

"Pete knew this jam-band scene from his club," Shapiro says. "He thought it would be great to get Trey Anastasio, the lead singer of Phish, then back them up and supply a groove with The Roots, a Philadelphia hip hop band. So we have this intergenerational, intercultural blend, where we took B.B.'s classic blues standard 'Rock Me Baby' and did a jam band, hip hop version of it. None of them had met before they performed in the movie, and the chemistry is just fantastic."



Kid Rock brings the energy with "BAWITDABA"

THE VENUES

The logistics of putting together what are essentially unique one-offs of A-list

—FROM PAGE 64, MUSIC MIX

Scheiner elected to go after a "truly aggressive surround sound mix," as opposed to what he described as a "typical movie mix, where basically all you have in the surrounds are reverbs and effects. I hard-panned things in the rear. If I had a mono piano, it might be hard left rear. A guitar track might be hard right. Sometimes horns got panned hard to the rear. This wasn't a stereo mix with reverbs in the rear or coming out from the front and having reverbs further back. This band was totally surrounding you.

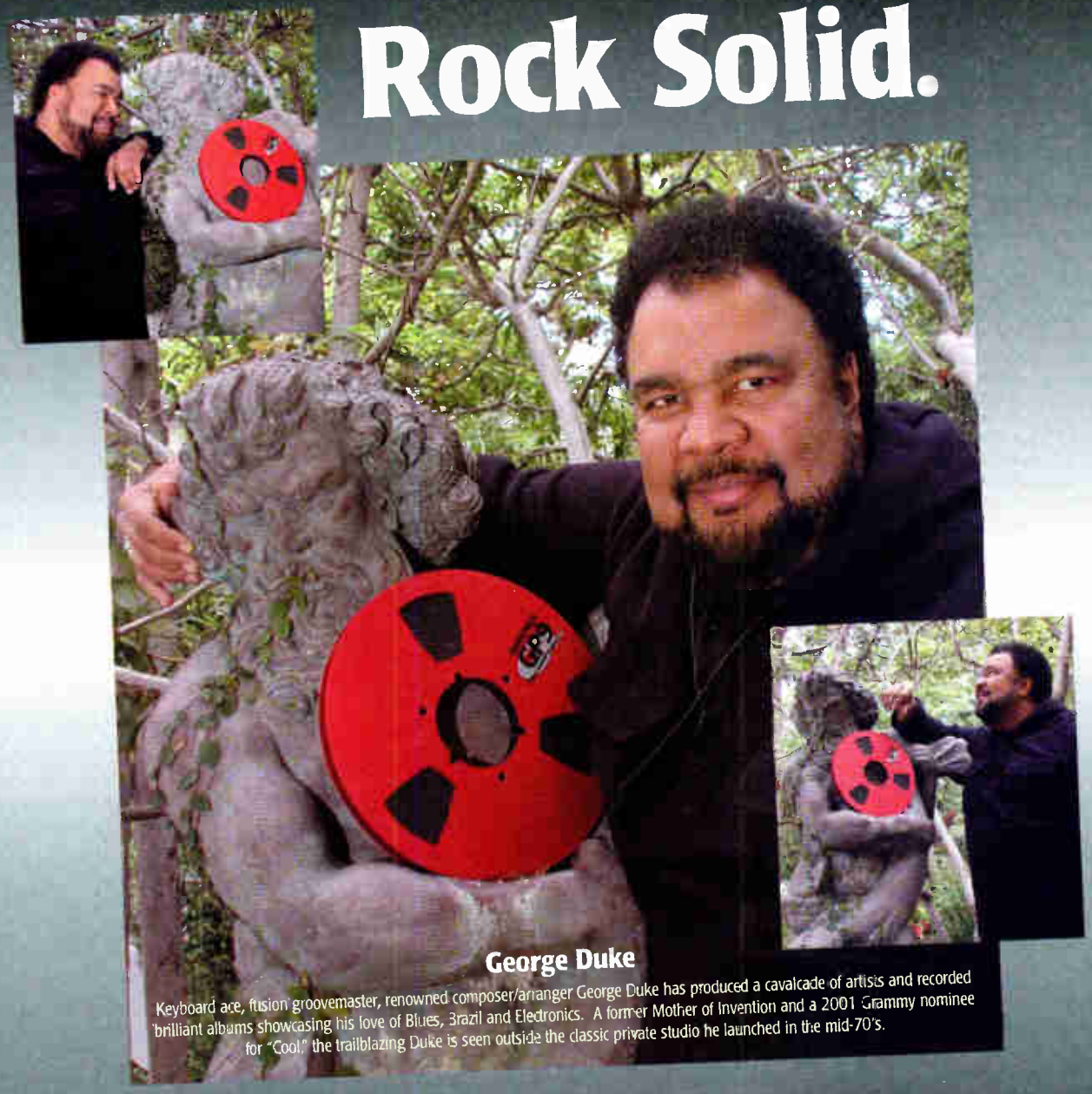
"I've always felt that, even in a home situation with a home surround theater listening environment, you don't have to be perfectly on-axis to hear the music," he continues. "With stereo, how many times do we stand outside the speaker range and hear the music perfectly fine? It is the same thing with surround. You can stand outside the theater and still hear the music perfectly well. You might not hear the placement of the panning, but you hear the music fine. Once you get into the arena, if you walk over to the left surround, it is like walking to that player, so you hear him a little better. When you are in a rehearsal and you are standing in the middle, you might walk over to a player to hear what he is playing. That is basically what this is."

Though IMAX is a 6.0-channel format, Scheiner delivered finished 5.1 mixes, as stems, to Mark Wright at CBC Toronto for the film mix. "I went up to Canada to hear what they were doing and this guy was really great," Scheiner says. "He remained so true to what I had done, and he kept everything where I put it. He didn't move a thing. I've sat in the IMAX Theater and listened to it, and it is awesome to hear this thing in a theater."

—Rick Clark

Jon Shapira, left, with Elliot Scheiner at the Neve VR Legend at Presence Studios

Rock Solid.



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talent seems staggering. To accommodate schedules, the majority of the shoot took place in the Grand Olympic Auditorium in downtown L.A., near the Staples Center, where the 2000 Grammy Awards were being held. The idea was that most of the artists would be in town and could drop in for on-camera interviews and a few performances during the following week.

The Grand Olympic, built in the 1920s, seats about 8,000, but the Shapiros brought in their own production design and knocked it down to about 1,000 capacity, "to create the ultimate club vibe." The audience was let in free of charge, and they literally are right up on the stage—front, back and sides. The design was optimized for a five-camera shoot, with Steadicam and a new development, the IMAX-compatible TechnoCrane. Mics were hung all over the venue, including the hallways, to get that thump-y bass sound all concertgoers recognize. The shoots at the Grand Olympic were recorded to Sony 48-track digital by Guy Charbonneau of Le Mobile Recording.

Three other venues provide a backdrop for the film. Sting, performing "Desert Rose" with Cheb Mami, was

PHOTO: JON SHAPIRO

Director of Photography Rodney Taylor and Elliot Scheiner prep Sheryl Crow for her solo performonce at Sony Music Studios

filmed at the PNC Bank Arts Center in Holmdale, N.J., in front of 10,000 people. The Dave Matthews Band, with Al Green, was shot at Soldier Field in Chicago, in front of 60,000. Both were recorded by David Hewitt of Remote Recording Services, again to 48-track digital. Finally, Sheryl Crow, in what was presented as an artist in rehearsal, was shot on the biggest soundstage at Sony Music Studios, New York City. It's just her on a stool with a guitar performing "If It Makes You Happy," recorded by Elliot Scheiner. The performance is breathtaking.

Scheiner, who came aboard on a recommendation from Sting's manager, Miles Copeland, was actually involved in the project front to back. He sat in the remote trucks for the recordings, took the tracks back to Presence Studios in Connecticut (see sidebar), and mixed the songs in 5.1 and stereo for DVD and CD release. He then delivered stems on DA-88 to Mark Wright at CBC Studios Toronto for the final film mix.

THE IMAX MIX

Mark Wright's background is in music recording, but he got involved with IMAX back when he put together the trailers for the *Rolling Stones at the Max*. He has since mixed *Fires of Kuwait*, *Africa: The Serengeti* and many others, the most recent being the immensely

popular *Cyberworld 3D*. He, too, got involved early on in the process, visiting the venues and offering suggestions for the interview footage, as well as meeting with Scheiner to discuss surround concepts and stem delivery, which is common in the film world, though not in music mixing.

"Stem mixing was very important so that we could have some flexibility in the film mix as we worked against the visual," Wright explains, pointing out that the IMAX format, while 6-channel, does not have a discrete subwoofer. "Elliot has a style of mixing that is brilliant for 5.1—very dynamic, very engaging and very surround. We wanted to take that forward and apply it to the film mix, where, besides the visual, you have to worry about the volume of the room, the playback curve and the calibration of different-sized IMAX theaters."

Impressed by the fidelity of the original recordings and the quality of Scheiner's music mixes (which included effects), Wright admits that he didn't do much in the way of treatment or remixing. Mainly, he supported the visuals and played with perspective and transitions.

In the Remote Recording Services truck, Elliot Scheiner, center, with his son and assistant Mathew, left, and mobile assistant

"We would have, say, a basic rhythm stem mixed in 5.1, then a guitar stem separate from the band stem, then a vocal stem, then a sync audio stem with room mics and crowd," Wright explains. "Then, depending on the song, we might have a background vocal stem or keyboard collages—that gave us the flexibility. On Santana, for example, we had his guitar track separate from the vocal, separate from the band. That way we could add some processing on the guitar, variable to a couple of slides going into solos, which we actually wrapped around the room to add dimension. And when Carlos goes center-image with the mirror effect, that gave us the capability to support the center a bit more with the lead instrument."

"Smooth" served as the test demo to prove that the translation from 5.1 surround to 6.0 IMAX would work. Shapiro, Scheiner and Wright then took a Beta SP version of the Avid output, walked down the street to the Paramount IMAX theater in Toronto, with a 6-track fold-down DA-88 of the stem premix, and ran the segment at show level. It worked beautifully.

Wright then went back to his Neve console at CBC, with Claude Fortier monitoring, and began mixing the entire film, in sequence. Pre-production had called for consistency in sample rates and reference, so they had very

few conversions. The stem material was kept digital throughout the process; with the Otari Universal Format Converter, they were able to go TDIF to S/PDIF. The entire 64-minute film was mixed, again to four stems, to two 48-tracks, with the final filling a single reel of Sony 48-track, 16-bit at 44.1 kHz—the IMAX delivery requirement.

Wright and Scheiner on the final mix for Sting, with Sting onstage at right

Still, Wright did not merely serve as a transfer bay for Scheiner's mixes. He worked on transitions into and out of the interview footage between performances, and he occasionally enhanced the songs to work for the larger venue. Kid Rock, perhaps, provided the best example.

"I really liked the Kid Rock energy; the performance is right on," Wright says. "But for IMAX, Jon and I both wanted something more. We tried some low-bottom, trying to get impact, but we both felt that we had overworked it in a way that wasn't needed. So I tried digging into the audience tracks, and I found a microphone that had quite a bit of P.A. spill in it. I went for some super-lows in that microphone and dialed in a bit of trash, that 2k trash that you can get out of a drum kit—the cymbal and hi-hat. All of a sudden, that was it. Then for the vocal, I did something I don't usually do, where I dug out a bit of the fundamental, around 500 cycles, and pumped that a wee bit to give it its niche in the mix.

"For Sheryl Crow, then, the idea was to feel the power of her acoustic guitar and her vocal—feel the strumming and feel the presence of her voice," he continues. "We did that with just a hint of perspective, where on the longer wide shots, she would be slightly more ambient in her vocal, and then as we come up on a pull-in, we would go a bit dryer so that you have the intimacy. Not in a big way. Subtle and very tasteful."

There were plenty of challenges on the film, mainly having to do with maintaining sync throughout the edit and conforms, a problem that is more noticeable in the large format. (Though Wright has an eagle-eye, noting dropouts down to the frame, he praises Soundmaster's SmartSync system.) The interview footage, where each artist talks backstage about music and influences and the future, were shot 35 mm and blown up. Because the dynamics of the speaking voice butted up against the power of the stage, transitions were crucial and could have presented problems at the mix.

"These artists are in the moment," Wright says of the backstage interviews, which were edited in Soundscape and fired off the DAW on the mixing stage. "They may go very quiet and then get quite expressive. So we have to even out those dynamics, because on a large screen with high SPLs, you don't want quite that dynamic range. In the premix, I would spread it out. I prefer it centered, but then I 'shoulder' it so that in the left and right speakers, the interview dialog will be there but at a lesser level—about 10 dB down. I also delay it very slightly to the left and right."

ENJOY THE SHOW!

From the opening four-minute collage, where the cacophony of preshow setup (rigging, rolling cases, set construction, etc.) is interspersed with a Moby underscore and, again, interspersed with the interview to the show-stopping finale as Al Green walks off-stage at Soldier Field, *ALL ACCESS* is a one-of-a-kind tribute to the power and joy of music. It wonderfully captures that adrenaline rush that accompanies top performers at the top of their game—in a live setting.

"We wanted to grow into this movie," Wright says, "keep it a bit real. At soundcheck, they're not quite on their game as they would be when the crowd is there. It's a bit looser, a bit rawer, so we kept the audio quality that way, too. A little off-mic, a little low-fi. Then we go into the interview and we just pop out—the crowd is there, the fidelity is there, the impact is there. They're on their game, and they just let it hit. It's a great moment, and I like the way the transition worked. That's what it's like when you go to a concert and they're on and they let loose. That's the moment we wanted." ■

Tom Kenny is editor of Mix.

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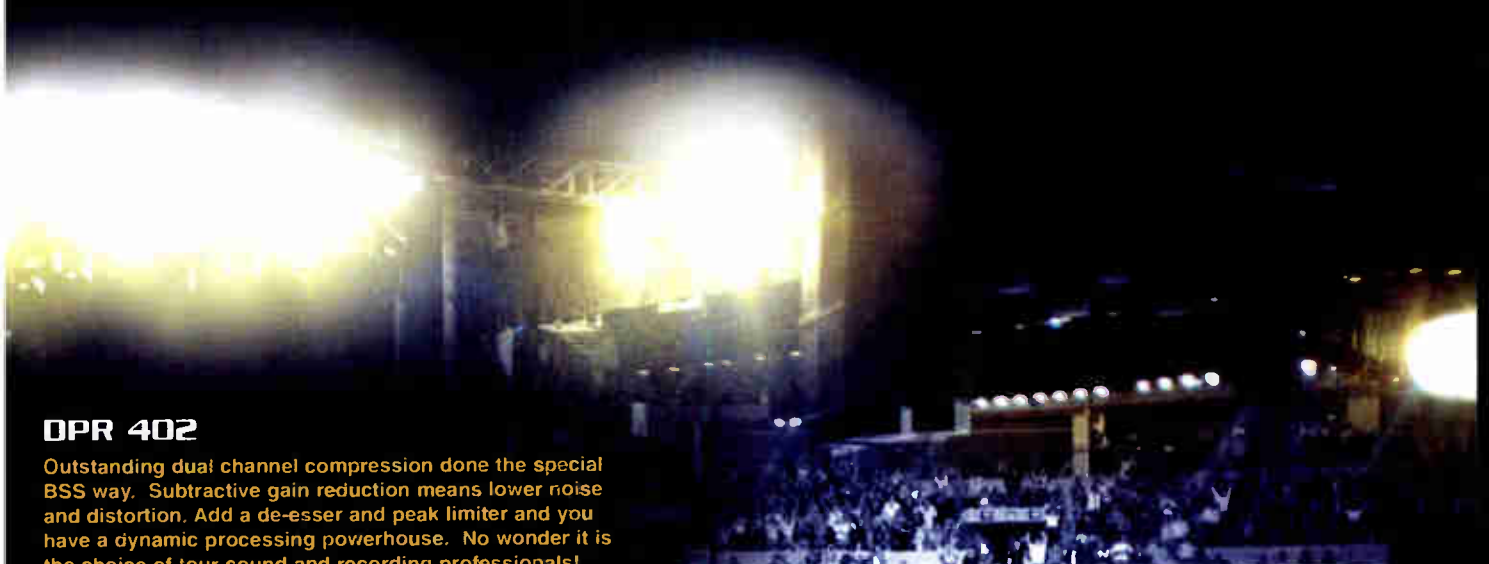

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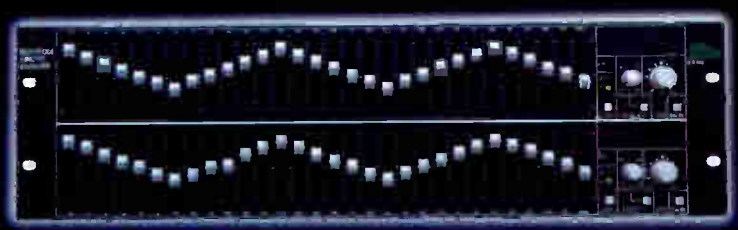

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The Sopranos

RETURNS FOR A THIRD SEASON

The long-awaited third season of The Sopranos debuted March 4, airing back-to-back episodes of the acclaimed HBO series that depicts the complicated life of a modern day New Jersey crime boss who just can't get no satisfaction. In a show where there's something for almost everyone, protagonist Tony Soprano faces problems with his nuclear family, his crime family, and even with his psychiatrist, as he tries to reconcile the multiple roles of Mafia don, husband, father, son, lover and hapless victim of modern life. Weighted with cool music, funky East Coast dialog and real-life issues, The Sopranos is a hybrid between television and film, presented in an over-the-top fashion that somehow, like all art at its best, becomes more real than real.

By Maureen Droney

PHOTO: MAUREEN DRONEY

The mix crew at Todd West (L to R): Todd Orr, effects; Kevin Burns, dialog; and Fred Tator, music.

PHOTOS: BARRY WETCHER/HBO

Key to creating the atmosphere of any show is, of course, the soundtrack, and boldly, *The Sopranos* employs no music composer. Instead, dialog, atmosphere and licensed music interweave to portray the multiple psychological and emotional landscapes that make up each episode.

In January, *Mix* dropped in at Stage 3 at Todd Studios West, a division of Livewire Audio located in West Los Angeles, where another Soprano family, namely the production team, was hard at work. Headed up by producer Martin Bruestle, the crew, many of whom have worked together since 1999's pilot, really do seem to be a family. Having spent the previous two seasons together, they're now working harder than ever on a show that has proven to be not only a hit, but a critical favorite with a fan subculture all its own.

A single viewing of *The Sopranos* quickly reveals one of its most striking production elements: the large number of scenes in each episode. Since it airs on HBO, it is commercial-less, a fact that adds approximately 10 minutes to each show. But, as any fan will attest, in addition to those extra minutes there's just a whole lot going on. "Our first episode this year has 104 scenes," comments Bruestle. "People wonder why we're not on until March, but HBO really does take the time to allow us to get what we have to."

The Sopranos very much continues to be the vision of creator and executive producer David Chase. "David supervises from the script to the final mix," Bruestle says. "He's very sound-savvy, and very involved with selecting the music, along with me and music editor Kathy Dayak. We don't ship the show to HBO until we play the final mix back for him. Often he'll even come up with ideas on the mixing stage."

SOUND AS AN EQUAL PARTNER

Both Bruestle and Dayak previously worked with Chase on television's *Northern Exposure*, a series known for its hip selection of music. "I really believe that sound is 50 percent of filmmaking," Bruestle continues. "You see the picture, but you feel the sound. Sound can take something simple and

The Sopranos

make it extraordinary, and affect people in ways that they don't even realize. *Sopranos* is unique in that it doesn't employ a composer. Instead, all music in the show is licensed, and that dictates a different approach. What we do here is to try to be creative with sound without being gimmicky."

Sopranos is shot on soundstages in Long Island City and in multiple locations throughout New Jersey. "I start on the shows when we do the sound spot with the film editor, the assistant film editor and Anna MacKenzie, the supervising sound editor," explains Bruestle. "We first look at the shows without any music. David likes to look at the shows that way so that he can work on how the story tracks throughout an episode. Gradually, as he's refining the editing, we'll start incorporating music. On this show we don't really have formal music spotting; instead, as we're putting it together, we start to feel where music can live."

The absence of traditional underscore in *Sopranos* seems to endow the music that does become part of the show with extra impact. "The writing is so good that it lets moments play without analyzing where the dramatic beat is," Bruestle says. "Because we're on HBO and don't have commercial breaks, we don't have to create those artificial, act-out-into-commercial moments. We're not committed to having to play themes for characters, or to lead up into commercial; there isn't a format that we have to follow. Instead, we have to create the reality, or unreality, of each character. Sometimes we use different genres of music for that. For example, we had a lot of fun last year with [wife] Carmella [Soprano] always listening to Andrea Bocelli, and then we'd cut to [strip club] the [Bada] Bing, where they're playing something completely different by a band like Bitch Funky Sex Machine or Metallica.

"Generally, we've spent a good deal of time before we get to the dub stage thinking about the music, trying different songs and running things by David," Bruestle continues. "And hopefully they're approved and placed so that we're ready to go with music at the dub stage, except for affecting it with room sound and whatever else we might need to add or subtract from the cue to make it work within the scene. But things can, and do, change on the dub stage."

Supervising sound editor Anna MacKenzie

FOLEY, ADR, BGS

Heavy use of Foley and ADR differentiates *Sopranos* from standard television, as does the fact that there may be picture changes right up until, and during, the mix. "The show is treated like a feature in every aspect except for maybe the time that we get to do it," says supervising sound editor Anna MacKenzie with a laugh. "ADR is extremely important in this show. Often there are a lot of changes and rewrites in dialog that we have to cover with ADR, even on camera lines, which of course makes for more complicated editing."

Sopranos' reality style dictates heavy use of profanity that also makes for more ADR; a "TV" version of the soundtrack must be made that uses replacement dialog for all taboo words. "The TV version hasn't been used yet," MacKenzie notes, "But the HBO delivery requirements are such that we have to prepare for it. We spot and shoot alternatives for each scene—that definitely adds to the ADR."

Sopranos is unique in that it doesn't employ a composer. Instead, all music in the show is licensed, and that dictates a different approach. What we do here is to try to be creative with sound without being gimmicky.

—Martin Bruestle

The amount of work required to create backgrounds for 104 scenes is, obviously, extensive. Over the last two seasons a library has been built to cover the basics of the familiar sets, such as the Soprano house and the cavernous and sonically complicated Bada Bing, where scenes shift from the bar and stage area to the upstairs office, with concurrent switches in the sound and music. But there are always new locations, such as the cemetery funeral scene in the season opener, complete with cranking casket and train-bys. "Not only do the locations change," MacKenzie continues, "but, depending on the episode and what mood we want to create, we will change backgrounds and effects, even in familiar, recurring locations."

All source material except music, which is on DA-88, is delivered to the dub stage on hard drives. Effects are on Pro Tools; dialog, Foley and ADR are on Fairlight.

FILM-STYLE MIX

Generally, a *Sopranos* mix takes three days, two for mixing and one for playback, fixes and printmastering, with mixes being sent for approval via ISDN to Chase, who remains on the East Coast until shooting wraps. The 2001 season was mixed in 5.1 surround on Todd West's Otari Premiere console using DiskMix automation. Three mixers dub each show: Lead mixer Kevin Burns, on dialog and Todd Orr on effects have been with the show since the pilot, while Fred Tator, music and Foley, came onboard this year.

According to Burns, an average scene will contain 24 dialog tracks, eight each of production dialog, ADR and loop group. It helps that each

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fader of the 72-input Premiere has two switchable line sources; if there are more tracks needed than faders available, an A/B switch provides access. Although the show doesn't air in 5.1 yet, that format is currently used for the DVD versions. Twenty-two channels worth of stems are used to create the 5.1 mix, which is then dubbed to a 2-channel printmaster. Why 22? "We only have 24 buses on the console," Burns explains. "I use two of them as reassigns for outboard processing for my dialog and ADR, leaving 22 channels that we can bus to.

Dialog and music/Foley each use six channels for the 5.1 mix, effects uses seven. The three remaining channels include a center, used for production effects or sounds recorded on the dubbing stage, a mono dialog stem and a mono principal ADR stem. "That gives me some flexibility by keeping the production dialog and the ADR separated from group and reverb," Burns explains. "If I have to go in and do fixes, I can do it more efficiently."

LOTS OF MUSIC, NO COMPOSER

Kathryn Dayak on *The Sopranos*

Sopranos music editor Kathryn Dayak worked with series creator David Chase and producer Martin Bruestle on *Northern Exposure* before taking the job of music editor on *Chicago Hope*. When she rejoined the team, signing on to *The Sopranos* for the first season, she found herself in a unique position: music editor on a show with no music composer.

"I think we're likeminded on this show, in that David, Martin and I all feel that underscore, as you usually see it in films and TV, can be a little over-the-top and manipulative," Dayak says. "As in: 'Here's a cue that's sad, so we'd like for you to feel sad.' Sometimes there's much more impact in not trying to tell people how to feel. So there's that aspect of the show. Then, of course, there's the whole reality side, like what music would you hear if you were in a pizza parlor in New Jersey?"

Making licensed music fit a scene can be a complicated process, requiring both technical skill and taste, and involving changes in structure, tempo and timing. For example, take one of those pizza parlor scenes. "Instrumental bridges tend to be friendly to dialog," Dayak notes, "versus the chorus, where if you start listening too much to the music, you might miss the dialog. We just used 'Ain't Talkin' About Love' by Van Halen as a source cue in a pizza parlor. It worked with the locale, and we placed it in a way that when the characters enter the parlor, you hear some vocals so you get what the song is. As they cross and began their dialog, we have it go into an instrumental bridge—now your mind is on the dialog and you don't pay attention to David Lee Roth. Then, we brought in some vocals at the end of the scene when the dialog is finished."

Any time music appears in a scene, no matter how briefly or how distant, it falls under the music editor's domain. "Another thing we do is use musical instruments as walla," continues Dayak. "We've had scenes where there's a violin playing scales in the back of the auditorium. In the funeral scene we just finished for the second new episode, there's an organ playing. We built the organ music on two separate tracks so that when the actors are in the large room we can play it more fully, but when there's a cut to the back room behind the walls, it can be muffled, implying that it's coming from the other room.

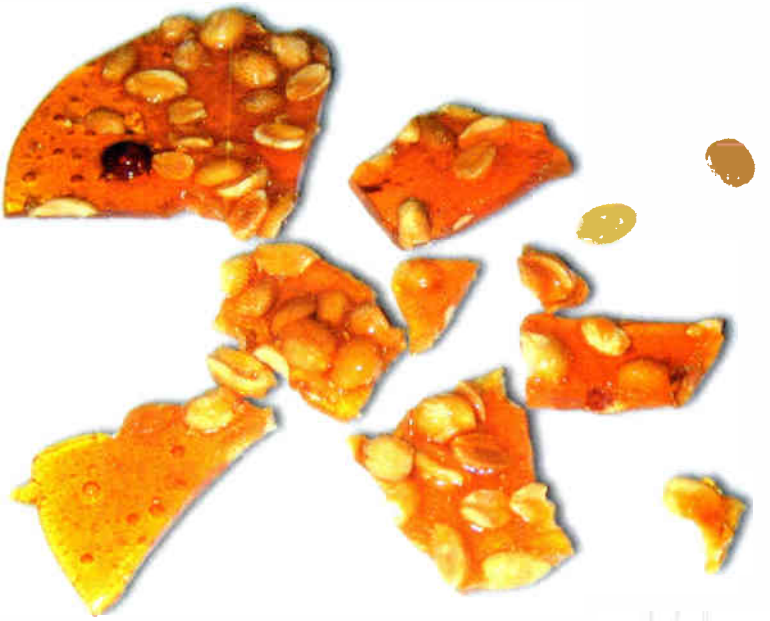
"Also, we like to add little reality bites," she says. "For example our car-bys: If you see cars and you hear rap music coming out of the car, we've put a piece in. Or in the dorm room scenes, the thump-thump of bass drum through the walls—you may not even recognize what piece it is."

Since last season, Dayak has been conveniently set up in the same offices as the picture editors. "That's probably unusual for most TV shows," she admits. "But we've found it valuable, because when the editors are putting cuts together, they might request that I cut a piece of music for them and place it. Then they might change the picture a bit and give it back to me to adjust. We have three editors set up with their assistants, myself and Martin, and we're just two blocks from the dub stage. If something comes up, we can address it and be back to the stage in five minutes."

Dayak has been working in Pro Tools for five years and believes that the system has helped her develop her role in the creative process. "When I started my first jobs as a music editor, it was much less about doing any actual cutting," she relates, "and much more about the secretarial chores of working with a composer. With the advent of Pro Tools, the job has become much more creative. And on a show like *Sopranos*, where there isn't a composer, it's a dream come true. It's great to work with the music digitally and actually

—CONTINUED ON PAGE 78


Kathy Dayak



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The Sopranos

Dialog tracks delivered to Burns on the stage are the original recording with no premixing. Tools he uses to clean, match and add appropriate ambiences to the tracks include Dolby Cat 430s for noise suppression, GML parametric EQ and a Lexicon 480L. "The dialog editor does a great job of preparing the tracks for the mix," he notes.

A favorite effects box, purchased at a pawn shop, is the Metal Machine. "It's an inexpensive guitar distortion box that has some EQ," Burns comments. "On *Sopranos* I've used it a lot in the surveillance scenes, when someone is wearing a wire, to get it to break up. A lot of the new gear will distort but doesn't sound as ragged or authentic, so I use the Metal Machine and a gate to get distortion and to get

—FROM PAGE 76, KATHY DAYAK

cut it to picture as opposed to, 'Okay, start the cue at one second, end the cue at five seconds.'"

While all of the music Dayak uses starts out on 2-tracks, it often expands to many more. "I may have gone out 10, 12 or more tracks to achieve the edit that I like," she explains. "Even cues that sound very simplistic may be out 20 or 24 tracks to make them work tempo-wise, although in the end I'll bus them down to two tracks to give them to our music mixer."

Currently music gets delivered to the dubbing stage on 8-track DA-88, though each episode might make use of three or four separate tapes running in sync. Besides her 24-bit Pro Tools system, other equipment Dayak relies upon includes various musical instruments, which she occasionally uses to add textures to scenes, and the Line 6 Pod, for musical instrument processing. The music itself comes from many sources: Dayak and Bruestle's personal music collections, and of course many cuts are suggested by series creator/executive producer David Chase, who, according to Dayak, has a personal music library and a knowledge of music that are both "immense."

"Sometimes specific songs are even written into the script," she explains. "Or sometimes David will just suggest that we keep a song in mind to be used at some point in some episode. Though we all contribute our musical suggestions, in the end it's David who makes the final approval on what song goes in a scene."

Although no specially composed music has been used so far on *Sopranos*, the sonic envelope of existing songs is getting some pushing, and for 2001's opening episode, Dayak did some particularly creative mixing. "I had a call from Martin who said that David wanted to know if I could combine 'Every Breath You Take' by the Police with Henry Mancini's 'Peter Gunn.'

"I loaded both songs into Pro Tools, started experimenting and found that they were actually very related in key, and close in tempo—close enough that I could work with them," she recalls. "Instead of making a sound collage, I tried to create a piece of music and came up with some demos that I sent to David, who suggested that we try using them as score in the first show. This turned out to be a kind of theme and variations. The first cue acts as an exposition to the audience, displaying what we are doing in combining these two pieces, and the subsequent cues are variations, all derived from the two pieces.

"I think David, Martin and I very much complement each other," she concludes. "I really like contributing to selecting music for the show but it's so great to work as a team on the music, because each of us has something different to offer. Or David or Martin can suggest a song and give it to me, then I can come into play and show them a thousand different ways that it could exist in the scene. Does the instrumental bridge fall over the dialog? Or, maybe we tag the end of the scene with four words from a chorus that are very meaningful. Because besides the choice of the song, it really makes a difference in how the song is prepared, and how it's placed." —*Maureen Droney*

the track to cut in and out randomly."

Effects mixer Orr agrees that developing atmospheres is one of the main sonic challenges of the show. "There's always a new location that needs a new atmosphere," he says. "The music playing in the scene does, in a way, score it, but it always works with the backgrounds—the walla, the clinking if they're in a restaurant, things like that.

"We want a realistic atmosphere that works dramatically with what's happening in the scene, but that doesn't overdo it," he adds. "For example, the way I mix hits and punches when somebody is getting beaten up; I try to make it realistic instead of over the top."

Orr usually works with 24 to 32 tracks of sound effects played back from a 32-track Pro Tools system. His main effects box for reverb and room sound is also a Lexicon 480L, and he uses an Eventide Orville for sampling and pitch-shifting. "Brian Risner, who does the sound effects, is doing a really great job," Orr notes. "Like in the cemetery scene, where he gave me four different tracks for the coffin lowering. That enables me to play it any way I want to, and any way the producers ask me to."

Production sound effects get heavy usage on *Sopranos*. "The production recording is excellent on this show," Orr continues. "Matthew Price really takes a lot of care in recording it, so we save and use as much of the PFX as we can. Kevin [Burns] and I work together on that, using a separate center channel that gets blended with my regular center channel in the printmaster."

WEAVING THE TAPESTRY

Fred Tator is generally mixing eight tracks of music from DA-88s, along with eight to 14 tracks of Foley, also relying on a Lexicon 480L for reverb, along with an Eventide DSP 4000 for delays and effects. "This show does require that you 'work' the Foley a little bit more than some others," Tator says. "It's not just there for coverage on the M&Es for the foreigns, it actually is integral to the show. The trick with Foley, of course, is to make it so you don't notice it's playing. It has to fit in very well. Also, this show is mixed to a widescreen format, and care has to be taken to make sure that those things that appear on widescreen format don't stick out when you're in the 4x3 format. We mix to the widescreen, but we reference to the smaller screen and make whatever adjustments are necessary."

Tator cites the cemetery setting in one of the season openers as an example of how many Foley elements might play in a scene. "While the dialog is happening, there are people walking in the background throwing dirt on the coffin; those sounds need to be in a position where they fit in with the background sound, along with other people walking by and the FBI surveillance team that's watching from behind a fence above the road. All the movements need to be differentiated; you're hearing them all at once, but they can't appear to be coming from the wrong place. Some of that is in the panning, some of it's in EQ—dulling up some sounds, making others more present. And some of it is where it fits into the mix—whether it sounds a little distant or closer—which is done with different reverb settings.

"When it's right, the sound works together like a tapestry," he continues. "If you look really close, you can see the stitching and the separate colors, but when you stand back, the individual pieces don't stand out because the whole thing just fits together."

Upon approval by Chase, the 2-track printmaster is made through a Dolby DS4 matrix and, new this season, recorded onto a Tascam MMR8. "Since we're mixing in 5.1, we're not really hearing what will be broadcast," Burns notes, "because that will only have a mono surround. So when we play back for Martin and David, we do it on small speakers through the matrix. That gives us a chance to see how what we've done will translate to the Lt-Rt. With the hard drive we can record it all as one file, which is nice for the playback, because we can view the whole show nonstop; we get to see it all together."

Producing the soundtracks for a *Sopranos*' season is definitely a full-time job—it takes most of a year to complete the 13 episodes. For 2001's season, filming started in August, with the last show scheduled to be delivered in May, and preparation for the next season starting up again in July. There are a lot of long days in those months, but nobody on the team seems to be complaining,

"Working on *The Sopranos* is creatively very satisfying on multiple levels," concludes Bruestle, "starting with the freedom given us by HBO. And also, we all really love the show. Everyone who works on it has a lot of the same tastes, and it really is a lot like a family." ■

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BY GARY ESKOW

Audition! Select!...Download?

Sound effects creation has changed dramatically over the years. So has the way in which effects are packaged and sold. Fragile tapes and LPs that degenerated with repeated plays are relics that have no place in the contemporary television and film production community. Even the CDs that replaced these media are in danger of becoming obsolete. Online delivery systems are in their infancy, but as connections to the Internet become faster and copyright protection schemes progress, they will likely make ground shipping of traditional media unnecessary.

Where exactly are we today, and how are content producers leading us into the next phase of sound effects distribution? We contacted a handful of companies, scoured the Web for downloads and conducted interviews with some key players to get a sense of the state of the industry within an industry.

Most noticeable was the tendency of even the most forward-thinking companies to protect their market share by catering to clients who are comfortable with traditional sales methods. Even those companies that would prefer to offer their libraries solely as downloads to minimize manufacturing costs tend to sell them on CD. DVD, with its greater storage capacity, may be a viable delivery

SOUND EFFECTS LIBRARIES

option in the future, but not yet. Think about it. If you owned a 75-disc library, would you invest in DVDs, or bet that the industry will bypass them and go directly from CD to the Internet as the primary transaction medium?

Almost all manufacturers post their libraries, or portions of them, on the Internet as low-quality downloads for clients to audition. In theory, this approach is fine, and it works well for music. If you're looking for the perfect theme for a corporate video, then gathering the client and video producer around a computer that has a pair of speakers plus a subwoofer will allow the principals to sign off on music they can live with throughout the rest of the production. On the other hand, will a production company that has a wall of CDs or a networked jukebox seem more efficient? Studio survival often depends on appearance and "cool" factor—not to mention the need for speed—as much as technique. The Internet has the hip factor, no doubt; the issue of speed is still debatable.

THE ARCHITECTURE

Meanwhile, sound effects previewed as MP3 or Quicktime files, with the associated limited bandwidth, fare less well. I found it difficult at best to draw any distinction between short files, gun shots for example, that were heavily compressed. Assumptions as to the sonic place that a well-recorded brass fanfare will occupy in a film or video are essentially agreed upon. But what space will an effect labeled "car crash" occupy? Miking techniques, for example, are far less universal and are subject to more variables in this domain. No one records a rock ballad in a canyon, but that gunshot you're looking for will sound much different if it has been captured in a vault or the great outdoors. Limited bandwidth squashes out most of the distinction and, in doing so, reduces the effectiveness of the Internet as an auditioning platform.

I was, however, impressed with the speed at which demo clips at the Creative Support Services Website were delivered, so I asked Mike Fuller, a principal of the company, about their system, which offers telephone previews as well as MP3 and Quicktime demos. Fuller says that Quicktime is a newer and more efficient system for delivering audio than MP3, which was designed more than 10 years ago. "CSS Music uses the state-of-the-art QDesign codec, which was designed specifically for music." Fuller believes that at low bit rates, the QDesign Music Codec offers better sound quality than MP3 and points out the difference between a codec and an architecture.

"Quicktime is basically an architecture, while MP3 is a codec," he says. "Other codecs include MPEG-3, QDesign Music, IMA and Qualcomm PureVoice. Architectures include Windows Media and Real Audio/Real Video.

SFX LIBRARY CONTACTS

Though you may find many more custom libraries by going through your favorite search engine, here is a short list of some of the major sound effects players to help you get started.

Creative Sound Design
www.therecordist.com

Creative Support Services
www.cssmusic.com

Discovery Firm Inc
discoveryfirm.com

EastWest
www.soundsonline.com

F7 Sound and Vision
www.f7sound.com

Fresh Music Library
www.freshmusic.com

Futurity
www.futurityfx.com

Gefen Systems
www.gefen.com

Hollywood Edge
www.hollywoodedge.com

JamSync
www.surroundeffects.com

Jonathan Helfand Music & Post
www.jhmp.com

JRT Music
www.jrtmusic.com

Killer Tracks
www.killertracks.com

Manhattan Production Music
www.mpmmusic.com

mSoft Inc.
www.msoftinc.com

Music 2 Hues
www.music2hues.com

Network Music
www.networkmusic.com

Omnimusic
www.omnimusic.com

PowerFX
www.powerfx.com

Rarefaction
www.rarefaction.com

SFX Serafine Collections
www.frankserafine.com

SmartSound
www.smartsound.com

Sonic Foundry
www.sonicfoundry.com

Sonic Science
www.sonicscience.com

Sonomic
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Sound Dogs
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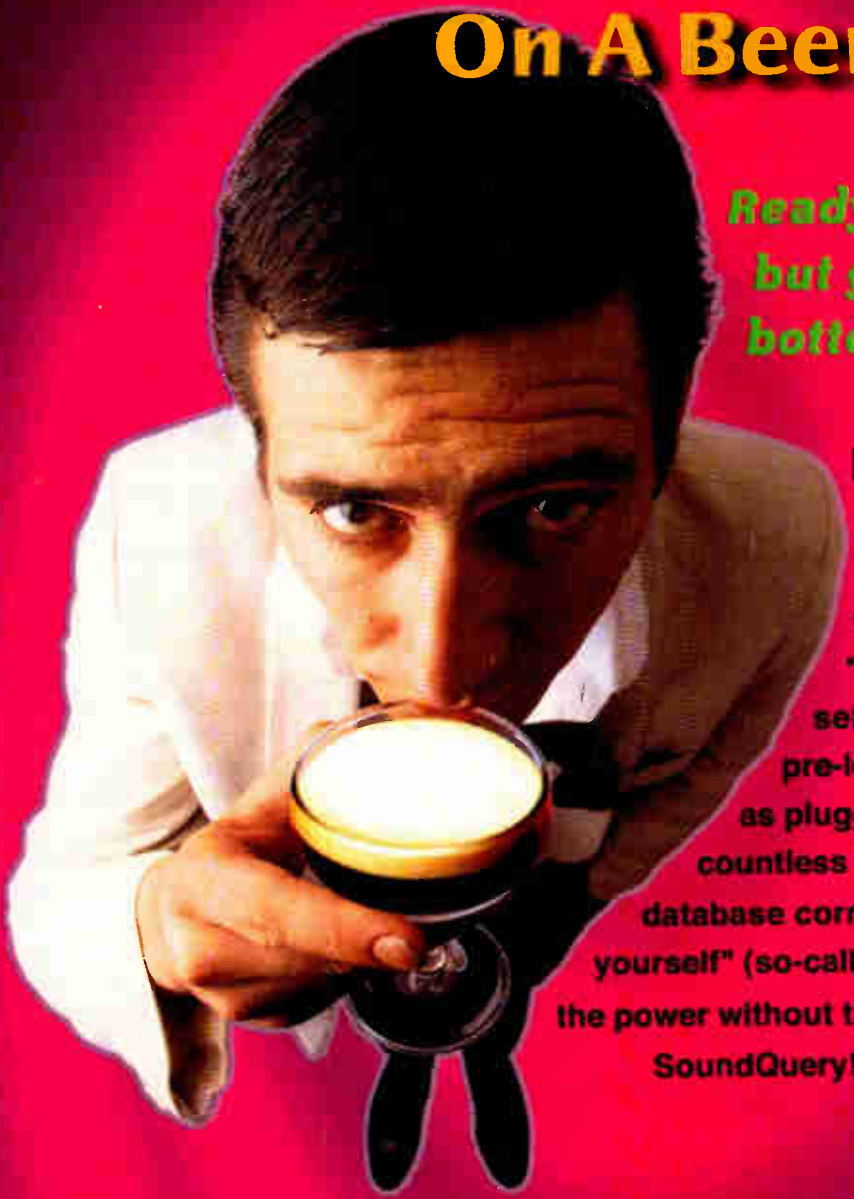

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SOUND EFFECTS LIBRARIES

What this means is that Quicktime can play MP3 files, but MP3 cannot play Quicktime. Quicktime is the Swiss army knife of audio and video. It can support more than 20 popular media formats, including MP3, MIDI, MPEG-4, AVI and Flash."

Its ability to fold music delivery in with video, animation and scripting interactivity makes Quicktime a clear choice for multimedia use. Music libraries need to be vigilant in protecting their copyrights, and Fuller points out that MP3, as practiced by Napster, for example, has become "the de facto standard for pirates on the Web. On the other hand, Quicktime is backed by a reputable company, Apple Computer, and is supported by such industry leaders as Avid, Macromedia, Digital Origin, Media 100, Adobe and even Microsoft." Fuller also points out that both the Quicktime architecture and the QDesign codec are royalty-free, whereas MP3 requires a license for commercial use.

WEB-READY FX

Most sound effects libraries that advertise their product on the Web—even those that do not offer their products as downloads—let the user choose between downloading a snippet onto their hard drive or using a streaming player such as RealAudio. PDF copies of catalog materials are also routinely available, and they can easily be saved to a folder on a hard drive for easy reference. Also, even if the sounds aren't available for download, the discs may be structured such that they are Web-ready, whether for the producer or the user.

A Stockholm-based company, **PowerFX**, has a five-CD sound library. Two years ago, Bil Brant, a programmer whose titles include *On the Jazz Tip*, *New World Order 1+2* and several discs for Steinberg and Sonic Foundry, bought into the company. Sounds purchased online from PowerFX go directly into a folder called My Sounds. Using a personal password, the owner can access these effects at any time, from any computer. "It's almost like having your own personal sound FTP site on the Internet," says Brant.

Another company, **F7 Sound and Vision**, was scheduled to release a third CD-ROM in its Concept:FX Series at the end of March, bringing its total of royalty-free sounds to more than 1,700. Featuring custom-edgy sounds, sci-fi tracks, drones and ambiences, the library effects are available in both .AIF and .WAV formats.

Sonomic, an effects company founded by the principals of mh2o.com, has emerged as a key online player over the last year. Providing samples and sound effects from a range of partnerships, including those with Doug Beck, Q Up Arts, Numerical Sound, Titus, Electronisounds, CA Sound and Clack Sound Studios, among others. All samples and sound effects, in .WAV and .AIF formats, are royalty-free, so you only pay once. The company also provides a free, personal Soundbay with purchase of effects, so a user can store, organize and access all of their sounds from any Internet-connected computer.

THE INTERNET DOES PROVIDE ALTERNATIVES FOR PRODUCTION MUSIC AND MAY PROVIDE SOLUTIONS FOR LAST-MINUTE DEADLINES. BUT IT, TOO, HAS ITS LIMITATIONS, AND BY NO MEANS IS IT A SUBSTITUTE FOR CUSTOMER SERVICE.

—DENNIS PONTILANO, KILLER TRACKS

THE 600-POUND GORILLA EFFECT

But no discussion of sound effects libraries would be complete without mention of the two major players, whether they deliver downloads or not.

Sound Ideas, distributor of a vast range of libraries, including the BBC Library, De Wolfe Library (23 CDs), Digiffects SFX Library Complete (113), Drone Archeology, Foley Footsteps, L Squared Sound Effects Library, Metropolis Sci Fi Toolkit, Producers SFX Library, Studio Reference Disc, The Renaissance Library (11 CDs) and countless others, has more than 60,000 available sounds. Individual effects are available for download through the company's partnership with Hollywood editorial house Sound Dogs, at www.sounddogs.com.

Arguably the world's premier sound effects library, **Hollywood Edge** offers a range of sounds on disc, with the company roots coming out of Soundelux, one of Hollywood's most successful post-production companies. While the 50-disc Premiere Edition remains the company's bread-and-butter, recent signings with niche markets have proven to be a hit. In the past

year, the company released, in conjunction with Zoetrope, an Apocalypse Now package. Also, they signed a deal for Sounds of a Different Realm, highlighting work done by the late Alan Splet and his wife Ann Kroeber, for David Lynch. The company also just released Lon Bender's Gadgets. They also distribute many highly specific discs, ranging from sports sounds to car chases to gunshots. From the site, you can audition samples, and the database is available online, but at this time, purchasing sounds as downloads is not available.

NOT QUITE YET...

Not everyone is jumping on the Internet bandwagon. **Killer Tracks**, the Hollywood jingle house, augmented its business several years ago by offering tracks they own as a library. The company's first sound effects library, Killer FX, a CD collection of more than 20 disks, is being released in 5.1 channel surround. Company spokesman Dennis Pontilano says that Killer Tracks is keeping a watchful eye on the development of the Internet as an outlet for sound effects.

"As DSL lines and fiber optics permeate the market, high-speed Internet access is now more affordable than ever," he says. "[But] even with a T1 or DSL line, it takes an average of 15 to 30 minutes to download a full-length piece of music. The Internet does provide alternatives for production music and may provide solutions for last-minute deadlines. But it, too, has its limitations, and by no means is it a substitute for customer service."

Frank Serafine is a well-known and highly respected Hollywood sound designer. His initial library offering, Platinum Sound Series, was released by Ilio Entertainment. **SFX Serafine Collections**, a 16-disc collection that is being released initially as audio discs only, is being brought to market at this time. One of the discs, *Guns of Cinema*, underscores the problem of trying to distinguish short sounds using compressed audio files. (Under an agreement with Serafine, a sound designer in Michigan named Ric Viers gained access, through the Detroit Sheriff's Department, to the largest gun vault in the world. "We had access to some very historic weapons," says Serafine, "including some that hadn't been shot since the 1930s, including Al Capone's personal Tommy gun! One of the CDs is a full history of the guns, and we have the sheriff talking about how inaccurate guns are in the movies!)

"You can't hear the difference between these sounds as MP3 files," he laments. "That's one of the reasons we have no plans to sell our material on the Web. We gear our products to the professionals like Disney, people who use library material every day and have to have immediate access to it."

SKIP THE NET, LEARN TO DRIVE

The decline in cost of hard drives has led one company, **mSoft Inc.**, to come up with an alternative delivery solution. Their product line comes on predigitized hard drives, along with database software that allows the user to search and select sounds quickly. "We offer a cutting-edge, technology-based Intranet as well as Internet browser product line," says CEO Amnon Sarig.

"Instead of trying to be a proprietary system, we wanted to be friendly with all the DAWs on the market, including Pro Tools, Fairlight, and other PC- and Mac-based workstations. Internet technology is the common factor. How?

"I have an Internet server, which I get from Microsoft. It runs on your LAN, and it doesn't care what browser you're using, or whether you're using the sounds within a facility or among multiple facilities. It operates like the Internet. When somebody buys a solution from me, they can pay anywhere from 12 grand to 100 grand. For 12 grand, you get access to the server, an operating system, a computer and our software. For 100 grand, you get a terrabyte of sounds as well. These sounds become available for browsing and downloading to all of your DAWs."

mSoft Inc.'s strategic partners include Fairlight, Digidesign, Waveframe, DSP and Augan. The company's products also support Soundscape, SADiE, Avid, AMS Neve and others.

For the time being, it seems sound effects will continue to be available on disc and online. Find your favorite search engine and go! ■

Gary Eskow is a contributing editor to Mix.

Crawford Makes the Move

The Year's Biggest Broadcast Event... And No Dropouts

BY DAN DALEY

Hollywood's special effects wizards are experts at getting 600-pound gorillas to move onscreen, but when it comes to moving around 6 million-pound gorillas, Atlanta's Crawford Communications deserves the Oscar.

Nearly three years ago, planners at the city's Metro Transit Authority, MARTA, decided that they needed a new rail switching yard to accommodate the massive growth in the city's rapid transit system to counter The Big Peach's problematic traffic congestion.

Unfortunately, the specific site they determined to be most appropriate for the new rail yard—and absorbed under the aegis of eminent domain—was exactly where Crawford Communications had been in operation for the past 16 years. Founded in 1981 by company president Jesse Crawford, privately held Crawford Communications had built itself into the Southeast's premier post-production facility, comprising 150,000 square feet and home to 300 employees servicing broadcast and film, audio and video post, multimedia and satellite transmission services. Network and cable broadcast clients include Turner, Tribune Co., The Learning Channel and Discovery; the company also regularly handles advertising and corporate work and independent film productions. Those operations had to be moved completely to a new location, and it all had to be done without interrupting business. And Crawford wasn't going to be able to pull it off with special effects. Simply put, the entire facility would have to be moved—lock, stock and barrel.

"When they came to us, we were dumbfounded," recalls Steve Davis, Crawford's director of audio services. "Then the reality sets in: You can discuss the

Dave Wilson in Audio B

Steve Warner in Audio C

terms of the move, but you can't argue with eminent domain."

The company quickly set about developing a strategy for the move. The new site chosen by Crawford—on 26 acres that once housed commercial satellite dish manufacturing and research operations for Scientific Atlanta—was approximately 11 miles away from the original location, in the northeast section of the city but still near the I-285 perimeter that loosely defines Atlanta's sprawl. At the time, it must have seemed like 11 light years away.

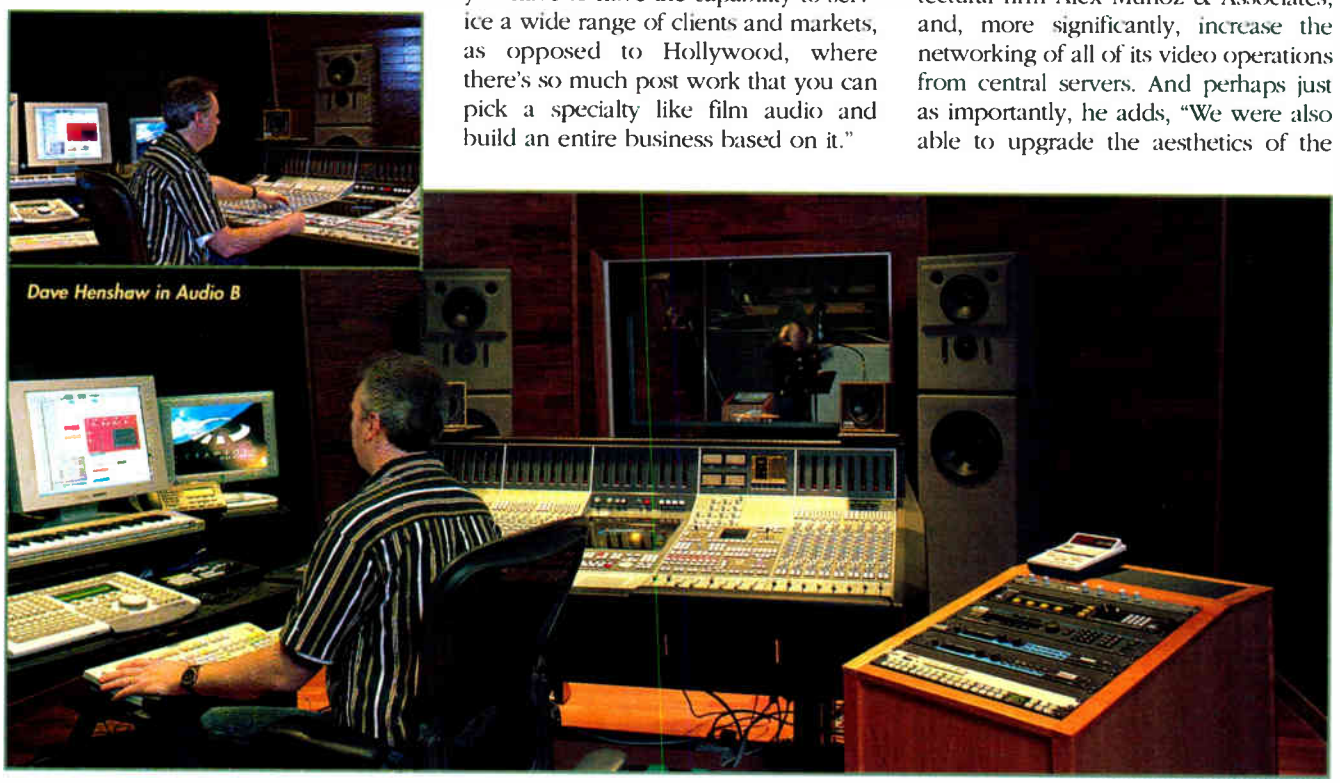
"The logistics were incredible," says Davis, "but the strategy we developed was to stage the logistics, building


Eric Stark


Steve Davis

Crawford Makes the Move

rooms at the new facility, prewiring them and getting them as ready as they could be, room by room, then choosing a day, moving the equipment and setting it up in the new place. There were maybe a couple of days downtime between each room. But the key was to make sure that there were always rooms available for each project so that no clients were inconvenienced. As expensive as it might be to buy new equipment and technology, that can be managed and budgeted for, but lost revenues will eat you alive."



Dave Henshaw in Audio B

LIFE HANDS YOU LEMONS, YOU MAKE LEMONADE

However, there was a significant silver lining to this situation, and once the shock of the realization wore off, Crawford's management realized that it was being given a rare opportunity to reinvent itself at a time when the technological and business models of the professional audio/video post and broadcast industries were undergoing dramatic change.

Davis explains: "We had been experiencing a lot of growth over the years we had been here, and our response was to expand our operations. But as with any business, when you're reacting to new requirements, you put new operations in where you have space, using the technology current at the time. So as you would expect, the audio rooms were all somewhat different, reflecting the time they were brought online. And our audio operations began at a time when people wanted more use of large-format consoles, so we had six rooms like that vs. five rooms with Pro Tools hard drive systems, which were used at that time for more basic services. All of this is compounded by the fact that in a market like Atlanta, you have to have the capability to service a wide range of clients and markets, as opposed to Hollywood, where there's so much post work that you can pick a specialty like film audio and build an entire business based on it."

The move allowed Crawford to develop an integrated new systems plan, smaller in size but exponentially more powerful and sophisticated. The plans called for a 135,000-square-foot facility with 11 new studios, including three large-format rooms designed by Tom Hidley. The principals also realized that they could take a more integrated systems approach to technology. The number of Pro Tools systems and suites increased, and the three large-format rooms were equipped with the same platform—Avant digital consoles from Solid State Logic—all of which are hub server-networked.

"You can really see how the business has changed," says Davis. "There's more emphasis on hard drive [audio] systems now, and they're used for many more aspects of production, as well. And while there's less reliance on large-format equipment, you can achieve a lot more using fewer consoles and rooms if you have consistent technology that's also networked together. So the bottom line is, we end up with about the same number of rooms in the new facility vs. the old one, but the new ones are more efficient, more sophisticated and more productive."

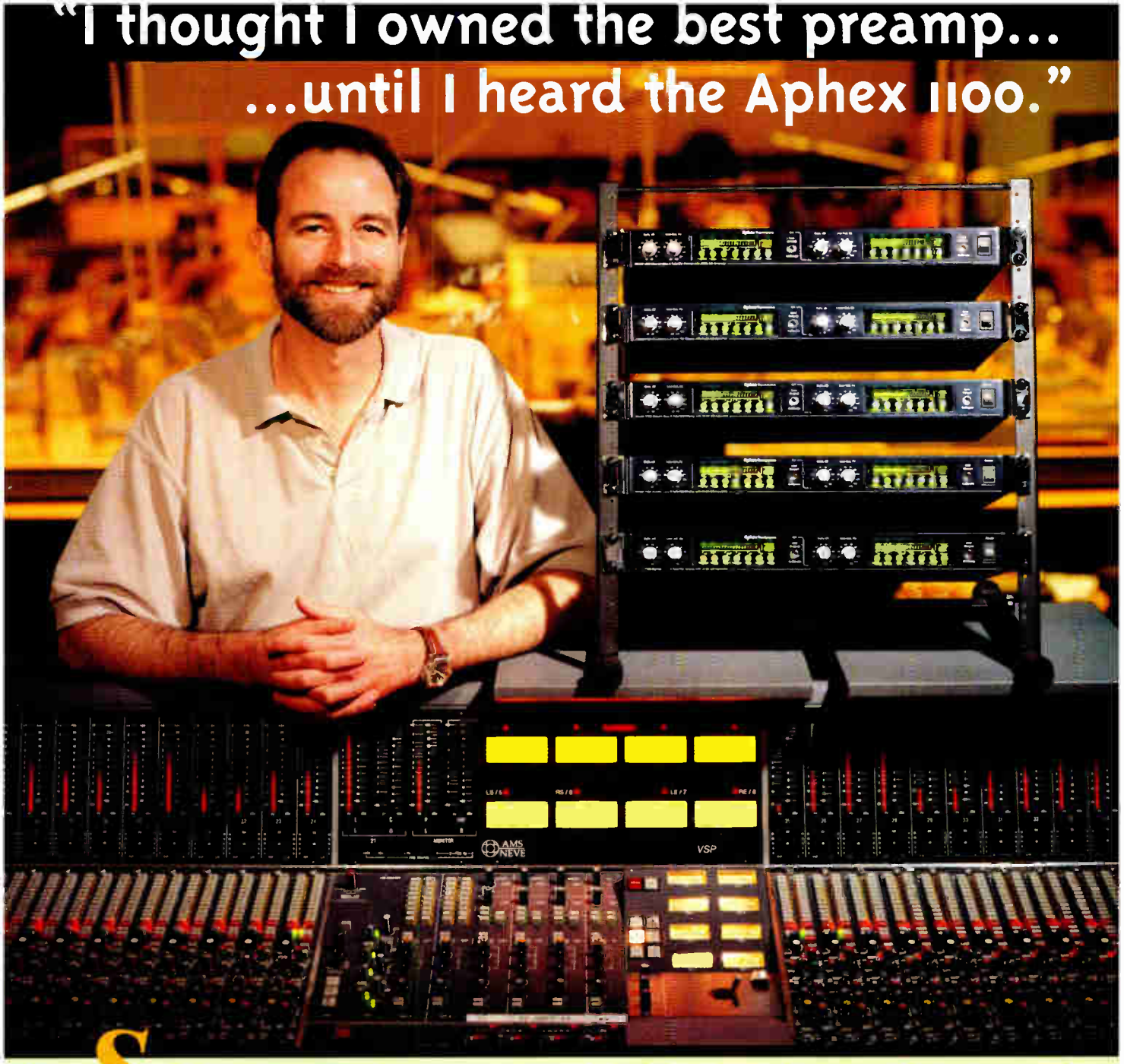
The benefits of the move accrued on the video side as well. Bill Thompson, Crawford's VP of post-production, says that the facility was able to expand the number of its 601 nonlinear editing suites, designed by Atlanta-based architectural firm Alex Munoz & Associates, and, more significantly, increase the networking of all of its video operations from central servers. And perhaps just as importantly, he adds, "We were also able to upgrade the aesthetics of the suites. Four of our nonlinear editing rooms will have patios where clients can hang out on now and two have theater-style projection."

A CHANGE WAS GONNA COME

Eric Stark, Crawford Audio's chief engineer, created the schematics for the audio division's new quarters, based on complete integration of all audio studios—six compact audio suites based on Pro Tools and Yamaha O2R mixers, two larger nonlinear suites equipped with Pro Tools, Fairlight MFX3plus workstations and Synclaviers, and three large control rooms, each with an SSL Avant console with integrated Pro Tools and MFX platforms. Wiring for all audio and video connections into a central server network was done by Sony's SIC division.

"The rooms had to be able to trans-

"I thought I owned the best preamp... ...until I heard the Aphex 1100."



Stephen Krause, award winning recording engineer and producer with over 60 films, 10 TV series and 20 records to his credit, is always in search of better tools. He compared just about every preamp that came on the market to his favorite. Nothing impressed him— until he tried the Model 1100 tube preamp from Aphex Thermionics.

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Crawford Makes the Move

fer audio and files from any studio to any other studio," says Stark, adding that each has its own Internet portals to support Crawford's commercial client base for streaming voice-overs and approval versions. "We'd started the idea at the old place and expanded on it significantly here," Stark says. "We wanted it so that you don't have to get out of a chair to do anything. Included in the networking design are such touches as mic pre's accessible and controllable from any of the large-format consoles, as well as video cameras linking all of those studios to allow both acoustical spaces to function as a single studio, if needed.

WITHOUT A HITCH

The actual transition between facilities was so meticulously planned that it almost seems anticlimactic in retrospect. It was a rolling transition, with sessions at times finishing the day in one location and picking up the next day at the new site, with all audio networks having their specific transitions over a two-hour period one Saturday afternoon, when one set of prewired hubs was activated and another shut down almost simultaneously.

"We had to sync all of their schedules and all of their data and media between one place and the other," says Stark. "It was as much logistics as it was technology and design." The satellite up-/downlink capability, a big part of Crawford's business, was bridged by the company's seven C- and Ku-band remote trucks, which acted as a bridge between the offlining and onlining of old and new satellite farms adjacent to the two sites.

As good as the technology for audio is, it's matched by the video upgrade within the audio division; it includes DILA high-end projectors that allow emulation of a full range of environments, from big theaters to home theaters. That, says Davis, was an offshoot of Crawford's deliberate and thorough market research in the two years they had to prepare for the move.

"We had to know where the market was going in 2001 two years ago," Davis says. "Looking around, we could


Audio Booth

see that there was a congressional mandate for digital television. But there were other signs as well: DVD was becoming the fastest-selling new consumer entertainment format, and we saw the inserts in the Sunday papers advertising complete home theater systems at that magic $300 price point. We had to know where every part of the market was going to be, because this was an opportunity to get more deeply

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Crawford Makes the Move

into markets we were already in and into new markets."

Hence, Davis and Stark say, the emphasis was placed on the audio environments. For instance, Hidley's control room designs take into account the fact that more music concert videos will be done on DVD, which offers more frequency range. Thus, so do the new control rooms, which can cover 16 to 22k Hz, using a combination of Kinoshita monitors and powered subs and surrounds that Stark designed and built (which he dubbed Krats—Stark spelled backward).

"It's really a new concept for an audio post room," Davis suggests. "It takes the best of a film dubbing room and a music studio and cherry-picks them into the optimum design for a room intended for mixing audio to picture. That allows us to target markets for the next generation of broadcasting; for DVD and home theater; for special-venue pieces, such as fixed installations in museums; and for long-form media work for entertainment and for corporate clients. Most of the audio-for-video work for these applications in the past have been done in small music-type control room environments, which are basically audio rooms where video has been added. Our new rooms have full front-projection systems capable of up to high-definition playback, as well as great [audio] monitoring and acoustic enhancements such as concrete-fill baffle walls. It's a next-generation approach. Even in Hollywood, you see great dubbing stages, but they're designed to emulate theater environments. They're not designed for mixing a DVD music video. Theaters have perflorated] screens; home theaters generally don't. So we can cover a lot more bases for a lot more clients this way."

Davis adds that more of Crawford's corporate and broadcast audio clients, such as The Discovery Channel and PBS, have also come to realize the long-term benefits of content, so they are, in his words, "future-proofing" and repurposing their productions in post by adding multichannel sound, for example. Music videos and concerts have been spearheading this trend on DVD in the last two years, and it's a market sector that Davis sees Crawford pursuing more intensely. As a result, all three large control rooms and two of the smaller audio suites are equipped for 5.1 audio.

As complex and costly as the move was—tens of millions of dollars between Crawford and the city, counting the valuations of the sites, technologies and labor—the transition was completed right on schedule. "We handed the keys over to MARTA on September 29," Davis recalls proudly, a day before the stipulated last day of that month. It wasn't an arbitrary deadline, he recalls. "On October 1, MARTA [was] going to have bulldozers waiting at our door," he says. "So it would to be pretty dramatic if we didn't have everything in place by that date."

And, considering how cable television has consumed itself with programs recounting the creation of massive manmade works, from Cheops' Pyramid to the Boulder Dam, one of these days it may come to see Crawford's move as an opus worthy of the same treatment. ■

Dan Daley is Mix's East Coast editor.

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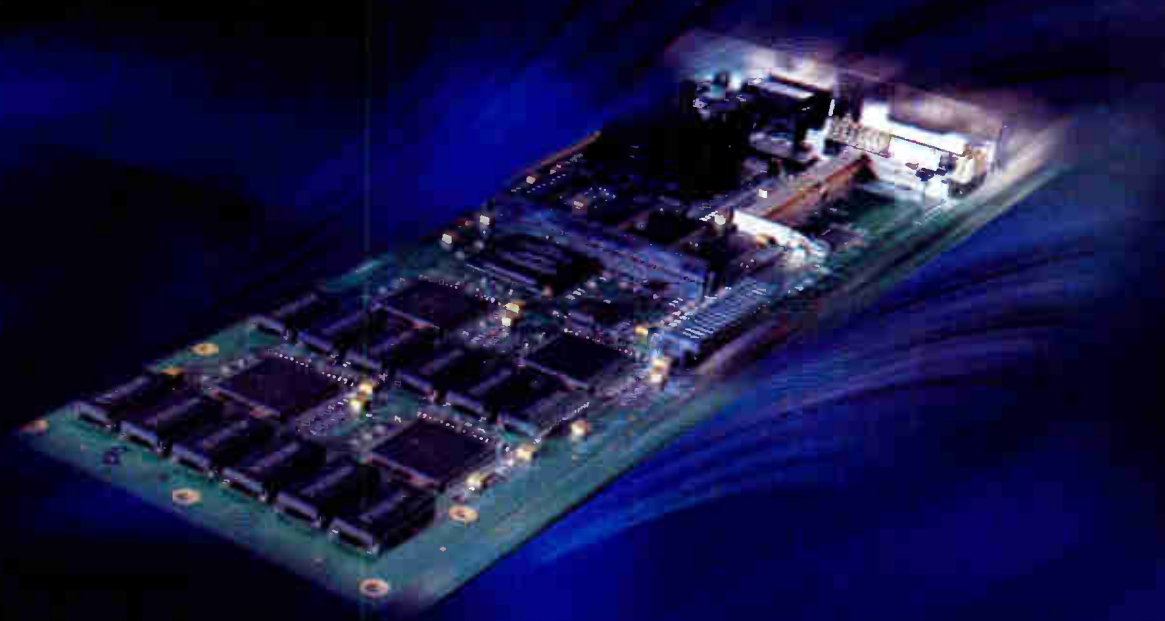

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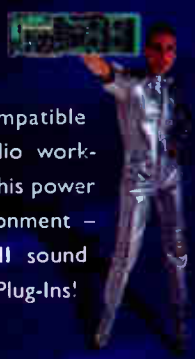

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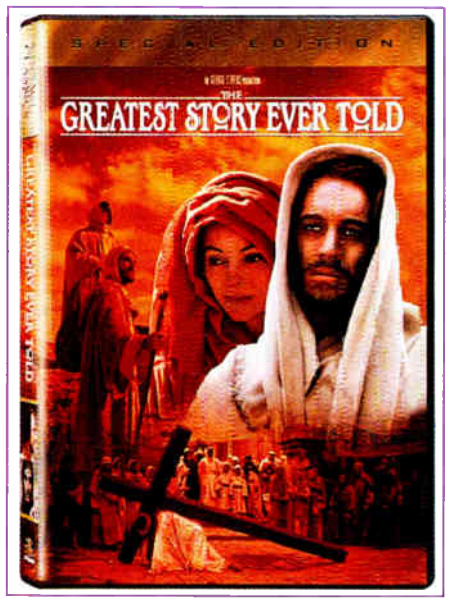


PHOTO COURTESY © MGM HOME ENTERTAINMENT

PHOTO: TIM HOLBATH

NoNoise editor Ivan Galan, left, and mixer Chris Salmassy, with Max Von Sydow onscreen.

> **We try not to change the EQ or the color or the intention of the show. We try to, as much as we can, preserve the original intent of the mix.**
>
> **—Chris Salmassy**

BY RICK CLARK

Beginning in the mid-1950s, Hollywood churned out a flood of Biblical film epics like *The Ten Commandments*, *The Robe*, *The Bible* and *Cleopatra*. One of the most successful in that genre was *The Greatest Story Ever Told*.

Nominated for five Academy Awards, this 1965 film, which covered the life and death of Christ, featured a star-studded cast, including Charlton Heston, Sidney Poitier, Claude Rains, Telly Savalas, Angela Lansbury, Dorothy McGuire, Donald Pleasence, John Wayne, Roddy McDowall, Ed Wynn, Jose Ferrer, Max von Sydow and others.

MGM Home Video has gone back and restored the original 65 millimeter print and released a double-DVD set that contains the Roadshow version, 5.1 surround mix and a 16x9 transfer—all in time for Holy Week. The set (one DVD-9 and a DVD-5) also includes a new documentary with on-camera interviews with the director and cast. There is also a "making of" featurette, a photo gallery, as well as the usual scene selection and trailer.

The audio clean-up and mix was done at Chace Productions in Burbank, Calif.

"The source track was a 35-millimeter, 6-track mag, which was slightly warped and shrunken," says Ivan Galan, who cleaned up the audio. "We played it back on a Sondor Oma Se Chace, which is a magnetic film dubber that is specially designed to handle 'problem' films such as this. It was taken directly into a Sonic Solutions digital workstation equipped with NoNoise software. It was here we were able to conform the audio to picture and then address audio anomalies. These anomalies not only consisted of things that seep into a track over the years due to wear and tear—such as hums, pops and dropouts—but also included editorially correcting phase relationships of the 6-tracks for use with modern playback equipment. It was standard practice to 'phase flop' mono-coincident material for different 'perspectives'; this would cause problems in matrixing the track later on."

Chris Salmassy mixed the audio in Chace's THX pm3-certified Mix One. Salmassy worked on a Sony DMX-R100 console and monitored through the Apogee Sound MPTS-1 Theater System (LCR, LFE) and JBL 8330 surround speakers. The system is powered by Bryston amps.

"This type of show had a front end full of audio, and dialog was panning across; we had to make sure that

—CONTINUED ON PAGE 98

"TRAFFIC" AND TDM, PART 3

AVOIDING VIRTUAL MACHO

BY LARRY BLAKE

PHOTOS COURTESY OF USA FILMS

I remember talking in the mid-'90s to a friend of mine in film sound, a top supervising sound editor/sound designer, who told me an interesting story: A director had done the sound for a low-budget feature film completely within Pro Tools, all by himself. Sure, I thought. You mean he cut everything in Pro Tools, but then brought it to a small mix stage and...

No, no, my friend said, knowing where I was headed. He had searched for similar qualifying statements from the filmmaker—"You can't do *that*!"—but none were forthcoming. *Everything* was done within one system, with no external console in sight, much less a control surface. Right there on the desktop. "Jeez," I said. "How did it sound?" "Pretty good," my friend replied.

Hmmm, I thought. Hmmm.

Well, as you readers know, it was not until control surface technology became more "mature" in 1999 that I eventually figured out how to wrap my brain around the idea of mixing within digital audio workstations. Indeed, I think that the current technology is the equivalent of where recording studios were in the mid-'60s, when 4-track was all the rage: If you have the skill, you have enough flexibility to do great work by any standard. Sure, control surfaces and plug-ins will get better, just as modern recording consoles and studio thingamajigs offer many improvements. But is anybody today doing records as good...all right, I will restrain myself from mentioning the name of the group from Liverpool.

This month's column will wrap up a three-part series on my most recent experience with virtual mixing in workstations, supervising and mixing *Traffic*. In this final part, I'll try to speak in broader terms regarding my virtual lessons—some pro, some con, some mere observations—over the past two years.

One of the more interesting things that I've "learned" is the preconception in the industry that mixing *with* control surfaces is synonymous to mixing *in* small edit rooms. I know, I know, this doesn't make sense, but I can't tell you the number of people who assumed that I

—CONTINUED ON PAGE 100

MUSIC SUPERVISORS

SELLING THE MOVIE, SELLING THE SONG

BY DAVID JOHN FARINELLA

How much power do music supervisors have in Hollywood these days? The answer seems to lie in the fact that music supervisor John Houlihan was able to bring Drew Barrymore to tears when he delivered the news that Prodigy cleared their song "Smack My Bitch Up" for use in the film *Charlie's Angels*.

In other words, a bunch.

The role and importance of music supervisors has grown exponentially each decade. In the early 1970s, when Martin Scorsese pulled together the music for the movie *Mean Streets* on his own, it was generally up to the director to negotiate with a band's A&R representative for song rights. In the '80s, with such films as *Urban Cowboy*, *Dirty Dancing* and *Risky Business*, there needed to be a middle person who could negotiate with labels and bands to get clearance for songs. Over the past decade, the job has expanded, starting in pre-production, running through the shooting of the film when music supervisors are often called in for creative assistance, and ending only after re-recording and post-production is completed.

Charlie's Angels

PHOTO: DARREN MICHAELS/© COURTESY COLUMBIA PICTURES

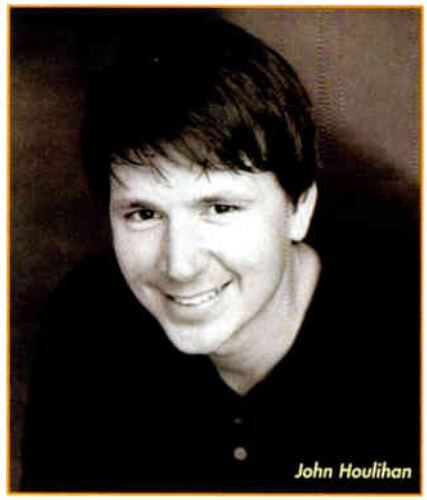
For *Charlie's Angels*, Houlihan, director Joseph McGinty Nichol and the entire team were counting on the Prodigy song to clear for a certain scene. "It took me three months to clear that song," Houlihan says. "We had a backup song, but it was so far down creatively from how the Prodigy song worked that it would have been a disaster if it didn't get cleared." Two days after their drop-dead deadline, he woke up at four in the morning to call London one more time. He finally got a yes. "I called McG [the director] and he was in an ADR session with Drew Barrymore. When they heard, a weight was lifted off my shoulders and Drew started crying. It was that dramatic. Thank God it cleared, because none of us who worked on the film, having lived with that song in that scene for so long, would have been able to watch it any other way."

A CREATIVE NEW WORLD

As recently as 1987, when Jeffrey Kimball of Other Noises Music debuted as a music supervisor, there were not many others doing the job. On a nuts-and-bolts scale, not much has changed. "Except that not a lot of the record companies had people set up to handle licensing to films and television back then," Kimball explains. "So, sometimes you were dealing with an A&R person, the budgets weren't what they are today and the expectations weren't what they are today." In fact, he adds, a large part of his job back then was digging through stacks and stacks of vinyl albums in old record stores looking for hidden gems. "Now, anybody can dig up music by sitting at a computer."

Today, music is more accessible and the demand for soundtracks has grown. It seems as if nearly every film that's released these days has a soundtrack attached. Why is that? "It's the same reason people play slots—when a soundtrack record hits, it hits really, really big. It hits huge," Kimball answers. "Everybody is thinking *Titanic*, so there's this willingness to put out a fair number of soundtrack records in the hopes that one out of 10 or one out of 20 will hit the big time."

Increasingly, too, movies include songs as scene definers. Think back to how Peter Gabriel's "In Your Eyes" appeared in the 1989 film *Say Anything*.



John Houlihan

Six years before that, Tom Cruise defined *Risky Business* in one scene by dancing to "Old Time Rock & Roll" in his underwear.

Of course, basic economics teaches us that as demand rises, so does price. It was not unheard of to pay $2,500 for a popular artist's song 15 years ago. These days, the range runs from $15,000 to $40,000 for a non-hit song. Moreover, there are reports of bands getting anywhere from $500,000 to $1 million for a single song. "The licensing fees for songs have gone haywire," says Houlihan. "Many people liken it to when Jim Carrey got $20 million for a film. After that, all the other A-list actors demanded that, and it wreaked havoc on budgets." That same phenomenon is happening in the music-for-film business, with more and more event movies throwing an average of $600,000 to $800,000 at major artists.

"When we were trying to close our major rock deal for *Charlie's Angels*, there's a band we didn't close the deal with because they wanted a million dollars," reports Houlihan. "Why? Because that's what Metallica got for *Mission: Impossible 2*. Glen Brunman [who handled

—CONTINUED ON PAGE 106

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—FROM PAGE 94, "GREATEST STORY"

the end result was compatible in both 5.1 and Dolby Pro Logic," says Salmassy. "A lot of times, when those shows are decoded, they would have all sorts of problems with the audio going into the surrounds. We had to pay special attention to preserving the original intention of the dialog placement, as well as making sure that it didn't end up with out-of-phase information throwing dialog into the surrounds. That was one of the challenges we were up against.

"A lot of times, when there is dialog in old theatrical presentations going into all three channels—left, center and right; or left-center, center and right-center—incorporating the left-center and right-center tracks can be problematic," he continues. "That can be a hurdle, but in this film it was a small one. Once we found the proper balances, it didn't pose too much of a problem at all."

Salmassy, aware of modern sound jobs that sometimes call attention to themselves, was careful not to overly hype the track on *The Greatest Story Ever Told*.

"We try not to change the EQ or the color or the intention of the show," he says. "We try to, as much as we can, preserve the original intent of the mix. When we create a surround from a mono surround or previous no-surround source, that is when a little EQ is needed. Sometimes I will do a little roll-off from the surround to not take away presence from the front end.

"When we created the subwoofer track, it was very sparse," he continues. "So only in certain instances did I incorporate the sub track. It would be moments like a bunch of horses galloping by or legions of soldiers trampeling. We elected not to go over the top on the thunder sequences with Jesus up on the cross on the mountain, as it was already building up to that with the music and the sound effects. So we just maintained that. Very little was used, unlike a typical late-20th-century bombastic mix.

"Most people buying DVDs are expecting pretty big sound from contemporary films," he concludes. "When they get these older films, they aren't expecting to have such a wide-sounding track. In this case, the original 6-track audio that was used for the source of the 5.1 mix was really brought across successfully and maintained. The original sounded great, and we just enhanced it a little bit." ■

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—FROM PAGE 95, TRAFFIC AND TDM, PART 3

would be monitoring *Traffic* on bookshelf speakers, like the aforementioned low-budget filmmaker did in 1995. Give me strength!

The key thing is to remember the distinction between the A-Chain and the B-Chain in film sound. The former is the source of the sound, while the latter is the reproduction system and the room acoustics. Your B-Chain must represent time-honored standards in terms of level and frequency response. This will never change, and its standardization is indeed one of the cherished hallmarks of film sound re-recording. *Traffic* sounded the same to me at Studios de Saint-Ouen in Paris as it did during the final mix at Swelltone

PHOTOS COURTESY OF USA FILMS

Labs in New Orleans. (Except that da woids were different.)

The basic physical considerations for a film mix room include using bi- (or tri-) amped theater speakers behind a perforated screen, with the center of the mix position subtending an angle of approximately 45°, giving the sound time to develop in a room before reaching your ears. Having said all this, I think that you are better off being in a small room than in your classic 300-seat re-recording barn, regardless of console or working method. My gut places the ideal size for a mixing room on the order of 35 feet long by 25 feet wide, although our stage in New Orleans (26x18) is quite comfortable. (Please, no letters from acousticians telling me that my numbers violate some sacred room-size ratio.)

I have never, ever, had problems with mixes (including the eight films I did in Weddington Productions' 15x10-foot studio) translating *up* to larger spaces. Although in small mix rooms you tend to be hypercritical about matters such as noise and distortion, there are no down sides to this approach, in my book. Eventually your film will make it to DVD in home theaters, and your sonic kimono will be wide open. Large rooms, however beautiful they can sound, will often obscure problems that will rear their ugly head when the film heads to DVD mastering, if not sooner.

The problem with *really* small rooms is that your perception of loud

sequences is somewhat skewed, causing you to be a little conservative relative to what can be "absorbed" in an average theater. (Then again, most of your audience will probably appreciate your efforts, however unintentional, in that direction.)

The macho posturing that mixing a feature film equals mixing in a large room is not the only thing that has to be un-learned in virtual workstation mixing, in my humble opinion. For starters, cue sheets are a waste of time when you can see the modulations rolling by you. Because you are bused to your final output configuration from the first day of premixing, there is no need to write your busing down, one of the primary uses of cue sheet.

The whole entourage behind punching in—streamering the picture, constantly fiddling with the PEC/direct keys—is reduced substantially. This is not to mention the biggest one of them all: You record only automation until you need to screen the film or record your final stems.

And thus we come to the first "down side" of this process that I'm touting as the best thing since sliced bread, or at the very least, Dolby Stereo. You have to be on guard against "virtual macho" and being seduced by the reliability and power of total automation. The most obvious and important example is to think that your automation will be retrievable at will at any time in the future, and therefore you don't need to print stems.

This is poppycock. While I'm quite sure that Digidesign will be around in five years, I would never want to bet

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that all of the software and hardware planets—Mac OS, Pro Tools version, plug-ins versions, Pro Tools hardware—will line up exactly as they did on the last day of the final mix. In two years, much less five.

I know I sound like a broken record, having said this a few times before, but it cannot be overstated. You should not begin printmastering until you have recorded (or, as I prefer to say, "rendered") your stems in as many food groups as possible.

At this point, you know that what you are hearing is what you signed off on at the final mix, and you don't have to worry about having the automation guillotine hanging over your head. Your stems then reside in a simple session that is refreshingly bereft of automation. The theoretical benefit of saving a digital generation by going straight to printmaster, etc., does not compare to the down side that something might not come back...unnoticed until it is too late.

By recording many types of stems—dialog, ADR, production effects, backgrounds, Foley, hard effects, etc.—you are turning a potential disadvantage into a big plus. Should you have to come back to a film years later to take it apart, be it for something as simple as an non-curse-word airline version or as complex as a four-hour "director's cut," you are reducing your need to jump back to the automation-laden sessions that were running at the final mix.

Don't get me wrong, I think that it is important to try to preserve your original edit/mix sessions as carefully as possible. Document, on paper, the facts of the final mix: what hardware was used (including CPUs and RAM), software versions, monitor matrix as-

GLOSSARY

This month's glossary deals with a few old-school terms that might be unfamiliar to some of you.

STREAMER: Markers on film (or electronically generated on video) to count mixers down to a scene change and a punch-in (or –out).

SINGLE-ENDED NOISE REDUCTION: Processing, such as gates, that eliminate noise already present on a recording. Double-ended noise reduction, such as Dolby SR, requires two stages, encoding and decoding.

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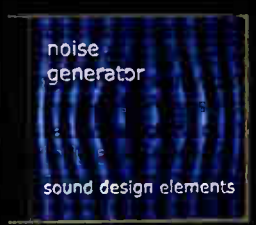

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signments, etc. You should always aim at being able to get back to your final mix; just don't rely on it.

Another strain of virtual macho that you have to be on the lookout for is a total resistance to outboard gear that has to be actually plugged in. Indeed, I have relied exclusively on software plug-ins for my two virtual mixes, and I hope that my streak continues. However, I do see the need, if only on a philosophical level, to free myself from the "it's-all-gotta-be-automated-via-TDM" mantra. What matters at the end of the day is how cool your film sounds, how *right* it is. And if getting there is helped by easy-to-use, single-ended noise reduction (one of the big plug-in gaps so far) or one of the new multichannel reverbs, then go for it.

Although you can have gear inserted on aux inputs and following timecode, it is a far sight smarter and safer to get the sound you want and render the file with the sauce already applied. Bring this up in tracks where EQ "blacking" is flat, faders at zero. The original track(s) should stay muted, and if you need to tweak the sound in the future, it's not that big of a deal. You're still ahead of the game as it would usually be played—the fader and sends levels, plus the returns, are all there, lurking in your session.

In essence, one of the central dilemmas of virtual mixing is deciding what good stuff to keep from the old school, what to modify and what to discard. As much as possible, use your control surface as you would a normal console. For example, become adept at using the assignable knobs to tweak EQ and send levels on-the-fly. I found that I would initially always stop and deal with the sound by itself, on the computer screen.

Along the same lines, keep your eye on the screen…the movie screen, that is. The time-honored maxim of mixers is never more true, because it's very easy to get seduced by the tracks sliding across the monitor. You need to keep your gut (and your ears and eyes) focused on the movie.

As I've said many times before, in order for this whole fully automated process to work, you have to create bulletproof templates of every flavor: One for each of the sessions that will be playing back at your final mix, plus many variations to hold your stems and create printmasters and M&Es. I have been tweaking and adapting my standard setups for the past two years and have pretty much settled on what I need. Once I redo the templates on my next film, *Ocean's Eleven*, with the radically new and improved busing structure that is in Pro Tools 5.1, I hope to spend much less time tweaking them in the future.

This claim will be met with much skepticism from my colleagues who give me a hard time while accusing me of making too-large and elaborate session templates. I try to imagine oddball stuff that comes up on every film, without fail, and create a space for it. JExtensive X tracks, sends, EQ and sends on every fader…I want to have my cake and eat it, too. I don't want to compromise anything offered by standard mixing practices, all the while that I'm enjoying the benefits of virtual TDM mixing.

And that is all that I will have to say on this subject for a long time. Your comments, however, are always welcome at PO Box 24609, New Orleans, LA 70184, or to swelltone@aol.com. ■

Larry Blake is a sound editor/re-recording mixer who lives in New Orleans for reasons too numerous to mention, although one of them would have to be that his favorite virtual mix stage is only 12 minutes from his lovely home.

—FROM PAGE 96, MUSIC SUPERVISORS

A&R for the *Charlie's Angels* album] said, 'If we pay this band a million dollars, it will be the end of the music soundtrack business.' We agreed it was just too high. Could Sony Pictures have pulled out some extra money and made it happen? Yeah. But for the next Sony Pictures film, it would have been that much harder to make rational, reasonable, realistic deals."

Say you spend several million dollars for a soundtrack album, Houlihan continues, "Who is going to make money off of that? Who's going to recoup?" He then points to another recent picture that paid $600,000 for the publishing of a big hit song and paid a contemporary artist $500,000 to do a cover version. "And it bombed," he says. "You could make a movie for that money. It's crazy, it's insane to spend $1.1 million just to get a song in the can, let alone the video cost and the marketing cost."

According to Bill Bishop, senior director of film and television for Warner Bros. Special Products, the cost of a song depends on a number of factors. "There's nothing that's set," he says. "It's taken on a project-by-project basis. It could be from seven figures to a couple thousand dollars. There are a lot of factors we use to charge with—sometimes it's the budget of the film or the popularity of the band. If it's a little independent film and you've got a band that's just been signed to its first album, then we try and skew that on a lower level priceline."

THE GLORY, THE RISK

Even with the kind of money floating around, there are a number of bands that fall into the extremely difficult to clear category. Pearl Jam, Beastie Boys, Rage Against the Machine and Beck are on that list. "Those artists all have a very important career track to them, and they generally don't care about my popcorn movies," Houlihan says. "And I don't blame them." After all, there is a lot riding on the success or failure of an album for an artist. Take a band like Lit, for example. They had a couple of hit singles off their 1999 *A Place in the Sun* release before putting a song on the *Titan A.E.* soundtrack. Thanks to the movie's D.O.A. status, their song died immediately and there was no saving it. "[A bad movie] can be like cement shoes, and no matter how good the record is, it gets this stigma and this stench of failure on it," explains Houlihan. "Radio station program directors don't want to support it, because it has the name of the movie involved and the movie was a stinker."

Yet, Warner Bros.' Bishop says that artists are more amenable to have their songs included in soundtracks. "Yes, yes, yes. I think the big change came after Whitney Houston's *The Bodyguard*," he says. "I think that album woke people up—it sold like 16 million copies—to the advantages of being on a soundtrack album. It can be monetary, but it can also be exposure. You can use it to get to an audience you are trying to get to. We really don't see that many people saying, 'I don't want to be on a soundtrack,' unless the band doesn't like it for any aesthetic reasons, but that seems to be less and less."

Sometimes a film's perceived potential for failure is as much of a challenge as getting a band interested. Houlihan faced that while looking for bands for *Charlie's Angels*. "Everybody thought that *Charlie's Angels* was going to be Hollywood's latest disaster idea," he reports. "There were rumors coming from the set that there were all these

—CONTINUED ON PAGE 232

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Hitachi America (www.hitachi.com) is now shipping the CMP4120HDU, a 42-inch version of its PDP Plasma Display Panel. Designed for wall-mount or free-standing use, the 42-inch (diagonal), 16:9 aspect ratio display weighs only 72 pounds, is 3.5 inches thick and features a 160° viewing angle. Inputs are switchable between analog RGB (D-sub or five BNCs) or composite video (single BNC, S-type or three BNCs) for connection to computers or any picture source. Resolution is 1024x1024. Retail is $9,995.

Circle 301 on Product Info Card

MUNRO M3F

Munro Associates (www.munro.co.uk) has received THX approval for its M3F digitally controlled active three-way monitor system. The compact M3F system has a depth of only 40 cm, allowing for behind-screen installation, and THX has approved the M3F for use in dubbing studios and small-to-medium film mixing theaters. A digital system controller allows for multiple setups, and the non-volatile memory includes all standard reference curves and a screen compensation filter. All functions are controllable via an RS-485 port; a Windows 95-based GUI is available.

Circle 302 on Product Info Card

SSL ENHANCES AVANT

SSL (www.solid-state-logic.com) announces new software and hardware features for the Avant digital post/film console. Version 4 software includes PanPoint panning, which allows a panning path to be designed on the console bit pad, and SuperGrouper, which can link signal controls such as pans and EQ. DCTM (Directly Controlled Tape Machine) provides synchronizer-free support for parallel tape machine control, while a RIO Grande I/O option adds up to 12 16-channel, 24-bit ADC/DAC cards and up to four 24-channel AES/EBU cards for a total of 192 analog I/Os. Virtual Paddles uses existing physical paddle switches for additional monitoring and recorder control. RIO Grande I/O and MADI interface options are also offered for the Aysis Air and Aysis Air Mobile digital broadcast consoles.

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SHURE FP24 PORTABLE MIXER

Shure (www.shure.com) offers the FP24 portable 2-channel mixer/preamp for pro field production applications. Designed to meet high-res, digital recording noise specs, the FP24 has two transformer-balanced inputs (assignable to the L/C/R outputs), a built-in slate mic, 1kHz oscillator and headphone monitoring amp. Additional features include 6dB/octave highpass filters, adjustable threshold peak limiters, dual-color LEDs to indicate clipping/limiter activity and LED output meters. Housed in a tough aluminum chassis, the FP24 runs on a DC supply or two AA batteries and weighs less than 2 pounds. Retail: $855.

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AMS NEVE LIBRA LIVE SERIES II

The Libra Live Series II all-digital broadcast production console from AMS Neve (www.amsneve.com) features a proven operator-friendly console layout, extensive mix-minus, GPI and other broadcast-specific facilities, a new fault-resilient, rapid-recovery control system, multiformat surround sound options, and 24-bit analog and digital interfacing.

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Representing millions of R&D dollars and more than two years of development, Fairlight's QDC (Quad Digital Channel) technology is designed to greatly enhance the performance, speed, audio quality, graphics resolution and DSP power of the company's digital audio workstations, editors and recorders. Much more than an upgrade, QDC literally transforms the architectures of Fairlight's MFX3plus, FAME2 and Prodigy2 systems into workstations with more tracks, more buses, faster disk access and real-time processing on all channels. QDC has been integrated into all new Fairlight systems shipped since September 2000, with the company's flagship Merlin being initially designed using the technology.

HOW IT WORKS

Essentially, the QDC card replaces the original Digital Channel Card (DCC) with 12 times the DSP performance. Each QDC has eight Analog Devices 21061 SHARC devices and 128 MB of Waveform memory. Real-time, 40-bit, floating-point math is used to maintain headroom during complex algorithms that involve many multiplication steps. A single QDC card has enough DSP for a 32-track workstation like the FAME1 or the largest configuration of the MFX3plus.

The system rack used in a QDC conversion holds up to four QDC cards but is built for (and the architecture firmware supports) up to eight QDCs. Each card is individually configured for the particular Fairlight product by way of plug-in "daughter" boards specified for the user's particular I/O and disk requirements. If required, then multiple rack systems of QDC cards can be supplied. Fairlight's philosophy is to provide a "future proof" platform for audio workstations that stay current for up to 10 years. To this end, QDC makes use of programmable logic from Altera and Xilinx. These devices allow electronic circuit designs to be expressed as software code and loaded on chips. Future significant changes and enhancements to circuitry can be made by way of software downloads rather than component or circuit board replacements.

MAIN FEATURES

Enabling huge gains in productivity, all QDC-enhanced Fairlight products operate the same as before with no perceptible changes in the operator's commands, work surface, tools or job process. QDC provides seamless, gapless punch-in/-out on all 48 tracks simultaneously at 48kHz sample rate and 24-bit depth. This would require playback of 96 tracks of audio from a single hard drive. Andrew Brent at Fairlight confirms that using

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QDC offers simultaneous, real-time crossfading of unlimited duration on all 48 tracks. Another advantage to real-time DSP is, unlike, say, Pro Tools, with Fairlight there is no rendering and therefore no waiting. There are also no delays waiting for audio to "cache" for playback—after a worst-case Locate command, buffering 48 tracks of audio takes less than a second. Further, all waveforms are displayed instantly. A MFX3plus with QDC will show 48 tracks on a single high-resolution screen.

The new AD/DA converters use 128 oversampling and up to 96kHz sample rates. Frequency response is rated at 10 to 20k Hz, +0 dB/-0.25 dB. THD+N is less than 0.0008%, while thru noise is measured at less than -110 dB A-weighted. Other sonic enhancements include a sub-nanosecond, super-low jitter clock that exceeds AES-3 spec and a power supply that (after power-up) re-clocks to the session's sample rate clock. This clever design eliminates interference that can occur in computer-based audio systems, where the switching power supply's clock signal radiates throughout the cabinet. A sample-rate converter can automatically convert all incoming digital audio to the specified output sample rate up to 96 kHz, while maintaining correct time-stamp or timecode information. Also, 16/20/24-bit files can be recorded and mixed freely in any project at any time.

QDC systems are compatible with existing MediaLink systems, with all gear sharing the same network, projects and SFX databases. However, QDC-enhanced systems enjoy double the network bandwidth across the same 100 Base-T connection. Again, this is in keeping with one of Fairlight's basic tenets: to provide the best possible products and a continual upgrade path as significant improvements and new technologies become available. ■

Fairlight USA, 844 N. Seward Street, Hollywood, CA 90038; 323/465-0070; fax 323/465-0080; www.fairlightesp.com.

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

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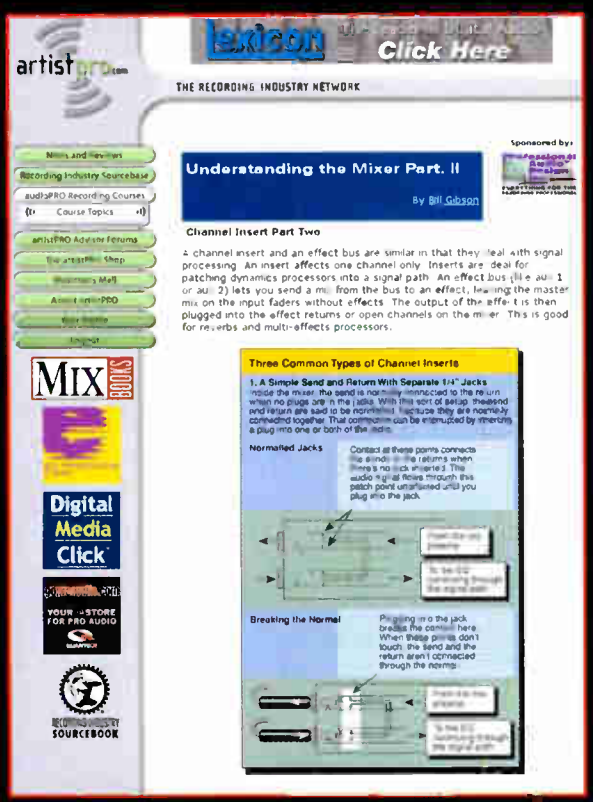

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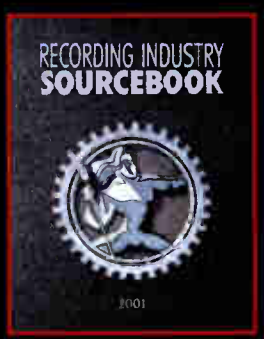

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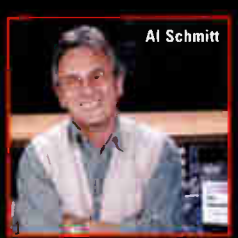

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IP, IP EVERYWHERE...

A TALE OF TWO TRADE SHOWS

Just after the turn of the new year come, back to back, the Consumer Electronics Show and then MacWorld. Both tell a tale of rampart infatuation with the Net (duh) and DVD (double duh). Also evident was an upswing in consumer interest for quality sound for picture and audio in general.

To me, CES is all about distribution. Las Vegas, that's another matter. Anyway, it's distribution of content, audio, video, voice, text and data by shiny, plastic CE gadgets in every conceivable shape and form. The next big distribution channel for all your hard work is radio. No, not Ye Olde FM approach, though that's not dead yet. It's satellite radio, a surprisingly groovy way to receive the same continuous programming from coast to coast. The catch? It's subscription-based. Yup, no free stuff here like the olden days. The content will cost you, and to get these new channels, your car stereo will need to be replaced as well. Kinda like DTV: New content means scrapping the old infrastructure, but new business models await, offering greater revenue than from the moribund mechanism it replaces. Satellite radio focuses on mobile applications, with roving bands of upper-income consumers willing to pay for narrowcast, commercial-free music and talk.

Speaking of rambling Yupsters, DVD has made its way into the dashboard of your ride. DVD-V that is, as car DVD-A players are few and far between. "Dear, take your eyes off Charlize Theron and watch the road or I swear I'll kill ya!" And you thought cell phones were bad.

Another mobile audio item of note: The new DSP-based CD70 "San Francisco" model CD player/receiver from Blaupunkt incorporates a measuring mic for active EQ and selective loudness only at frequencies that may be masked by acoustic noise in the vehicle. Maybe the next model will incorporate active acoustic noise cancellation as well.

Examples of both DVD-A and SACD made a strong showing, albeit as mains-powered models. Home DVD-Audio players were shown by Onkyo, Matsushita, Pioneer, Denon, JVC and Rotel. Most included progressive-scan component video out, so the picture quality approaches that of the audio. Still no "simple" players on the scene, though, that provide CD's ease of use. I expected simple portables at the show, but I guess I'm the simple one, because the only DVD-A portable I saw had the obligatory LCD screen for viewing and navigation.

Also concerning navigation, a disturbing trend was the lack (in many of the players) of a Group button, either on the front panel or remote. The implication here is that some DVD-Audio content cannot be navigated and accessed without a video display attached to the player. This only highlights, along with the continued absence of simple players, the fact that DVD-A is really a red-haired stepchild of DVD-V, at least in the minds of the CE manufacturers.

Parasound had one of the most impressive DVD-A dreadnoughts at the show, a massive pre-production prototype that

BY OLIVER MASCIAROTTE

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BEHRINGER
JUST LISTEN.

solves the Group button dilemma in a novel fashion. Thoughtfully appointed and feature-laden (can you say 1394?), it was my hit pick. The company's approach to not having a Group button? A small color LCD on the front lets you see the video content on the disc whether you're in view of the video monitor or not. How did it sound? Don't know, because very few of the DVD-A offerings were functional displays.

Bright moments came with some manufacturers' recognition, Onkyo being an example, that audiophiles might be purchasing their DVD-A player. They provide a button that disables all video circuitry so as not to contaminate the audio with internal spurious emissions.

I don't know about anyone else, but my CES cohort, Ed, and I both found this year's audio portion of the show to be generally superior to last year's.

DataPlay 500MB optical disc

Better sound all 'round. Some outstanding inexpensive speakers were demonstrated, especially small two-ways that would make excellent, budget-priced surround playback setups.

Now for the bad news: There were lots of el cheapo, multiread DVD-V players with MP3 decoding built-in. There were also so many portable MP3 devices that I gave up counting. Look, even MP3 sounds okay if the bit rate is high enough. Also encouraging was the increasing support for advanced audio codecs. As an example, Ritek's DataPlay-equipped concept piece claimed to support "AAC, AC3, ACELP, ADPCM, MP3, .WAV, WMA and more." What more, QDMC? It's SDMI-compliant and has voice-recording capabilities, by the way.

In case you skimmed the last paragraph, I will again mention a product that's been on my radar for a while. The product, and company, is DataPlay, and they won TechTV's Best of CES in the Lifestyle category. The company offers an outstanding solution to cheap, convenient delivery of prerecorded content in the form of a 500MB, 1.25-inch, read-only optical disc. In addition, consumers can "bake" up their own discs using write-once versions of the media. What's the catch, you ask? The current projected price for blank media, a hefty $10 for the double-sided, 500MB variety and $5 for a 250MB, single-sided version. Appliances should be around the same price as other members of their category, so it's the media that will make or break this format.

From "near-CD quality," we now turn to the other extreme—SACD. Players shown included stand-alone models from Sony, Pioneer and Philips with their new $1,000 multichannel SACD1000. More two-piece transport/processor combos made a showing, from an update to Sharp's existing example to Accuphase's $30k showpiece. Luxman had a nonoperational SACD/DVD-E (DVD-Everything) player destined initially for the Japanese domestic market. The Philips team informed me that their sister company, Marantz, will have a less-expensive multichannel player later this year. Yes! And how did that Super Audio stuff sound? Lovely, as usual. This year, Sony used mid-priced components in its SACD demo suite, so you can't cry foul that their rig costs more money than God.

Before I leave the CES cavalcade, I should mention that home networking, home servers, home Internet gateways, "Internet radios" and Internet appliances were all represented in a myriad of ways at the show. These market sectors point toward an increased public awareness and usage of rich media, streamed or otherwise. NAB attendees and other audio practitioners take note. If you don't have a fast, simple workflow established for AC3, MP3, WMA and QuickTime file production, then you'd better start seriously thinking about it.

I started out mentioning MacWorld, but I'm gonna string you along until next month. Gotta get you to read this stuff somehow! So, if I survive my current projects, we'll talk again in May...■

Oliver Masciarotte lives, works and listens to d23radio in The City by the Bay. Borrowing from Charles Wright's songbook, why don't you "express yourself?" Send comments, criticisms and lush, tropical fruit to bitstream@seneschal.net.

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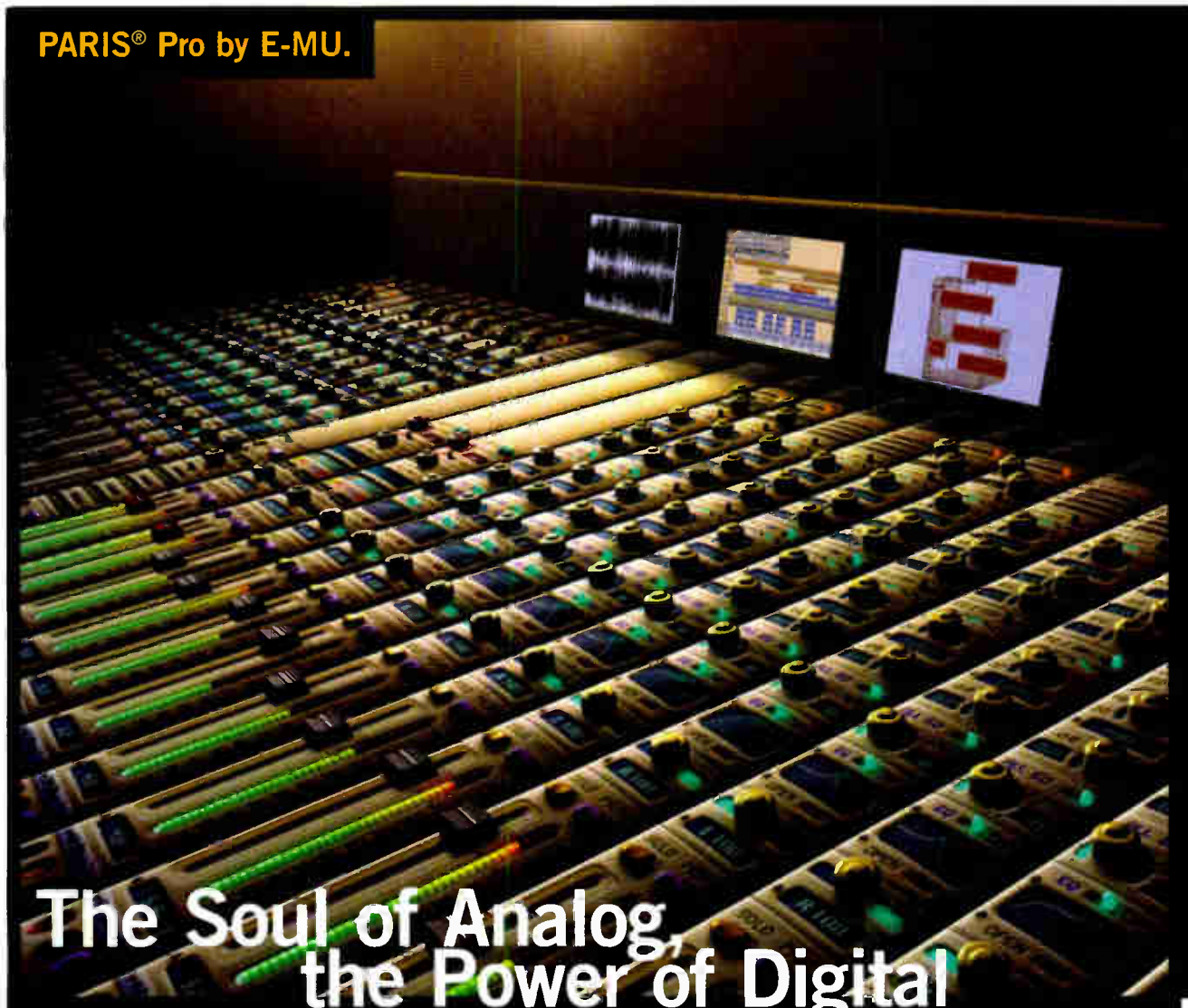

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New Software/Hardware for Audio Production

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Roland's (www.rolandus.com) VS-2480 V-Studio offers 24-track/24-bit recording (at up to 96 kHz), 384 virtual tracks (up to 16 can be recorded simultaneously) and automated 64-channel/34-bus digital mixing with up to eight stereo effects processors. Editing features include 1,000 markers, 100 locators, 999 levels of Undo, ASCII keyboard and mouse inputs for easier editing, and a VGA monitor connection for viewing the most common LCD screens. Each channel has dynamics and 4-band EQ and two stereo effects processors offering reverb, delay, COSM guitar amp/mic/speaker modeling, and a Mastering Tool Kit. Faders can control inputs, tracks, auxes, effects returns and MIDI information. Options include a meter bridge and channel Edit Controller.

Circle 342 on Product Info Card

CYCLING '74 RADIAL

A loop-based composition and performance program for the Mac, radiaL from Cycling '74 (www.cycling74.com) is designed for composition, sound design and live performance. The application offers loop-sequencing functions such as Tempo, Pitch and Sample Editing in a modular environment centered around a "cockpit-style" interface with "loop gauges." Users can create their own modules or work from the provided components within Cycling '74's Max/MSP environment. The software supports .AIF, .WAV and MP3 files; features include sample-accurate loop playback with pitch and time shifting, an automatable modulation matrix, MotorMix support and multichannel I/O, with support for ASIO, ReWire, DirectConnect and VST. A free loop library is included. radiaL will be available next quarter for less than $200.

Circle 343 on Product Info Card

GLYPH FIREWIRE GEAR

Glyph (www.glyphtech.com) announced a FireWire edition of its X-Project drive for the Digi 001 and other DAWs. The unit is optimized for A/V production, configuration is tabletop or rackmountable, and it has 30 MB of storage space with a spindle speed of 7,200 rpm. Because it's FireWire, it has hot-pluggable dynamic reconfiguration, and it automatically mounts on the desktop. Glyph also offers WildFire™, a 3-in-1 CD-RW that writes at 8x, rewrites at 4x and reads at 32x speeds. It's Disk-at-Once Red Book compliant and includes a cable and Toast software.

Circle 344 on Product Info Card

APPLIED ACOUSTIC TASSMAN™ 2.0

Applied Acoustic Systems (www.appliedacoustics.com) introduced Version 2.0 of its Tassman physical modeling-based modular software synth. New in Version 2: support for Dxi and VST plug-in formats, reduced latency, better integration of the Builder/Player interfaces and new sound modules. Other Tassman features include 32-bit floating-point calculations, polyphonic, multitimbral functionality, customizable MIDI support, hundreds of prepatched instruments and synths, full parameter customization of all modules and import/export of audio samples (8- or 16-bit mono or stereo .WAV files).

Circle 345 on Product Info Card

STEINBERG HALION

Steinberg introduces (www.steinberg.net) HALion, a VST instrument sampler. Features include an embedded loop editor with extensive crossfade functions, such as nondestructive editing and automatic identification of zero crossings, a Keyzone window that allows drag-and-drop sample loading and

velocity and layer modification via resizing a keyzone. A variety of filters are built-in; effects include a Fatness function. Samples are streamed directly from disk to eliminate RAM limitations. HALion is compatible with most CD sample libraries; it supports .WAV, .AIF and Akai import, with more format support planned.

Circle 346 on Product Info Card

ANTARES AUTO-TUNE 3

Antares (www.antarestech.com) released Version 3 of its Auto-Tune pitch correction software. The upgrade has a completely redesigned interface with an Automatic mode for real-time correction of pitch problems or a Graphical mode for more detailed work. Auto-Tune now offers phase-coherent pitch correction of stereo tracks and includes a Bass mode that lowers the lowest detectable frequency for correction by an octave, down to 25 Hz, for pitch-correcting fretless bass and other low-register instruments. Target pitches can be set in real time via MIDI, and a Make Scale from MIDI function lets Auto-Tune construct custom scales played from a MIDI keyboard or sequencer. It also now supports 96kHz resolution.

Circle 347 on Product Info Card

STORCASE DRIVE ENCLOSURES

The Data Silo DS351 from Storcase (www.storcase.com) is a steel rackmount enclosure designed to house four 3.5- or 5.25-inch, half-height CD-ROM, optical disk, tape or hard drives, including StorCase's Data Express removable drive enclosures. The 4-bay expansion chassis is available wired and unwired and can support up to four separate host interfaces. The Data Silo DS320 houses two 3.5-inch or 5.25-inch drives, and is prewired for either single- or dual-host interfaces. The Data Express® DE100 is a removable drive enclosure for mounting 3.5-inch, half-height or low-profile SCSI or IDE drives into 5.25-inch, half-height peripheral bays. All Data Express models feature a front-accessible key lock that secures the carrier within the receiving frame.

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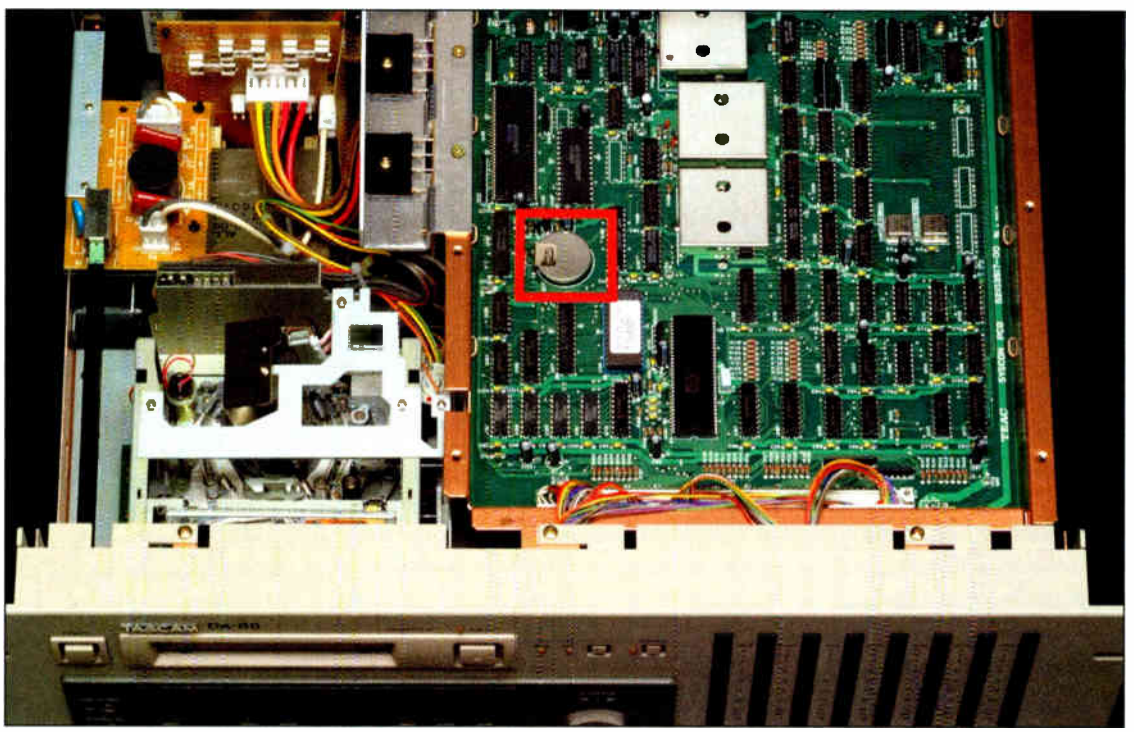
UPGRADES AND UPDATES

Kind of Loud's (www.kindofloud.com) Pro Tools 5.1-compatible versions of RealVerb 5.1, SmartPan Pro, Tweetie, Woofie and the SmartCode Pro encoders are shipping. In addition, Digidesign will bundle Tweetie and Woofie... **Berkley Integrated Audio Software** (www.biasinc.com) announces that **Deck 2.7** is now available. Deck now supports most ASIO-compatible audio hardware. Upgrades to Deck 2.7 are free for customers who purchased BIAS Deck 2.62 or later...**Waves** announces a version of the **L2 UltraMaximizer for Pro Tools 24|MIX TDM** systems (Mac only); visit www.waves.com...**Roland** (www.rolandus.com) continues down the USB path with the **SC-D70 Sound Canvas**, an audio/MIDI interface/synthesizer. The unit has 24-bit A/D/A conversion, GM2/GS, coaxial/optical I/O, MIDI I/O and a mic/hi-Z input... **Bitheadz** (www.bitheadz.com) Retro AS-1 and Unity DS-1 have been updated to Version 2.1.1; both versions now include direct support for the Roland PC-300 USB MIDI keyboard...**Hal Leonard** (www.halleonard.com) has partnered with the Yamaha Music Sales Group (www.yamaha.com) to form **YMH Digital Publishing** to develop Internet-based products...**XyTech** released **MetaVault**, a media asset software system. MetaVault features media content storage database with Search, Inventory and Shipping/Receivng functions; visit www.xytech.com for more information...**LaCie** (www.lacie.com) is now shipping its 10GB, 20GB and 30GB **PocketDrives™**, which measure 3.5x5.75x0.6 inches, weigh less than a pound, and offer USB and FireWire support...**Luxor** debuts the **LCT-15**, an oak mobile computer workstation desk with a 3-tier computer workstation setup with recessed monitor well, CD storage rack, pull-out keyboard shelf, CPU tower holder and more. Check it out at www.luxorfurn.com. ■

DA-88 Maintenance, Upgrades and Tweaks

OPTIMIZING THE PERFORMANCE OF YOUR TASCAM DIGITAL MULTITRACK



Tascam DA-88 with cover removed. The orange box spotlights the location of the five-year-life lithium battery that supplies power to the unit's memory settings. DA-88s have been shipping for eight years, and a DA-88 or other MDM that exhibits erratic behavior may simply need a replacement battery. Worse yet, old batteries may start to leak or corrode, possibly damaging the circuit board.

For any product, environment can affect the MTBF (Mean Time *Before* Failure). This is especially true for tape machines, where air quality can contribute to MTBF as much as the type of use or abuse. The Tascam DA-88, for example, has a fan that draws air through the tape slot, among other spaces, potentially accelerating mechanical component degradation when the air quality is in the negative.

Note how the following three environmental examples can affect the MTBF: a post house that relies heavily on tape is likely to have the machine turned on 24/7, a power user; workstation users may need access to tape but mostly work "offline," constituting intermediate use; weekend warriors—who always wish they had more time—would be classified as inconsistent users, hot and heavy some weekends, possibly dormant for many weeks.

In each of these cases, understanding the environment can help predict, prevent or minimize downtime during periods of critical need. If the post house's DA-88 was installed in a proper video machine room—where air quality control is an art—then it could be "on" 24/7, yet stay relatively clean and likely go for longer intervals before requiring major service. In a more typical control room environment, turning a "stock" machine off when not in use will minimize the collection of accumulated dust. High humidity will shorten the MTBF of any videotape-based, helical scan recorder. This is especially true for the earliest DA-88 version—now eight years old—because its nonanodized reel table clutches have been redesigned three times since and are now stable (for a wear-item part).

Note: The information in this column could be dangerous in the wrong hands. Trying to help two diverse groups—users and technicians—could potentially compromise the material. All tape machines should get a routine inspection every 250 to 500 hours, especially if you aren't the type to pop the hood and at least take a look-see. Also, establish a relationship with a service company: There's a rea-

BY EDDIE CILETTI

They say, "If it ain't broke, don't fix it."

But we just couldn't help ourselves.

Introducing Auto-Tune 3

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Hailed as a "holy grail of recording" by *Recording Magazine*, Auto-Tune is used daily by thousands of audio professionals around the world. Whether to save studio and editing time, ease the frustration of endless retakes, save that otherwise once-in-a-lifetime performance, or even to create unique special effects, Auto-Tune has become the professional pitch correction tool of choice.

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FOR METICULOUS TWEAKING, the Graphical Mode displays the performance's detected pitch envelope and allows you to draw in the desired pitch using a variety of graphics tools.

KEY NEW FEATURES OF AUTO-TUNE 3 INCLUDE:

- "Source Specific" processing algorithms that provide even faster and more accurate pitch detection and correction.
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- High sample rate (96kHz) compatibility
- A Bass Mode that optimizes pitch correction of low bass range instruments.
- The ability to set target pitches in real-time via MIDI from a keyboard or sequencer track.
- A new Make Scale From MIDI function that lets you play a melody from a MIDI keyboard or sequencer and have Auto-Tune 3 construct a custom scale containing only those notes that appear in the melody.
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Auto-Tune 3

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sonable chance life can be extended and maintenance costs reduced via scheduled maintenance.

NICE HEAD

Like a used car, tape machine usage is judged by head hours, not just the "on" hours. Yet being "on" and in a negative environment, for a stock DA-88, invites foreign matter into the transport area. No counter keeps track of that. The fan reversal and filter modification detailed at www.tangible-technology.com is very effective at trapping airborne contaminants before they can muck up to the transport. There are plenty of digital tape machine tips on my Website. Your feedback is welcome.

In light of California's power deregulation mistake—don't get me started—I wouldn't suggest that you counteract high humidity by leaving the machine on (even with the added filter). Note that DA-88s were shipped with a silica gel pack. For humid environs, mount the machine in its own rackcase with the silica gel pack tucked inside. Put the front and rear covers on when not in use. With luck, the heat generated when the machine is on will "reset" the pack for the next storage period. If not, then the food dehydrator specified on my analog tape restoration page is a good choice.

TENSION IN THE CASSETTE SHELL

Since the dawn of the ADAT, it is often recommended (and I concur) that users fast-wind new tapes before recording or formatting—primarily to redistribute the tape pack. New tapes may have higher tension than rewound tapes, so this is one source of potential wear or instability during that first important recording. Depending on whether the tape is wound in the shell or through the transport, some shedding may occur, but contrary to myth, tapes that are shed-prone don't just "fix" themselves. Loose bits of oxide have to go somewhere.

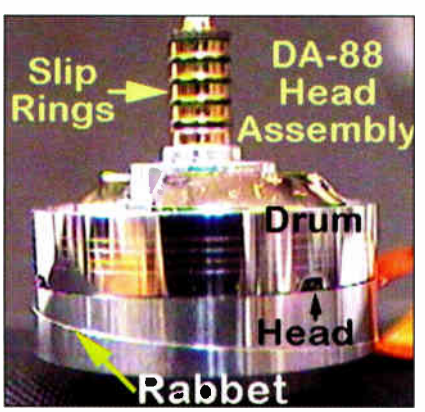

Figure 1a: DA-88 head assembly detailing the "rabbet."

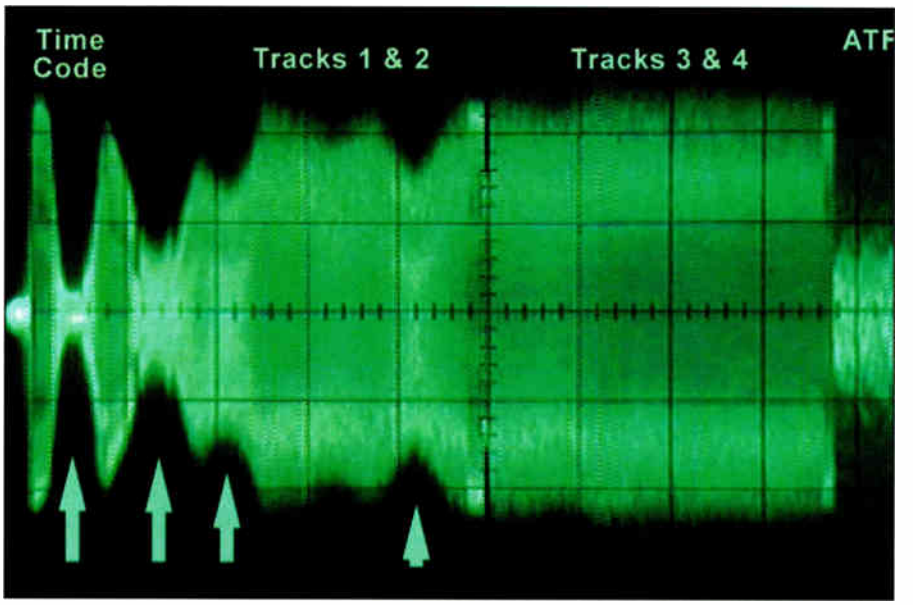

Figure 1b: Not a pretty bunny; the RF Envelope (the signal from tape) is compromised when the rabbet is clogged, as indicated by the arrows. The scope image should be "square."

After the earliest DA-88s rolled off the assembly line, a "self-cleaning" mechanism was added, and a retrofit kit is still available. (The part and not the labor, which is minimal, is covered under warranty.) The kit comes in two pieces; the most essential being a sharp Ruby "scraper" that removes surface oxide before it can contaminate the heads. Keep in mind that tape edges also contribute to the shed factor and are not addressed by the scraper.

Look at the bottom of the stationary guide just to the left of the capstan shaft. If you see black, then the "rabbet," the bottom ledge along the circumference of the head drum, is also likely to be contaminated. Figure 1a zooms in on a DA-88 head assembly—the rabbet is the ledge around the circumference of the head drum. Figure 1b shows how a clogged rabbet affects RF output, especially at the left side of the head where the tape enters. This condition, which can happen to any DTRS model, will compromise the machine's ability to read timecode, as well as tracks 1 and 2. Cleaning the rabbet is a technician's job. Don't try this at home, kids.

EC'S OBSESSION

I have two obsessions regarding all tape recorders: The mechanism should be gentle to the tape, and the tape, via tension tweaks, should be gentle to the heads.

The most significant issue for a digital tape recorder is the efficiency that data can be exchanged with the tape. When all parts are new, there is a significant amount of "data headroom." A new head needs less tension than an "old" head. As parts wear, this headroom is diminished until the errors can no longer be concealed. The best preventive maintenance will be repeated ad nauseum here: Check the error rate and learn how to manually clean the heads.

Head life is most significantly affected by tension, not just in play, but in reverse play, when the former supply reel temporarily becomes a take-up reel. It is easy to overlook this measurement, and when the supply reel clutch is defective, the tension across the heads in Reverse Play mode can be double the specified range.

"BACK" TENSION?

This term describes the supply reel tension applied to the head assembly when in Play mode. On all DTRS transports, back tension is adjustable via black coiled spring as detailed in the January edition of "The Tech's Files" (as a picture) and this month as a drawing. But it's not as simple as that, because there is also a tension arm position adjustment, and the two "tweaks" interact with each other.

Figure 2, from the DTRS manual, indicates the optimum position of the tension arm. This is one adjustment

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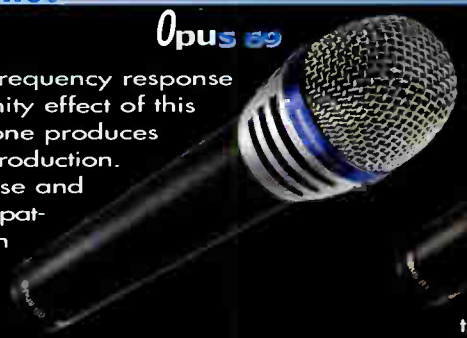

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Instrument Microphones

Opus 51

A boundary microphone, the Opus 51 captures direct and reflected sounds from an instrument in perfect balance and at an equal level. This microphone is ideal for capturing the full sound within an instrument such as the piano or bass drum.

Opus 65

The Opus 65 is built with a 1.5 inch diameter diaphragm within a powerful neodymium magnet. The Opus 65 requires little or no equalization to produce the natural sounds of low frequency producing instruments, virtually eliminating the problems incurred by other kick drum microphones.

Opus 83

The Opus 83 is a condenser microphone ideal for drum and percussion overheads, cymbals, and acoustic instruments. Built from solid brass, the casing of the microphone protects the sensitive element from the rigors of the road.

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that I feel could be more precisely detailed. I start with the tension spring set to minimum, playing a fully rewound 113-minute tape to set the tension arm position. Only afterward should the tension be measured. The "spec" is 10 to 12 gram-centimeters (g-cm); it is often 14 to 16 g-cm on older machines, and, in my opinion, 10 g-cm should be the maximum value.

The point of optimizing the tension arm position is so that the machine will not be fussy at the head of longer tapes. The addition of the self-cleaning mechanism narrowed the usable range of the adjustment.

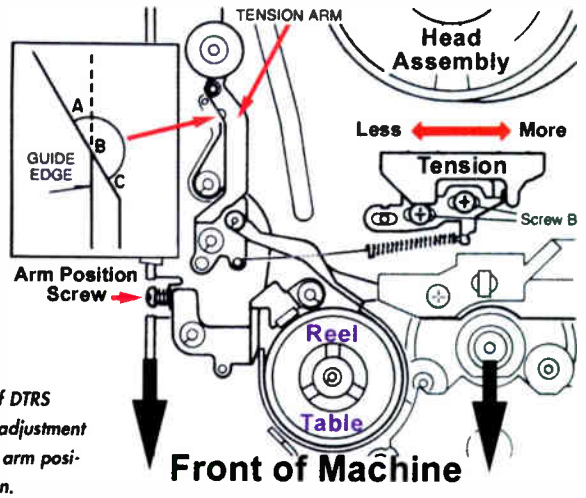

Figure 2: Drawing of DTRS transport indicating adjustment locations for tension arm position and back tension.

DA-88 UPGRADE LIST

You might be surprised at how many DA-88s still have their original heads. This is not a comment on the machine's genetic disposition, just an indication that some older, low-mileage machines come in for service needing many of the factory upgrades. I still get them. DA-88s before serial number 100000 were made around 1993-ish, while serial number 320000, for example, is circa 1995. The fifth- and sixth-place digits are lot numbers. In these examples, lot 10 and lot 32, respectively. If you own or encounter one of the older, low-mileage decks, then it should be overhauled sooner rather than later.

Here's a partial list of DA-88 updates (with an error message in parenthesis when applicable).

1. **self-cleaning kit:** This two-part kit consists of a sharp Ruby "scraper" that is highly effective at removing loose debris from the tape before it gets on the heads. A second rather annoying sub-assembly periodically dabs the heads in an attempt to clean them.

2. **slide cam:** This simple piece of plastic engages the brakes and tightens the clutches. The difference between old and new parts is a smoother transition to a notch that sets up the Fast Wind mode.

3. **slide cam lever/actuator: (S-err-31/41)** There are three possible Fast Wind failure modes: bad solenoid, bad solenoid circuit (cold solder joints) and a

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1-Computer Music, January 2001; 2 Sound on Sound, January 2000
** - Dependent upon CPU resources. Multicard drivers for Mac coming soon.*

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damaged lever arm, the latter caused by a fracture at the bend in the metal work. The crack is hard to see, even when you know it is there. See Fig. 3.

4. **reel tables:** Redesigned three times, and one of the primary annoyances is the interaction of the black optical encoder disc with the lower portion of the reel table clutch. Over time, the black shaft compresses and creates friction. The new reel table design seems to have solved this problem.

5. **cam and sector gear: (S-err-11)** A limited run of DA-88s—with serial numbers between (approximately) 240000 and 360000—suffer from this "stuck loading guide" error message. Under-spec pin length causes damage to a plastic cam.

6. **back tension coil spring:** When replacing the back tension felt, a "silver" coil spring on the underside of the assembly ensures positive contact with the tension lever position adjustment mentioned above and detailed in Fig. 2. This spring was modified both to facilitate reassembly and to ensure positive engagement.

7. **back-up battery:** The three VDC lithium backup batteries should be periodically checked to make certain it measures 2.6 volts or higher. Even more important, inspect for leakage before circuit board damage is beyond repair. I use a different battery than recommended, because its vapor seal minimizes "battery exhaust" that can eat copper circuit traces.

Figure 3. A hairline fracture of the slide cam lever can cause fast wind failure (S-error 31/41).

8. **slant blocks:** The slant block is the lower portion of the loading guides. When there isn't a tape in the machine, they are loose to the point of seeming to be broken. This is normal. They become "precise" once fully extended and pressure fit against the "V" guides. Slant blocks are perhaps the most mysterious parts in all digital audio recorders, because they are difficult to measure and there are no adjustments except for guide height. There should be a front-to-back tilt adjustment to minimize curling, especially in the exit guide.

9. **lubricant:** For all helical tape transports—DAT, ADAT and DTRS—any lubricant applied to the loading guide paths should be wiped clean, leaving only a molecular layer. Tape that accidentally becomes slack and makes contact with the lube will become very attractive to a head spinning at 2,000 rpm!

Happy Motoring! Next month: under the hood of a Tascam DA-78HR. ■

For more information about maintaining your gear in top shape, visit Eddie Ciletti's Website at www.tangible-technology.com.

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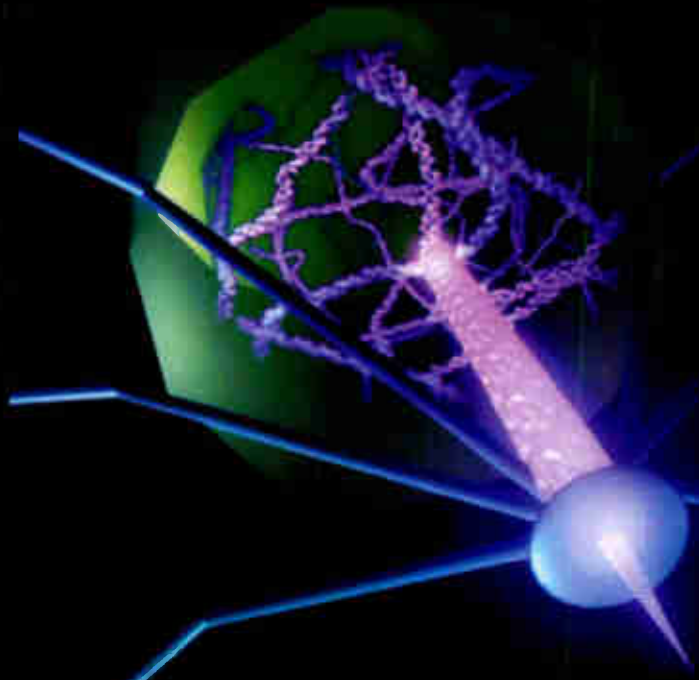
Electronic Musician 2001 EDITORS CHOICE



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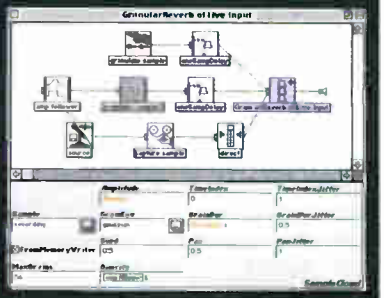
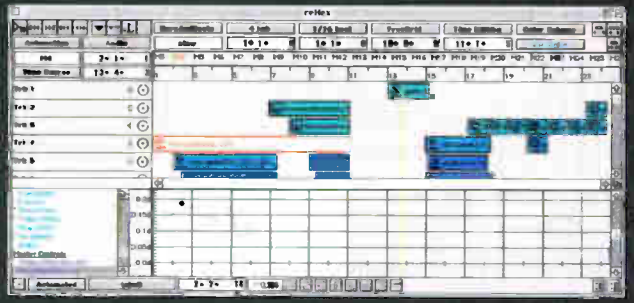
Create unlimited chains of synthesis, processing, and sampling modules in the graphical signal flow editor. Control any parameter with MIDI or use the output of another module as a control signal. Even the audio inputs to the Capybara are represented as modules in the signal flow editor, so you can turn Kyma into a reconfigurable effects box as well as a reconfigurable synthesizer and sampler.



Use the sound browser to quickly test out any processing algorithm on any source signal as well as to locate, audition, or get into on any of the over 400 signal flows, samples, and analysis files that come with the initial Kyma sound library.

Hybridize and cross-synthesize two different sounds, or morph gradually from one sound into another using the spectral processing tools in Kyma: an ultra-vocoder module, live spectral analysis and synthesis modules, and a graphical spectrum editor.



Arrange and layer your sounds by dragging them into a time line. Assign a time-varying pan position to each track; Kyma will route the sound to up to 8 discrete output channels. Since Kyma sounds are generated in real time, you can continue to tweak the parameters as you listen.

Design virtual devices and custom control surfaces without having to write a single line of code. Let Kyma format your virtual control surface automatically, or lay it out yourself using the graphical editor. When a sound is playing, choose settings from a list of presets, and save your own presets for the future.

All synthesis and processing is done in real time by the Capybara·320 Sound Computation Engine: 4-28 80 MHz DSPs completely dedicated to sound, 96-672 MB of sample RAM, 4-8 audio I/O channels (24-bit 100 kHz analog and S/PDIF and AES/EBU digital), word clock and house sync inputs, VITC and LTC in and out, MIDI in/out/thru.

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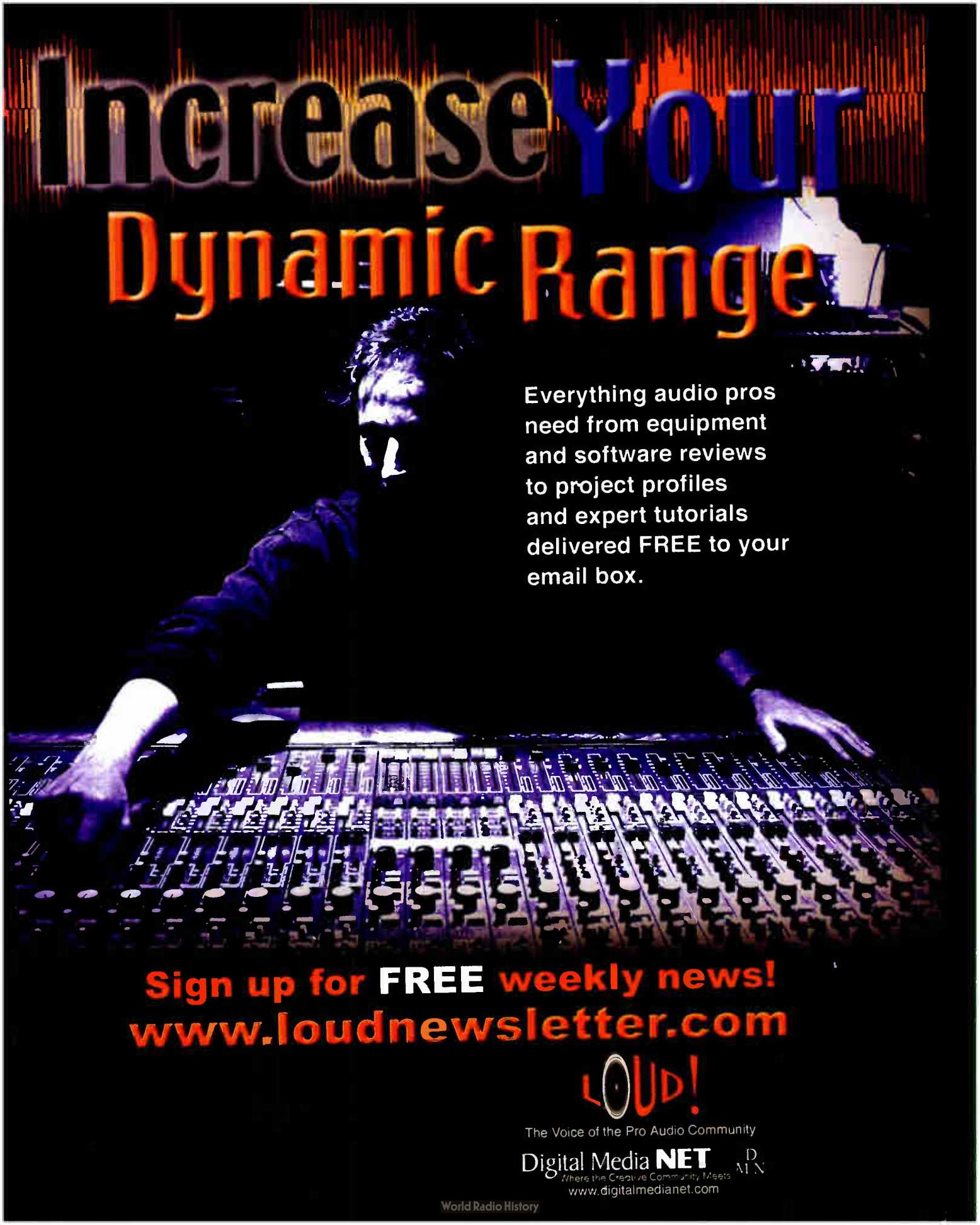

PREVIEW

ART A/D MIC PRE/ DI BOX

ART's (www.artproaudio.com) DI/O Preamp System is a combined microphone preamp/DI box offering simultaneous operation to analog and digital outputs, including S/PDIF, TOSLINK or ADAT. Sample rate is adjustable from 44.1-96 kHz; the system also syncs to ADAT or external word-clock. An insert loop provides access for additional signal processing or direct A/D converter access. Variable Valve Voicing in the mic pre's 12AX7A gain stage presents various tube voicings tailored to vocals, guitar, bass and acoustic instruments. Two analog meters monitor levels, while an output limiter controls overshoots and normalizes levels before digital clipping.
Price: $319.

Circle 327 on Product Info Card

SPECK 4-BAND PARAMETRIC

Speck Electronics (www.speck.com) is shipping the Model ASC single-channel, 4-band parametric equalizer. The ASC features -12dB/+6dB front panel gain control and 12 controls for equalization adjustment that covers the audio spectrum from 20-25k Hz. Designed for recording studios, touring sound systems and commercial installations, the ASC offers +28dBu headroom and exceptional audio specifications. The rear panel has both XLR and TRS inputs and transformer-balanced outputs.
Price: $645.

Circle 328 on Product Info Card

CREST VOICE PROCESSOR

The Studio Series ST2 from Crest Audio (www.crestaudio.com) is a 2-channel voice processor with mic/line preamp sections, 4-band parametric EQ and tube-sound processing for each channel. The two channels can be mixed on the stereo bus or sent in mono to their respective outputs. Inputs are XLR and ¼-inch, and the mic inputs offer a 20dB pad, polarity reverse, +48V phantom power and a highpass filter. EQ is high- and low-shelving sections and two fully parametric mid filters. Also featured are 10-segment LED meters, direct (pre-pan) unbalanced outputs and unbalanced I/O inserts for more processing.
Price: $699.

Circle 329 on Product Info Card

RADIAL INJECTOR GUITAR DISTRO

The JD7 Injector from Radial Engineering (www.radialeng.com) is a guitar signal distribution/routing system housed in a single-rackspace enclosure. Providing inputs for two guitars (with a selectable 8dB pad on Input A for matching levels among humbucking and single-coil pickups), the JD7 has seven discrete outputs, two of which are equipped with effects pedal loops. Output 7 offers both guitar level (TRS) and balanced mic level (XLR) outputs for direct recording of the "dry" signal. The unit also includes Jensen transformers. Price: $700.

Circle 330 on Product Info Card

ROLLS PREAMP/ COMPRESSOR/ LIMITER/GATE

Rolls (www.rolls.com) debuts the CL151 GLC single-channel compressor/limiter with mic preamp and noise gate. I/Os include XLR and unbalanced ¼-inch inputs, unbalanced ¼-inch output and ¼-inch sidechain insert. The soft-knee compressor has threshold and ratio controls; gate threshold and release times are also adjustable. The CL151 GLC can be used as stand-alone or mounted in a rack tray with similar units. Price: $120.

Circle 331 on Product Info Card

CABLE MEASUREMENT TOOL

The Megger CLM200 from Biddle Instruments (dist. by Jensen Tools, www.jensentel.com) is a handheld unit that measures the length of telecommunications, data, audio and power cables, whether on drums, in cut lengths or already installed. The CLM200 will measure up to 6,000 feet and detects opens and shorts, providing distance to the fault. Any cable type can be measured, and the unit is preprogrammed to measure 26 different standard cables accurately. Connectors are male and female BNC, with a supplied alligator clip adapter.

Circle 332 on Product Info Card

PREVIEW

SURGEX SURGE SUPPRESSORS

Frontier Electronics' SurgeX (www.surgex.com) division debuts the SX1115 Series of rackmount surge suppressors/power conditioners, available with six switched and two unswitched AC receptacles on the rear panel. The $459 SX1115RL has a dimmer control with connectors for Littlite gooseneck lamps, while the $499 SX1115R and SX1115RT models offer an additional unswitched front panel outlet. The RT includes a remote turn-on function and a Phoenix connector for interfacing to sequential power-up/-down controllers such as the SurgeX SX2120 SEQ.

Circle 333 on Product Info Card

SUMMIT TUBE DI BOX

Summit Audio (www.summitaudio.com) has introduced the TD-100 tube direct box. Featuring a 12AX7A/ECC83 tube circuit, the TD-100 also includes a variable input impedance (loading) control for matching instrument output to input impedance. With output signal available at mic or line-level, the unit may be used as an instrument preamp or, with 600-ohm headphones, as a practice amp. The half-rack unit includes polarity reverse and ground lift switches, level and peak-hold LEDs and an internal power supply. Outputs are balanced XLR and ¼-inch TRS. Price: $495.

Circle 334 on Product Info Card

NOREN ACOUSTILOCK CABINETS

Noren Products (www.norenproducts.com) offers the Acoustilock fanless cabinet, which isolates noisy equipment within an acoustically sealed and vibration-damped cabinet and dissipates equipment-generated heat passively. Two models provide up to 600 watts of waste heat dissipation and 32.5 dBA of noise reduction.

Circle 335 on Product Info Card

SAMSON S-CLASS PROCESSORS

Samson (www.samsontech.com) intros its S-Class rackmount processors with five models, including three dynamic processors (two 2-channel and one 4-channel) offering Expander/Gate/Compressor/Limiter functions, a 4-channel headphone amp and a three-way stereo/four-way mono crossover. Prices range from $220 to $290.

Circle 336 on Product Info Card

DOLBY SHIPS MULTICHANNEL AUDIO TOOL

Dolby Laboratories (www.dolby.com) is now shipping the DP570 Multichannel Audio Tool, a cost-effective, 2U rackspace unit that simplifies the process of monitoring multichannel audio and creating Dolby Digital metadata. The DP570 provides separate multichannel, stereo and mono outputs for feeding three sets of monitor speakers and allows the user to hear the effect of metadata in real time, while preparing soundtracks for ultimate delivery as Dolby Digital bitstreams. An 8-channel router can reconfigure program material in nonstandard track formats, and additional features include reference-quality, 24-bit, D/A converters and flexible Ethernet, RS-485 and GPI/O control. The unit features both digital and analog outputs, along with a metadata output suitable for connection to a DP569 Dolby Digital encoder or DP571 Dolby E encoder. The DP570's price is $6,495; a version that ships without the Cat. No. 548 Analog Option Card is $4,995.

Circle 337 on Product Info Card

SOUNDMAN "EARBUD" MIC

The Soundman OKM II stereo microphone (dist. by Independent Audio, www.independentaudio.com) is designed to be worn as an "earbud" headset, allowing for natural binaural stereo recordings of music, sound effects and interviews. Available in high-SPL versions and with either mic or line-level outputs, the OKM II is priced between $155 and $395.

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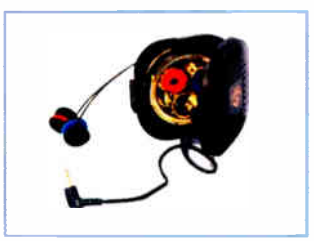

PRODESK STUDIO FURNITURE

ProDesk (www.prodesk.be) offers a line of modular furniture for audio and video workstations, project studio mixers and computer-based music systems. Several basic configurations are offered, and the modular systems are

PREVIEW

easily combined or extended for larger work surfaces. Features include black melamine finish, overbridge shelves for audio and video monitors, and a built-in 12U (21-inch) rack on most models, with other rack versions available.

Circle 339 on Product Info Card

LUCID'S DIGITAL DA

Lucid (www.lucidaudio.com) has introduced four digital audio distribution amplifiers. The AESx4 receives either Word Clock or AES audio and distributes it to four AES-connected units. The CLKx6 passes sync information, in Word Clock or Superclock format, to six parallel outputs. The SPDIFx7 accepts S/PDIF stereo audio and feeds it to four S/PDIF and two TOSLINK optical outputs and also to one AES output. Distribution in multiple formats is simultaneous. The GENx6 can distribute Word Clock or Superclock to six BNC outputs; the unit can also be used as a stand-alone clock source, generating Word Clock or Superclock at 44.1 or 48 kHz. The Lucid DAs are priced at under $600.

Circle 340 on Product Info Card

MBHO LOLLYPOP

MBHO (dist. by Music Trade Center, www.inditec.com) offers the MBNM 608 Lollypop multipattern condenser microphone. Offering a selection of cardioid, omnidirectional and figure-8 patterns, the 608's capsule design features a double diaphragm, gold-sputtered membrane and a brass back plate. Frequency response is 5-20k Hz; max SPL is 133 dB.

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BEYERDYNAMIC OPUS 69 AND 81

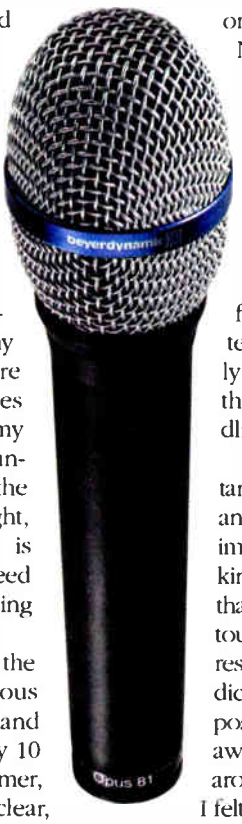
DYNAMIC AND CONDENSER PERFORMANCE MICS

Beyerdynamic's latest performance mics are the Opus 69 and the Opus 81. The $299 69 is a supercardioid dynamic intended for live sound applications, ranging from vocals to miking instruments and cabinets. The $425 81 cardioid condenser (back electret) is equally usable onstage and in the studio for vocals and acoustic instruments. The mics offer a black matte finish, sleek styling and rugged construction, built to endure long outings on the road; both include mic clips and padded carry bags.

THE OPUS 69

Boasting a respectable frequency response of 35 to 16k Hz, the 69 was a solid performer in live sound situations. On vocals, I set up the 69 for the lead vocalist in a local rock band. With a full P.A. and live drums, I A/B'd between the 69 and the SM58s that we normally use. The first thing I noticed was the level difference and the clarity; I normally spend a good amount of time fighting with the gain and the EQ to get the lead vocal to cut through. With the 69's noticeably higher output and excellent rejection, I could back the gain way off while preserving a great-sounding signal. The 69 produces a pronounced midrange boost that provides a bright sound without requiring EQ. All of this yields a very clear and easy-to-use signal.

The 69's extremely tight pattern does wonders to reduce leakage, but performers who sing while playing or moving around a lot should get acquainted with this mic before going onstage. In my studio, I set up the 69 for some demo work and tracked my own vocals and a direct guitar line. In playing back the material (without adding compression), I noticed substantial level differences in my vocals on each of the more difficult chord changes where I was turning my head. After a few run-throughs, I was used to the 69's pattern—this tight, supercardioid response is something performers need to know about before using this mic.



On acoustic guitar, the 69 seemed an obvious choice. On a boom stand positioned approximately 10 inches from the performer, the 69 sounded great—clear, uncluttered, full and warm. The same applied to guitar and bass cabinets; the 69 rocked on both a Fender Princeton and a Peavey TNT bass amp. The mic had no trouble with high SPLs, and its handling of heavily effected guitar tones was exactly what one would expect from a mic of this caliber.

THE OPUS 81

The Opus 81 has a stated frequency response of 50 to 18k Hz and a max SPL of 138 dB. The capsule is fitted with a tight mesh covering, which doubles as an internal pop screen and protective cover to keep saliva and dirt out of the condenser element.

On lead vocals, the 81 sounded like a happy medium between a high-end dynamic and mid-level studio condenser. It didn't quite have the warmth, character or features of, say, a RØDE NT-2, but it sounded noticeably fuller and richer than any of the dynamics I paired it against. This mic would be an especially good fit for younger performers, quieter singers, and softer, more nuanced performances. The mic's internal pop screen was fairly resistant to plosives, and the 81 had almost no handling noise.

I also tried the 81 on guitar and violin in the studio, and the mic continued to impress me, providing the kind of clear, pristine signal that you almost don't want to touch. On guitar, the 81's response was flat and predictable, with the performer positioned six to 12 inches away and even swaying around a bit. With the violin, I felt the need to keep the performer on the mic a little tighter, but, again, the 81 provided a realistic and uncolored signal.

CONCLUSIONS

For performers who play in less-than-ideal locales, where the mic selection leaves something to be desired, a complement of Opus 69s for your vocalists will do wonders to improve your overall sound. The Opus 81 could be a dream come true for performers working pro venues where phantom power is available. These are two mics that you'll definitely hear the difference.

Beyerdynamic, 56 Central Ave., Farmingdale, NY 11735; 631/293-3200; fax 631/293-3288; www.beyerdynamic.com. ■

Robert Hanson, Mix's editorial assistant, is a musician/producer who somehow manages to survive in San Francisco.

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HHB CDR830 BurnIt

STAND-ALONE CD RECORDER

Just five years ago, CD burners were too expensive for the smaller studio. But today, with the advent of computer-based CD-R drives, nearly everyone seems to have CD burning capability. And, while computer-based systems have their advantages, I prefer the quality and ease of a stand-alone for most burning. Not having to load the master into the computer every time I want to burn something is a definite plus.

HHB's new CDR830 BurnIt is not only the company's most affordable unit, but it also offers several advantages for straight digital burning over its counterparts, HHB's 850 and 850 Plus.

NUTS AND BOLTS

In creating the 830, HHB eliminated some of the unnecessary inputs on the 850 to create an ideal unit for the project studio market. Gone is the AES input; this makes sense, as AES doesn't transmit CD subcode data. Gone too are the XLR inputs/outputs. The 830 does have both coaxial and optical S/PDIF inputs and outputs and RCA analog I/Os. The unit includes a full-function remote control, offering one-touch access to many of its features. The Automatic Fader and Next Track functions can only be used from the remote.

Standard 830 features shared by other HHB burners include: an automatic adjustable fade in/fade out, SCMS-free recording (though you can set the SCMS status of the CD you are recording), built-in sample rate conversion (for recording from 48kHz DATs) and the ability to set the volume level at which start IDs trigger. Three recording sync modes are offered: 1-track, All Track and All Finalize, depending on how many tracks you want to record from your source. For some reason, in All Finalize mode, the 830 takes almost four minutes to "fix" the mastered CD. If you just hit Finalize when you are done, then it takes only two minutes.

Several new bells and whistles on the unit make it stand out at this price point. Sonically, the 830 excels with its 24-bit AD/DA converters. The 24-bit Delta Sigma D/A converter has a beautiful, warm, balanced sound, clear in the highs with excellent stereo separation. The 24-bit A/D converter, while not of the quality of an Apogee or Benchmark, does a good job when mastering from an analog source.

Unless I needed a CD-R with wordclock sync, I would choose the 830 over HHB's 850 and 850 Plus because of the unit's digital volume control. This feature allows you to boost/cut the volume of a digital signal either prior to mastering or while mastering, and it also provides left and right balance control for evening the levels on an imperfectly mastered tape. The 830 also lets users create CD text on master CDs. With this feature, you can store the disc name, artist name and track names on the CD. When played on a player that supports it, the information will read out on the screen. The text feature lets you choose between upper- and lowercase letters, numbers and several characters.

IN USE

I burned several CDs from my live DAT recordings, sending the signal from a Fostex D-5 DAT via the optical input, and I also burned CD copies using the coaxial input, taking a digital feed from a Nakamichi MB-10 CD changer. The 830 worked like a champ.

The digital volume control was easy to use and a real blessing for fine-tuning adjustments. While the remote can operate the digital volume control, I preferred to use the knob on the front of the unit, turning it to boost/cut levels as needed. While recording a Utah Phillips show, I was able to quickly cut the spikes from crowd noise and applause by dropping levels -6 dB, then raising the levels back up to standard input during the music. After deliberately recording another show at low volume, I boosted the levels up +5 dB on the CD, as I mastered it with almost no audible deterioration. Using the remote control to create a fade in and out at the start and end of the CD was a snap.

The CDR830 BurnIt is ideally suited for use in the recording studio or broadcast environment. The sound quality is superb, and the unit has the usual HHB reliability. In summary, this is an excellent CD burner at a $795 price that's hard to beat.

HHB Communication USA, 1410 Centinela Ave., Los Angeles, CA 90025; 310/319-1111; fax: 310/319-1311; www.hhbusa.com. ■

BY CANDACE HORGAN

Candace Horgan is a freelance writer based in the Denver area.

Digital Audio Essentials

from the digital audio interface experts

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Digital Detangler automated digital audio patchbay

Available with 8x8 or 16x16 inputs and outputs. Supports AES/EBU, S/PDIF optical & coaxial, ADAT Lightpipe optical (no format conversion to and from ADAT format). Mix and match port configurations to build the perfect solution for your studio (standard configurations also available).

Rack-mount sample rate converters

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Digital Detangler Pro automated digital audio patchbay

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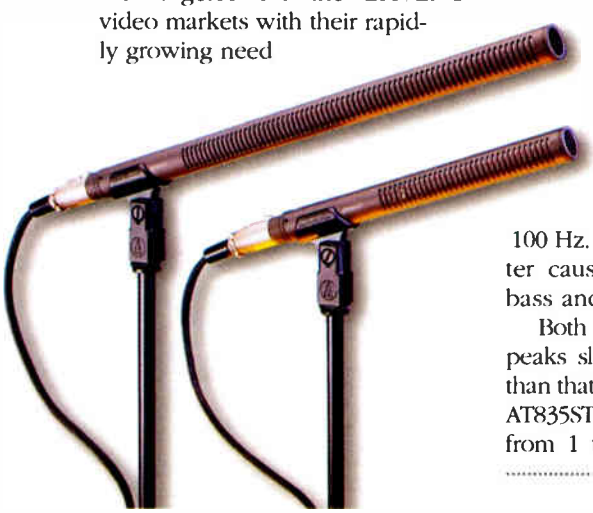
AUDIO-TECHNICA AT835ST AND AT815ST

STEREO SHOTGUN MICROPHONES

In the rapidly changing world of pro audio, taking things for granted may not be a good idea. If you think you know what to expect from a stereo shotgun mic, then you might accidentally dismiss Audio-Technica's 9-inch AT835ST ($899) and 15-inch AT815ST ($999). The most obvious thing about these two mics is that, in addition to being conventional shotgun mics, they offer both M/S (Mid/Side) and L/R stereo (with both narrow and wide L/R spreads).

Both mics come in a vinyl box with a mic clip, foam windscreen and a 5-pin XLR that plugs into the mic and splits into a pair of 3-pin XLRs. The diameter of each mic is slightly larger than a Sennheiser 416, but small enough to fit properly in a standard rubber, Rycote boom mount.

Both mics use the same two electret capsules; a front-facing line-cardioid "mid" capsule and a figure-8 "side" capsule mounted directly behind the mid capsule. Both mics require 11 to 52 VDC at 4mA phantom power. The longer AT815ST weighs less than five ounces and the AT835ST less than four ounces. This makes them well-targeted for the EFP/ENG video markets with their rapidly growing need for stereo ambient sound or any other stereo sound gathering application where weight is a factor.



Using the line-cardioid capsule only in M/S mode, I found the sensitivity of both A-T mics was 1 or 2 dB below my Sennheiser 416 and 816, and the A-T mics were heard a bit more off of the sides and to the rear. The level of self-noise was about the same, although the spectra of the self-noise was different. The Audio-Technica mics made sort of a "hiiiiiih" compared to the Sennheisers' "pfffffff."

ROLL-OFF REVELATION

One very noticeable difference between these A-T mics and others I have used is in the design of the LF roll-off filters. The "flat" frequency response of the shorter AT835ST begins an LF roll-off at about 500 Hz and gently slopes down -3 dB at 70 Hz and remains there down to 30 Hz. Engaging the LF roll-off switch actually increases the LF response between 100 and 500 Hz. Below 100 Hz, it drops off more steeply at 12 dB/octave. This means you get more mid-bass and less low bass with the LF filter engaged.

The AT815ST "flat" response has a 3dB bump in the 30 to 50Hz range that returns to 0 dB at 100 Hz. Engaging the LF filter causes a 4dB increase between 100 and 400 Hz, which then drops off gently at about 10 dB/octave below 100 Hz. Again, engaging the LF filter causes an increase in upper bass and a decrease in low bass.

Both mics also have presence peaks slightly higher in frequency than that of the Sennheiser 416. The AT835ST begins a slow 2dB rise from 1 to about 2.5 kHz. It then achieves a +4dB plateau from 4 to 7 kHz, peaks at +5 dB between 8 and 9 kHz and slopes off moderately crossing 0 at 15 kHz before dropping down to -4 dB at 20 kHz.

The AT815ST begins a gentle rise at 1 kHz, hits +4 dB at 4 kHz, dips a decibel or two between 6 and 7 kHz, rises to +5 dB from 8 to 10 kHz, is back down to +3 dB at 15 kHz and slopes off to -1 dB at 20 kHz.

In their flat positions, both mics sound thinner than a 416 Sennheiser. With the LF filters engaged, the increase in upper bass makes them sound more similar. The 416 still has more beef in the upper bass and develops its presence peak a bit below that of the A-T mics, making them sound a bit "zippier" on top. In my short time with them, I found that I liked keeping them in the rolled off position to get that extra upper bass, while reducing the amount of low bass.

I did find that, in stereo operation, as a sound source works its way from front to rear, there's a point after the source gets past the side capsule where the mic gets a bit confused and throws the signal to the opposite side. As the sound source continues past the rear axis of the mic and heads back to the front on the other side, a similar "flip-flop" happens. This occurs in either L/R mode or in the M/S I matrixed in my Orban Audicy DAW. So if you're doing sound work at an automotive road rally, then it's probably not a good idea to set up in the middle of a couple of deep curves that result in the cars crossing the rear axis of the mic.

Y M/S?

If you haven't considered M/S stereo, it's a handy format when you don't have a clue as to how

BY TY FORD

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CIRCLE #020 ON PRODUCT INFO CARD

wide you want the stereo image in the final mix. Although it's a bit difficult to listen to in the field unless you can convert it to L/R, being able to adjust the width in post-production is a definite advantage. If you're using zone mics, then you can use an M/S mic as a stereo center spot mic for soloists, using the matrixed mid-channel fader to adjust gain for the performer without upsetting the stereo balance of the side channels.

I took the AT835ST to "Open Stage" night at 8x10, a local music hot spot in Baltimore, where Craig Hopwood runs the house and mixes P.A. Through the 8x10 sound system, the AT835ST sounded a lot more open and clearer than the Shure Beta 58s. Adding a bit of EQ at the board around 3 to 4 kHz and 10 kHz made the Betas sound more similar.

Running the mic in L/R wide, I twisted it around 90° so it was aiming high and low, instead of L/R stereo. Pointing the mic at about the Adam's apple of a folk singer, I could get a split of more voice on one fader and more guitar on the other. In L/R, harmonized vocals with two singers each about a foot and a half away from the mic also worked well. When placed a foot away from an acoustic 12-string guitar, we got a nice image, but ran into feedback trouble when we added more instruments and had to crank up the stage monitors. Of course, in the studio or for on-location recording, feedback just *isn't* a problem.

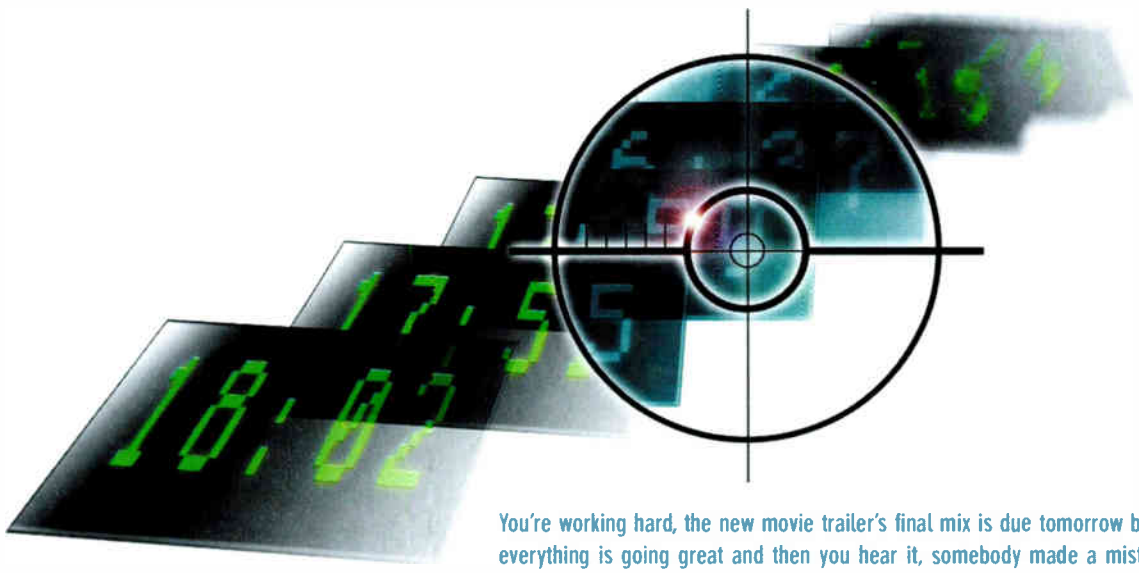
WRAPPING IT UP

The AT835ST and AT815ST are lightweight mics with obvious EFP/ENG applications, especially with a tailored LF response that eliminates low end. Having an LF roll-off filter that increases the middle low frequencies and dumps the lower ones is a great idea that works out well in the real world. Having slightly "center-focused" stereo images means you'll get some stereo information, but nothing radical that could cause problems later. With their higher presence peaks and out of the way of blaring stage monitors, either mic might also find use as a stereo drum overhead.

Audio-Technica U.S., 1221 Commerce Drive, Stow, OH 44224; 330/686-2600; fax 330/688-3752; www.audio-technica.com. ■

Ty Ford's audio equipment reviews and V/O sound files can be accessed at www.jagunet.com/~tford.

Never say Never again...



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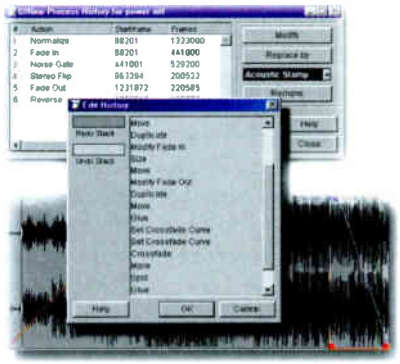
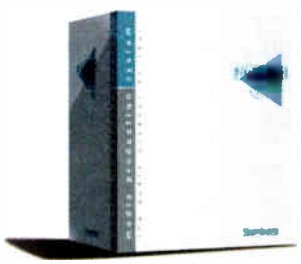


"The top grayed section of the Edit History window indicates events you can Undo or Redo, while the Offline History window behind it shows the various processes that can be modified, replaced, or removed for each audio segment."



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D.W. FEARN VT-4

VACUUM TUBE LC EQUALIZER

With an uncompromising approach to audio processing, D.W. Fearn's VT-4 Vacuum Tube LC EQ follows in the steps of the company's single-channel VT-1 and 2-channel VT-2 Vacuum Tube microphone preamplifiers. In fact, much of the amplifier circuit design in this unit is based on those two mic pre's. I feel privileged to write about the VT-4, because it's immediately apparent that this handmade "labor of love" is in its own special class, and company owner Douglas Fearn individually inspects, tests and signs each unit.

The VT-4 is a single-channel equalizer in a three-rackspace cabinet. Everything about the construction is first-class and built to last. The chassis is fabricated of heavy-gauge, anodized aluminum plate, and the ¼-inch-thick front panel is finished in D.W. Fearn red to match the VT-1/VT-2 units. The large, mil-spec control knobs are from original Raytheon designs that are now manufactured by Electronic Hardware Inc. The heavy-duty AC power on/off switch is located on the back panel, away from sensitive audio lines and accidental "use" during a recording. The internal power supply fully regulates both the high voltages and DC-filament voltage. No pots are used: All controls are semi-sealed, silver contact-type, with rotary switches for repeatability. All audio capacitors are polystyrene or polypropylene, and resistors are 1% metal film. The inductors and input/output transformers are custom-made by Jensen Transformers.

SIGNAL PATH

The VT-4's passive EQ circuit is surrounded by Class-A mode input and output amplifiers using Svetlana 6N1P dual triodes. Both amps are similar with single-ended triode sections coupled to cathode follower circuits. After the input transformer, the input amplifier isolates the passive equalizer circuit, whose output is then fed to the output amplifier and output transformer. The unit is designed to accept balanced or unbalanced signals and output line-level, balanced +4dBm signals. LC refers to using inductors or coils (L) and capacitors (C) in the series/parallel filter circuitry, rather than the typical RC equalizers that use resistors (R) and capacitors to keep costs and physical size down. Passive equalizers using LC networks sound noticeably more "open" and smooth.

GETTING IN AND OUT

A large In/Out switch toggles the EQ in and out of circuit by substituting a resistive attenuator equaled to the level drop of the passive EQ circuit when all controls are set to flat. This is not a hard-wired bypass and works better, because you'll hear just the sound of the tube input/output amplifiers sans EQ. It would be crazy to leave an EQ this good patched in Bypass mode. I did notice an occasional soft pop when I operated this switch, and since receiving my unit (serial #008), a new "make-before-break" switch was added to the newer units, eliminating all possibility of noise.

The Input Level control adjusts gain of the first amp stage in 3dB steps from -9 dB to +9 dB. For the most part, I kept this switch at unity or the center position. Fearn says: "this control is for maintaining proper headroom within the unit." This control worked fine for adding level when I was able, by grounding pin 3 of the input XLR connector, to process -10dBv unbalanced signals. If you boost several frequencies at once, then you may have to dial back the input level to keep from overloading the output amplifier. Of course, if you wanted the sound of an overloaded tube stage, then you can crank the Input Level up and get lots of wonderful (albeit expensive) distortion. For this purpose, it would be nice to have an Output Level control, because the unit will put out up to +22 dBm.

EQ CONTROLS

There are five frequency controls or bands on the VT-4. Gain control knobs are intuitively located directly below each frequency control. Exact frequency selection

BY BARRY RUDOLPH

WHAT WERE YOU DOING IN 1973?

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is different on the VT-4 than all other EQs and contributes to its unique sound. I found myself looking at frequency choice a little differently and making slightly different judgments and decisions throughout the session. These were decisions and judgments I was very happy with the next day! Douglas Fearn said he arrived at his frequency choices by mostly listening in a musical and subjective way. I'll bet some good old trial and error and a few clip leads went into it as well!

Low frequencies are handled by shelving Low Boost and Low Cut controls. The selectable frequency positions for Low Boost are 20, 40, 60 and 140 Hz, while the Low Cut control can be set to 30, 40, 100 or 400 Hz. These sets of overlapping frequencies make for interesting equalizer "stylings," which were different from conventional EQs or even multiband parametrics. Perhaps it's idiosyncratic—like an old Pultec EQP-1—but you can boost and cut in the same frequency ranges! Typically, boosting low frequencies by large amounts will cause muddiness or boominess. However, using the VT-4 to boost 60 Hz—while cutting the octave down at 30 Hz—gave me more bottom with much less boominess.

The next control is the unique bell-shaped Mid Cut. Midrange frequencies available for attenuation are 200, 300, 400, 500, 600 and 700 Hz. You can cut up to 16 dB in 2dB steps. This is a progressive Q equalizer: As the Mid Cut control is advanced, the Q becomes sharper. This huge range is quite a sound change, and I wondered if Doug played electric guitar, because I liked this feature for "scooping" out midrange from guitar tracks. My only wish here was for a 1.5kHz position in the frequency range selection. As such, the VT-4 does not have a dedicated midrange boost control, although the next section, High Boost, does go down to 2 kHz.

High Boost is a bell-shaped equalizer with 2, 3, 4, 5, 8, 10, 12 and 16kHz frequency selection positions. You can boost up to 14 dB in 2dB steps. I would like to see a 1kHz position here: Then the equalizer would have complete overlapping frequency range selection. High Boost includes a Q or bandwidth control that goes from a broad 0.6 to 1.7 at the sharpest. I found this section just perfect for brightening vocals, guitars or drums. I never heard any stridency or harshness, no matter how much I cranked the High Boost.

High Cut, the last control, is a shelving EQ, and its frequencies are 1.7, 4, 10 or 28 kHz. Twenty-eight kHz? The 28kHz setting is just the ticket for rolling off digital artifacts you pick up sometimes. I brightened a guitar track (recorded in Pro Tools) with the High Boost section and then rolled off at 28 kHz to lose some aliasing artifacts I started to hear. As with Low Boost and Cut, using both High Boost and High Cut at the same frequencies produces a whole other equalizer sound with interesting effects.

ALL THERE!

A great-sounding equalizer with more tone-shaping possibilities than most other tube EQs, the VT-4 is crafted and built to last, like a Rolls Royce made for the U.S. Government. The D.W. Fearn VT-4, at $3,900 MSRP, makes a fine investment for any recording and mixing studio. Thanks go to producer David Gamson for use of his studio and helping me with my evaluation of the VT-4.

D.W. Fearn, 182 Bragg Hill Road, West Chester, PA 19382; 610/793-2526; fax 610/793-1479; www.dwfearn.com.■

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

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EMPIRICAL LABS FATSO

FULL ANALOG TAPE SIMULATOR AND OPTIMIZER

The FATSO acronym stands for Full Analog Tape Simulator and Optimizer. However, that only partially describes the effects and features offered by this unique piece of audio gear.

Designed by Dave Derr, FATSO is the latest product offering from his company, Empirical Labs, manufacturers of the well-known EL-8 Distressor, a favorite of many producers and engineers. It's my first choice in several situations that call for the use of a compressor.

After months of hearing rumors floating around the industry concerning FATSO, it was with great anticipation that I received one of the first production units for review.

THE BASICS

The EL-7, as the FATSO has been designated, is a 2-channel, digitally controlled, analog signal processor, capable of stereo or dual-mono operation. The front panel has four large, calibrated knobs that go up to 10—not quite Spinal Tap, but very close. Two of the gray knobs are used for Input Level and two for Output Level control. Three buttons per channel (the Compression Selector switch, the Warmth/Link switch and the Tranny/Bypass switch) and a host of LEDs for metering and status indication completes the package.

Inputs and outputs are via XLR or ¼-inch TRS jacks, with the XLRs differentially balanced on the inputs and outputs and the ¼-inch jacks balanced on the inputs as well. Pin 2 is wired "hot" on the XLRs and is user-changeable to Pin 3 from inside the unit. The owner's manual makes a point of stressing that the unused pin of a single-ended XLR output cable should be "floated" rather than tied to ground to prevent shorting out any of the output amps. I checked with the factory about this, as many potential owners of the unit may use off-the-shelf cabling for their wiring needs. In many instances, pre-wired XLR to ¼-inch cables have the unused XLR pin tied to ground on the minus side. This is true especially if they are of the unbalanced, two-conductor, musical instrument-type. The manufacturer replied that this would only present a problem if a combination of XLR and ¼-inch jacks were used simultaneously. In case of doubt, Empirical Labs offers optional (correctly configured) XLR to ¼-inch adapter cables.

No digital inputs/outputs are provided, even though the targeted market is obviously the DAW, MDM and hard disk recording contingency. I thought about this for a while and decided it was a good thing. Because this is an analog processor, you'd eventually have to convert your digital signal to analog to use this unit, anyway. If Empirical Labs had included an AES or S/PDIF provision, then not only would the price increase, but you'd be forced to use their converters, however good or bad they were, instead of the converters you already own and love. This way just saves you a decision and a step. If you *don't* want to ever leave the digital domain, then this is probably not the unit for you at mixdown, but it certainly could be helpful during tracking sessions.

A Link/Sidechain input and individual channel inserts are also provided via ¼-inch jacks. The power cord is the IEC-removable type, and an internal switch can change the operating voltage from 110 to 220 VAC.

WHAT? HOW? WHY?

The one-rackspace unit is solidly built, and the quality, craftsmanship and heft of the box will be immediately apparent. But, after all initial impressions are expressed and descriptions of its physical layout are noted, two burning questions about FATSO still remain: What the heck does this thing do, and how does it sound while doing it?

What it does is not an easy question. The short version is that it emulates the characteristics of an analog tape machine when mixing and/or tracking digital signals to help "warm-up" their sound. Unfortunately, these days, "warm" is probably the most overused term for defining a desirable characteristic pertaining to a piece of audio gear.

A better—albeit longer—answer requires describing the types of processing the FATSO has onboard, while noting that they can be used individually or in combination. Oh yeah, it sounds *so* sweet when performing all of these functions, as well.

The first process the FATSO offers is Harmonic Generation/Soft Clipping or Distortion Generation. This produces continuously controllable second- and third-order harmonics, which, when added to the signal, provide a richer, fuller sound. There is also an apparent increase

BY BOB BUONTEMPO

MX-2424 Profile:
Steve Levine of Manmade Souls Studios

Steve Levine in his studio with two MX-2424s and an RC-2424 Remote Control Surface. His discography includes records by Culture Club, The Beach Boys, Ziggy Marley, Quarterflash, Gary Moore, Honeyz and many others.

Producer Steve Levine's golden ears have been integral to a string of hit records by Culture Club, The Beach Boys, Ziggy Marley and many others. The centerpiece of Steve's new studio? Two **TASCAM MX-2424** 24-Track 24-Bit Hard Disk Recorders.

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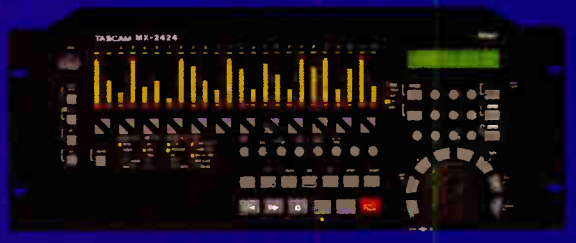

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in volume without an increase in level.

Many software plug-ins try to achieve this effect in the digital domain. However, the ones I've tried usually sound like they are just overloading the system's electronics to unusable (and unlistenable) proportions. I find that this happens no matter how much its GUI looks like the controls of an analog tape machine.

Without giving away any of his design secrets, Derr stated that digital processing cannot be used effectively when creating clipping and distortion generation for frequencies above 3 kHz without a byproduct of unpleasant artifacts. He believes that only if current sampling frequencies are greatly increased will digital signals ever hope to rival the resolution that can be achieved for those purposes in the analog domain.

The FATSO, however, does this job so nicely that once you patch it in and tweak it up, you'll have a hard time ever taking it out of the chain.

The unit does add distortion to the signal, but it is perceived as harmonics—*not* as overload. The second harmonic generated is the equivalent of an octave above the fundamental tone or pitch, and the third harmonic is a fifth above that. This process adds body and clarity to the mids, while "tightening up" the bottom, which is especially noticeable on smaller speaker systems. The bass will seem more defined, and, generally, the other instruments and vocals will be more "in your face."

Of course, this effect, like all the processing in the unit, is a bit like hot sauce; a little goes a long way, and too much will kill the taste of what you are cooking up.

The Harmonics and Soft Clipping are always in the signal path, unless the unit is bypassed. The effect is controlled by the amount of input level the FATSO gets, as adjusted by Input Level pots. This *may* be a problem for some users. You always get the effect when you put anything through the box. Because that is the main purpose of the FATSO, I don't have a problem with the setup. Still, be aware that this is the case when using the device.

C-O-M-P-R-E-S-S-I-O-N!

Four types of compression, with seven possible combinations, are served up next. These have fixed-time constants and ratios, and the amount of gain reduction is, again, dependent upon the input level. The compression, however, can be bypassed from the circuitry with the Compression Selector switch. Two LEDs on the front panel of each channel indicate the "0 VU" and "Pinned" status of the FATSO. These can facilitate setting the input levels for the Compressor, Harmonics Generator and Soft Clipping processes.

The manual notes that if compression is being used, then it should be the first process set up. The rest of the unit's functions should be adjusted relative to the compressor's settings. I found this to be critical.

The compression has that famous Empirical Labs quality, only without the more extensive control of the Distressor. But, if you use one of FATSO's compressors carefully and gently, the parameters that you've chosen work just fine for both tracking and mixing.

The four types of compression start with the "Bus" mode. If the FATSO consisted of only this compressor and the Harmonics/Soft Clipping Generator, then I *still* would have been sold on the thing. When placed across the stereo bus of a mixer or on playback of a 2-track source, you can't help but smile. I found material I previously mixed with a bit of low-end boost could be remixed through the FATSO, without the low EQ, and have a fatter, tighter bottom.

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The "Bus" compressor is designed to emulate an SSL Stereo Bus compressor and, when used gently, does a nice job of transparently pushing up your level a tad, without pumping or other nasty side effects.

The "General Purpose" compressor is the next type up on the menu. Having a little faster attack, I found it a bit heavy-handed for the stereo mix, but nice for printing tracks—sort of like a dbx 160X.

The "Tracking Compressor" is meant to emulate an 1176 and does a good job. This sound is the closest that FATSO comes to matching the Distressor. With its controls set for fast attack and release times, I found this setting the most useful of the compressors for individual instruments.

Finally, "Spank" is a high-ratio compressor/limiter having the characteristics of the compressor on an SSL talk-back mic, but with full bandwidth and better overall specs. It has an "over the top" sound when hit hard by a signal. Spank can be used alone or as a peak limiter following any of the other compressors.

The Compressor Selection switch cycles between the different compressor types, allowing one switch to choose any of the four compressor types individually, or to select Spank along with one of the other three in series. It also can bypass all of the compression. Distressor users will be familiar with this type of multiplexed switching.

The "Warmth" (there's that word again) processing is an interesting and unique function. Its control steps through eight stages, starting with off, then, as marked by LED indicators, from one to seven. Each degree of added Warmth causes more gain reduction, from a frequency-dependent limiter with a lightning-fast attack and release. The filter controlling the response of the process is carefully designed to lop off only the highest, shrillest frequencies very quickly and recover just as fast. When used judiciously, this truly mimics analog tape saturation and self-erasure. Most of the frequencies affected by the Warmth process are above 10 kHz. This helps tame "spitty" vocals, harsh, edgy cymbals, overly bright guitars, trashy tambourines and other signals that may not respond well to the digital recording medium.

The Warmth control and the compressors are *heavily interactive*, so, again, the compression should be set up first when using these processes together.

Both FATSO channels can be linked for stereo, or multiple units can link together for 5.1 mixes. Unlike most other stereo units, the inputs and outputs on each channel are still individually adjustable. This allows tweaking the levels on both channels independently. However, to maintain good stereo imaging, the Input and Output Control settings on both sides should be matched.

ENTER THE TRANNY

The final FATSO process involves an actual iron and coiled wire transformer, known as the Tranny. This transformer is unlike those used on older (and some current) tube and Class-A gear to isolate and impedance-match the inputs and outputs of equipment. They imparted their coloration on the sound of the gear, unintentionally, by being a necessary evil in the circuit. The Tranny process is intentionally designed to add certain characteristics to the sound. In a nutshell, it adds a midrange bite while it softens transients and tightens up, yet increases the apparent loudness, of

the bottom.

The Tranny/Bypass Control switch is used to toggle the Tranny in/out of the signal path. This may be a point of contention for some people. In order to fit everything on the front faceplate of the unit and still use the same type of switches throughout, the Tranny shares control buttons with the Bypass function. So, when using the true, hard-wired, relay-controlled Bypass on the box, one must first switch through the Tranny function, if it is not engaged. If returning to the Tranny from a Bypass condition, then another two taps of the switch are required. The same system of multiplexing and cycling used on the other control buttons is employed, but instead of moving through two steps of the same function, it steps through two separate functions. I got used to this and it is no big deal, but some may find this a weak spot on the FATSO.

The manual suggests a test for the Tranny process that is fun to try and will impress your friends, family, clients and pets. Send a 40Hz sine wave through the unit, and match the levels with and without the Tranny bypassed. Now, pull out those Auratones, or any other little speakers you've got, and monitor the tone without the Tranny engaged on those guys. Then kick in the Tranny process. I won't give away the results.

A few clever tips are mentioned in the manual, as well, which only add to the versatility of the unit. By inserting a device with level-controlling abilities in the insert point of a channel, you can raise or lower FATSO's threshold by changing the level of the inserted device. When you add gain at the insert, the threshold of the unit is lowered and the amount of distortion produced is less. The opposite holds true when the gain at the insert is lowered. Of course, the inserts can be used in the regular manner, too, to add an EQ or some other device in the chain.

Sidechain processing is also available using the link outputs to send signal to an equalizer and returning the EQ's outputs to the link inputs of the same channel.

During mixdown, a good way to use the device is to set FATSO across the stereo bus before any other EQ, compression or effects are added to the individual tracks. You'll probably use less signal processing that way: FATSO becomes a sort of Exciter in reverse, adding honey to your mix.

The Compressor types have been designed with "headers," which permit different value components to be swapped with the existing ones in the FATSO. These will allow the control of the time constants, ratio, threshold and other characteristics of the compressor to be changed and/or custom-modified in the future as they are offered.

At $2,499, the FATSO should be considered by users of digital audio systems—DASH, DAWs or MDMs—who want the perfect unit-to-track through and for use across the stereo bus at mixdown. Analog audio users will find this another quality tool for their arsenal. Anyone who has longed for a 1-inch, analog, 2-track machine should check out a FATSO, as well.

Empirical Labs, dist. in the U.S. by Wave Distribution, 1170 Greenwood Lake Turnpike, Ringwood, NJ 07456; 973/728-2456; fax 973/728-2931; www.wavedistribution.com or www.empiricallabs.com. ■

Bob Buontempo is a freelance engineer, producer and writer based in the New York City area. His new goal in life is to make enough money to eventually put himself in a good nursing home. You can contact him, harass him or donate to his cause by e-mail at THEMIXFIX@aol.com.

B.L.U.E. KIWI

CLASS-A DISCRETE MULTIPATTERN STUDIO MICROPHONE

Baltic Latvian Universal Electronics (B.L.U.E.) is now shipping its Kiwi multipattern studio condenser mic. B.L.U.E.'s top-of-the-line solid-state microphone, Kiwi retails at $2,299 and comes complete with "The Shock," a robust shock-mount that resembles an optional $400 unit designed for certain high-end European mics, and a wooden storage box. However, this is no copycat product: Kiwi offers world-class performance yet has a distinctive character all its own. And it looks like no other mic.

True to their name, B.L.U.E. mics are hand-built in Riga, Latvia. Kiwi's attractive green body houses modern, transformerless electronics—a Class-A, all-discrete design (no ICs here!), using high-quality components such as metal film resistors. The approach is minimalist; the signal path has no attenuation pads or low-cut filters that could compromise the signal.

The capsule is modeled after the B6 capsule that's included in B.L.U.E.'s high-end Bottle microphone but in a multipattern version using that same large-diaphragm, dual-backplate design. A switch on the backside of the mic body provides settings for cardioid, omni or figure-8, as well as three intermediate settings between each, for a total of nine patterns. In addition to the outboard shock-mount, Kiwi's capsule is mounted on a rubber stem, providing near-total isolation from external vibration and rumblings. This internal mount allows so much flex that the mic includes three hold-down screws to protect the capsule by locking it in place during shipping.

Although useful for various studio tasks, Kiwi is designed with vocals in mind. Both the cardioid and the figure-8 patterns are well-defined and fairly tight, and in most vocal applications, a click or two away from these end positions on the pattern wheel provided a wider splay for singers that move around while performing.

While tracking lead vocals in cardioid or figure-8, I found the proximity effect added a round fullness up close, but the capsule is extremely sensitive to vocal pops. Here, either a stocking-type screen or the way-cool "The Pop" optional ($200!) stainless steel clip-on pop filter is essential. Once you find the exact sweet spot for a full sound without breath noise, the Kiwi is sweet. The mic has a wide, smooth presence boost that starts about at

6.5 kHz with a +3dB peak around 12 kHz that's particularly nice on male lead vocals; this boost also adds a nice airiness to male and female background tracks. Kiwi's far from flat, but it adds punch, clarity and a low-end warmth on both spoken and singing tracks—a trait that both male and female vocalists liked. I had to agree.

This same upper presence bump that I liked on vocals gave a nice emphasis to tenor sax, although it was too much on clarinet—here, a ribbon mic was a better choice. Overall, the mic is fairly bright, and when recording acoustic guitar, some experimentation with placement is necessary. On a Gibson J-160E acoustic, positioning the mic between the bridge and the soundhole seemed to work the best on solo work, while moving toward the neck offered a brighter sound that kept the guitar from getting lost in a rock mix.

Kiwi was ideal on all kinds of percussion (assuming the drummer is under control) and delivers tons of transients and punch on timbales, while offering a clean, detailed sound on a brushed snare. I only had one mic to test, but given the top-end response, I think two Kiwis would be really nice as an overhead pair. In omni, this detail makes Kiwi a great choice as a room mic, as it captures nuances with less coloration than the other patterns.

I used a variety of preamps—both stock console and outboard—with Kiwi, but I preferred it with the Aphex Model 1100, a tube model with a phenomenal -135dBu EIN spec that really lets you know if the mic electronics are clean or not. Kiwi passed this test without any problems; in fact, its low-noise (8dBa) performance was perfect for recording low-SPL sources like acoustic guitar harmonic grace notes. This, with its impressive ability for detail and multipattern versatility, makes Kiwi a natural choice for Foley applications. I could definitely find space in my mic locker for a Kiwi or two!

B.L.U.E. Microphones, 766 Lakefield Road, Suite D, Westlake Village, CA 91361; 805/370-1599; fax 805/370-1549; www.bluemic.com. ■

BY GEORGE PETERSEN

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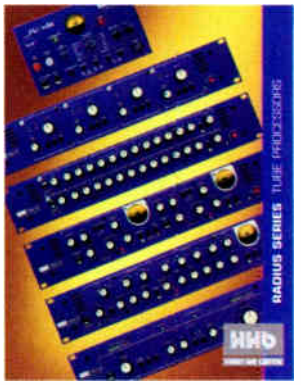

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TOUR PROFILE

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SWIMMING AGAINST THE TIDE

ALL PHOTOS BY STEVE JENNINGS

During the winter of '99, the rumors were everywhere; Tool's elusive frontman Maynard James Keenan and songwriter/guitarist Billy Howerdel, without management or a record deal, had just finished a quiet little club tour with their new band, A Perfect Circle. The rock press continued to buzz for months, and the following April, it all broke wide open. The long-rumored project moved, in what seemed like one swift step, from industry whisper to full-fledged hard rock machine, with the band inking a deal with Virgin Records, releasing their first single and subsequent hit "Judith," and scoring a coveted opening slot on the first Nine Inch Nails tour in more than four years. Let's just say that things went pretty well.

Following the three-month NIN outing, APC went back on the road last fall and again this winter, headlining a tour with a number of support acts, including Snake River Conspiracy. Based on the strength of singles like "Three Libras," the band has had little trouble selling out theaters and concert halls across the country. Both legs of the tour also saw considerably different set lists—a notable feat for a band with only one studio album. Additions of note included an excellent cover of David Bowie's "Ashes to Ashes" and a new song entitled "Vacant," which is actually the first publicly performed song off the Tapeworm project—a long-rumored studio collaboration between Keenan, the members of NIN and a host of others.

In addition to Keenan and Howerdel, APC includes guitarist Troy Van Leeuwen (formerly of Failure), bassist Paz Lenchantin and drummer Josh Freese of The Vandals. Last February, when the band pulled into the Memorial Auditorium in Sacramento, Calif., *Mix* got a chance to catch the sold-out performance.

AT EASE WITH HIS XL4

Veteran independent engineer Gordon "Gungi" Paterson chose a Midas XL4 for FOH. "It's, as always, a wonder-

BY ROBERT HANSON

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(and just for the record, we think the Redwood trees in the picture are the perfect metaphor for Ashly.)

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APC lead singer Maynard James Keenan

ful-sounding console," he explains. "Great preamps, great EQ; it's everything you want in a console." For APC, Paterson normally uses 49 inputs, which include playback channels from a pair of DA-98s for some backing material. For this tour, he also preferred to keep a few channels open, because guest percussionists and string players were a common occurrence. "At these California shows, we sometimes have Paz's brother and sisters come out and play strings. So I left some space open to accommodate that."

Paterson's effects rack included six Empirical Labs Distressors, dbx 902 and 120X units and Aphex noise gates for dynamic control. Reverb units included a Lexicon 480L, two PCM 81s, TC Electronic M5000 and D-2 units, a Roland SD-3000 and an Eventide H3000 D/SE.

"One of the challenges for this tour was finding the right vocal mic for Maynard," Paterson states. "He just made the transition to in-ear monitors, so he's obviously much more sensitive to ambient sound that's picked up by his mic. We've pretty much settled on a Beta 57A. I've experimented with some Neumanns and Audixes. In bigger rooms, we have been going to the Beta 87 on a radio system, and that works very well, too."

The other three vocalists in the band (Howerdel, Lenchantin and Leeuwen) use Beta 87Cs. The other stage mics include Groove Tubes MD1s on guitar, and Shure Beta 52 on bass, Beta 91 on kick, Beta 98s on toms, Beta 56A on snare top, SM94s on hat, ride and snare bottom, with KSM-32 overheads. "I've also got a VP 88 audience mic, and that's going straight to tape," Paterson continues. "We tape the show every night, and the band likes to hear a better representation of the live sound."

The P.A. consisted of a Showco Prism® System. The setup had to accommodate both large theaters and near-arena-size concert halls. For this particular show, two columns of the arena system were flown per side with two stacks set up on either side of the stage. "There was a good spread of venues, so I was looking for something that would be flexible enough to cover it all," Paterson explains.

NEW TOYS ONSTAGE

Chris Gilpin mixed monitors for both legs of APC's headlining tour. For this particular leg, he moved to an ATI Paragon. "It's the first time I've used one, actually, and it's really nice," he explains. "My main worry was the audio quality with the desk, because with in-ears it really shows up. And I've been stuck with boards before that I really wasn't happy with and it's difficult. And I really didn't want to burden myself with a board that I never used before on a two-month tour. But I'm actually quite glad, in the end, that I decided to go for it."

The lead singer, Keenan, was the only member of the band using in-ear monitors. His setup comprised Shure E5 custom molds and a Shure PSM 700 beltpack. The rest of the band utilized a traditional mix of wedges and the natural sound off the backline. "It's pretty simple onstage," says Gilpin. "Basically, Josh [the drummer] has kick and snare, bass, Billy's guitar and a little Maynard vocal. Everyone upfront gets their own vocal and a little of Maynard. Billy just gets kick, his own vocal with reverb and Maynard, and that's it. Paz [the

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FOH engineer Gordon "Gungi" Paterson

bassist] gets kick, snare, hat, her own vocal and Maynard. Troy [the second guitarist] gets kick, snare, hat, a little bit of the toms in the sidefills and his own vocal. I try to keep it as simple as possible. We've had to add a little bass guitar for Paz in her wedges, because, for looks, they've gone down to one cabinet, tilted on its side. It's just a little light on bass, so we just put a little more in the wedges than we did on the previous leg.

"These particular wedges are the Showco 15s. They're the same all over the stage. I don't use anything extra for Josh, the drummer; I just use a pair of these 15-inch wedges. I prefer to have the same speakers everywhere. Then, if you dial it for one wedge and it sounds good, it's going to sound good for the others."

Gilpin's effects include two Lexicon PCM 880s and Yamaha SPX 990 units for reverb and chorus on the vocal channels, an Aphex Exciter across the toms and a BSS 901 on the lead vocal. "On

GUITAR TECH TO ROCK GOD IN FIVE EASY MOVES

A Perfect Circle's *auteur*, Billy Howerdel has taken a strange and seldom-traveled path from a guitar tech and studio engineer (working with bands such as NIN, Tool and Smashing Pumpkins) to a hard rock icon in a relatively short period of time. Just before the Sacramento, Calif., show, Howerdel took a break to talk with *Mix* about taking the band's album *Mer De Noms* from the studio to the road and a little bit about the band's songwriting process on the road.

***Mer De Noms** is certainly a complex album, musically and arrangement-wise. How did you go about making the tour playable?*

Well, not everything can be played live. Some of the stuff was transferred from Pro Tools to DA-98. Other than that, some of the album—well, most of the album—was recorded before I met the band. In preparation for the tour, I was teaching the band parts, and some of it was worked out in the rehearsal studio. But some of it, I kind of had to show them how it was done on the album. So there was a lot to do in the beginning, and on top of that, there's just a whirlwind of press that this band had to do.

What was the guitar rig that you settled on for this tour?

Basically, I have a custom-made amp made by this guy Dave Friedmann in North Hollywood; it's basically a combination of a Mahler and a Marshall. Then I pretty much use this Lexicon MPX-G2 processor, which is really good for analog pedals; it kind of takes away all of those analog pedals and puts them in one rack unit. And then post effects, I use a DigiTech 2101, this old kind of noisy thing and a G Force X254X (TC Electronic).

How much time do you spend trying to approximate what you did in the

—CONTINUED ON PAGE 160

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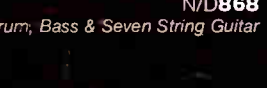

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CIRCLE #086 ON PRODUCT INFO CARD

Monitor engineer Chris Gilpin

Maynard's vocal, I've got a BSS 901 in-line with an EQ on the insert point," he notes. "I use some frequency-conscious compression. Maynard doesn't like compression, but there are certain times when you have to have some control over particular frequencies. So, basically, it's an active EQ.

"I'm also using the Shure DFR 011s, which are essentially feedback eliminators. It allows you to do a preset parametric EQ on the vocal channel, which is what I'm using it for. I actually lock them off during the show so that they're not actively chasing feedback. But it helps to get another 3 dB out of the mic onstage. They're a pretty cool unit. That's my new toy at the moment."■

Robert Hanson, Mix's editorial assistant, is a musician/producer living in San Francisco.

—FROM PAGE 158, GUITAR TECH TO ROCK GOD

studio for the live situation?

A lot. I do a lot of tweaking. Where I came from, my background came from being a guitar tech, and I guess my specialty was making sounds for people. So, I get pretty tweaky with a lot of sounds. I should of thought it out a little more in the beginning, but I was trying to save a buck or two and do it with just those effects. But a little more gear would have made it a lot easier. So I try to squeeze a lot out of just those units. But I spend a lot of time and I still am...I mean we changed the set this time out a little bit, and I could spend six hours in a rehearsal day just tweaking sounds before the band gets in there.

Are you guys debuting any new material on this leg?

Nothing that's going to be on a next record. We are doing some different things. Hopefully it will be a surprise for the people at the show.

How involved are you, gear-wise, with what Troy and Paz are doing?

Well, Troy had a thing going already. And I just got him a TC and a Lexicon. I tried to really get him geared up for a tour where backups were a necessity and getting rid of some old analog pedals and stuff like that. And Paz's rig, I just put together. So, yeah, I'm instrumental in helping them get sounds and stuff. But Troy has really got it together; he's definitely got his own thing. He really has his own sound due to a lot of crazy programming as well.

Are you guys doing any writing on the road together?

We were doing a little. When we get back, I think we'll focus on it more. I tend to write in the hotel room, as I'm sure everyone else does. I just bring a rig in there.

What do you take with you?

I've got a big 20-space rack with a Marathon 9600 with a Pro Tools MIXPlus system, an Avalon 737 and the new Apogee 2-track, a little Mackie mixer, a tube mic, a basic guitar and an acoustic, and I pretty much do everything. I've got a little keyboard with SampleCell. I do everything except live drums. I've tracked three songs on the road, on the last tour, that are probably keepers for the next record.

So does Maynard then come in and cut vocals in your hotel room?

He'll mostly do it at home. He's talked about doing it on the road when he goes back out with Tool; he could do it then, and I can just send him files. But we'll probably do it when he gets home. We'll just do it at my house.

So he has a similar setup that he works on?

Yeah, I've pretty much got him set up with something similar to me. It's pretty much the same thing, so we're pretty interchangeable. We have hot-swap drives; I'll just throw my drive into his rig, and we're set. It just depends on where he wants to sing it.

—Robert Hanson

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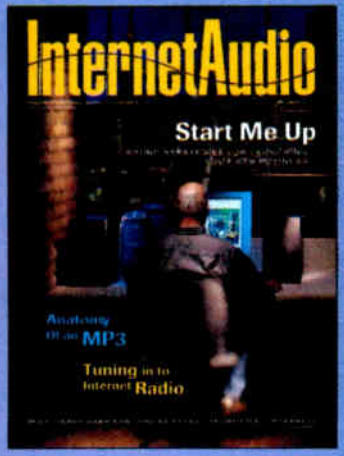

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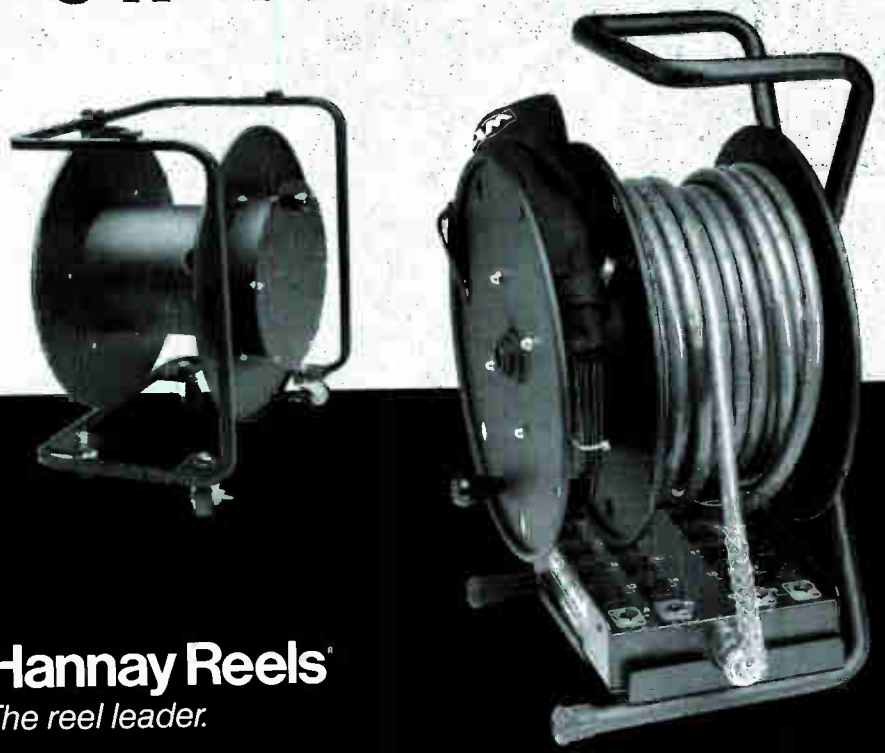

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ELTON JOHN &

Billy Joel's drummer Liberty Devitto and saxophone/vocal/guitarist Mark Rivero are using in-ear monitors. According to FOH engineer Ruggles, the IEMs are a great improvement. "They've commented that they are hearing things they never heard before—it's great," he notes.

Elton John and Billy Joel, two of the most successful singer/songwriters of the past three decades, are touring together for the fourth time. Performing a marathon set that lasts almost four hours, the two piano men work their way through 36 songs, including familiar hits and audience favorites, plus several songs on which each artist sings the other's composition. *Mix* caught up with the Face 2 Face tour during a three-night stint in the San Francisco Bay Area January 31 through February 4. (Photos are from the Arco Arena in Sacramento, the Oakland Arena and the San Jose Arena.)

Clive Franks (far right) has been Elton John's FOH engineer for the past 27 years. The three FOH consoles are all Yamaha PM4000s. "I use about 32 mic inputs, but about 12 of those are stereo, so we have about 50 lines of microphones," says Franks. "I've got two 4Ks," explains Billy Joel's FOH engineer Brian Ruggles. "Half of the second one is used for Liberty Devitto's drums and Crystal Taliefero on percussion." The remaining half 4K is used as the main P.A. drive board, with the other two boards feeding into it.

For this tour, the Clair Bros. S-4 system that both Franks and Ruggles have been using for years has been replaced with Clair's I-4 line array P.A. "It's a lot smaller, it's also a lot tighter-sounding," says Franks of the I-4 system. "The clarity is phenomenal—a crisp, more focused, even sound.

PHOTOS AND TEXT BY STEVE JENNINGS

BILLY JOEL

Billy Joel's manitor engineer Mike Pirich (left) and Elton Jahn's manitor engineer Alan Richardson

Bath Eltan John and Billy Joel have their own manitar engineers, each using a Yamaha PM4000M. When both bands are anstage together, the monitor engineers pravide each other with splits and submixes. "Bath Alan and I are sending mixes back and farth for part of the show," explains Pirich. "We have direct splits of Billy and Elton's vocal and piano signals, and we create a rhythm mix and a background vocal mix. So, for instance. Billy is able to hear Nigel [Elton's drummer] when Liberty isn't up there." Joel actually controls the levels of his own monitors via a 2-channel passive attenuator patched across piano and overall band mix sends.

Pirich is using TC Electronic and Yamaha reverbs, with dbx 903 and Summit TLA-100 compressor models. Most of the Joel band is mixed with Audio-Technica microphones, including the new 7373 wireless, 4054s for all hard-wired vocal channels and 4050s on drum overheads.

All the vocal mics for Elton John's set are Shure Beta 58As. Drummer Nigel Olsson has AKG D-112s on his kick, Sennheisers on the toms and Shure 57s on almost everything else. "We're trying out some B.L.U.E. mics for overheads, and our percussionist John Mahon is using them," notes Richardson, whose effects rack features Yamaha SPX-1000s, which he uses for reverbs for Elton and the two bandmembers using in-ear monitors. Richardson also uses dbx 160 limiters and Aphex gates. Limiters for the Shure in-ear wireless system are by Klark Teknik.

"For Billy's vocal, I use an Audio-Technica 4054 mic, which I find sounds great with his voice," says Joel's FOH engineer Brian Ruggles. For reverb on Joel's voice, Ruggles uses the TC Electronic M5000. "I also use the TC2290, a PCM-70 for background vocals, and some SPX990s and 1000s for other effects on drums and other instruments," Ruggles explains. "I don't get too crazy with outboard gear, I keep it simple." Joel's lead vocal is patched through a Manley compressor, and Ruggles also uses Summit compressors and Aphex gates for dynamic control.

Elton John sings into a Shure Beta 58. "The fact that he's right on the mic helps me with separation," says FOH engineer Franks. "But no matter how close he gets to the mic, because his monitors are so loud and he likes a lot of effects, harmonizers and reverb in his monitors, I hear [the effects] picking up in the mic, which means I'm not able to use my effects as much."

LCS CueConsole Fits Into the World of "SEUSSICAL"

Head sound engineer Carin Ford surrounded by CueConsole modules during a rehearsal of Seussicol. The primary CueConsole fader module (located directly in front of Ford and not seen in this shot) is used for all mixing, with individual faders controlling virtual groups for each scene. The two fader modules located to Ford's right control input trims on 32 wireless mics.

When Jonathan Deans started sketching the sound design for *Seussical*, the new Broadway musical based on the works of children's artist Dr. Seuss, his priority was to deliver maximum sound quality without taking up too much floor space in the theater.

BY PAUL VERNA

The cast of Seussical. *Many of the performers in the show wear Countryman B6 microphones, easily hidden under makeup or positioned at the hairline.*

He got his wish thanks largely to the CueConsole by Level Control Systems Audio of Sierra Madre, Calif. A new modular controller for LCS' Matrix3 digital audio platform, the CueConsole is designed to deliver high-input capacity, high-audio quality, extensive routing flexibility and saves space.

"We would have needed 28 seats on the orchestra floor with an analog or digitally controlled analog console," says Deans, "but with the new LCS system, we only needed seven. We saved 21 seats per show, which comes to possible additional revenue of more than $12,000 per week. That easily pays for the entire sound system."

The CueConsole, which sits in the FOH position, controls eight LX-300 modules that reside in a "rack room" backstage. Each LX-300 is equipped with three 8-channel card slots that can be configured as inputs or outputs. For *Seussical*, Deans chose to set up the LX-300s with 16 inputs and eight outputs, for a total of 128 inputs and 64 outputs.

Because the CueConsole is not an audio board, per se, but rather a fully featured remote controller, the audio signals do not need to be routed to the FOH position. Instead, audio flows from a band of 64 Aphex 1788 preamps (which themselves are remote controlled) set up near the stage to the LX-300 units, which are also nearby. From there, a Cat 5 cable delivers the digital audio data to and from the CueConsole.

From Deans' perspective, the Aphex units provide the dual benefit of remote access and quick conversion of mic signals to line-level. "As soon as a mic signal comes out of the orchestra, it only has to go a short distance before it gets converted to line-level, and then there's only a short distance to the LX-300 input, which is right next to it," he explains. "The quality difference is just incredible between sending all those inputs up a mult line for 300 feet and sending them a short distance at line-level." The remote interface of the Aphex 1788 is simple, he adds, and "visible from all angles."

Besides the LX-300 modules, the backstage rack room

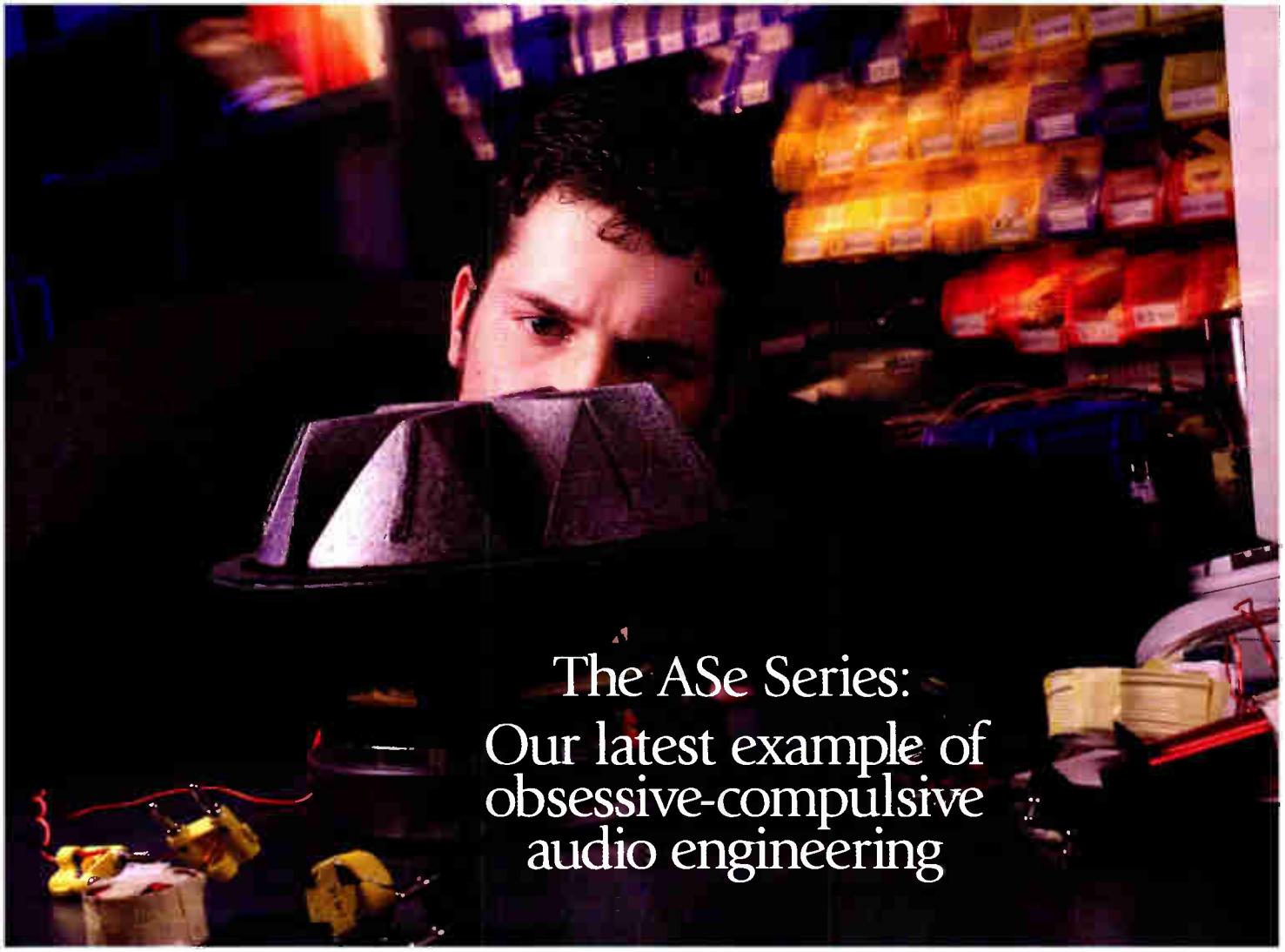
houses a monitor console and an auxiliary Crest VX board that can be used in case the LCS goes down (which it hasn't). The entire setup is designed to resemble, in form and function, a project studio. *Seussical* associate sound designer Peter Hylenski says, "It's a carpeted area with a monitor console and Genelec near-field monitors. We tried to give the whole thing a studio feel."

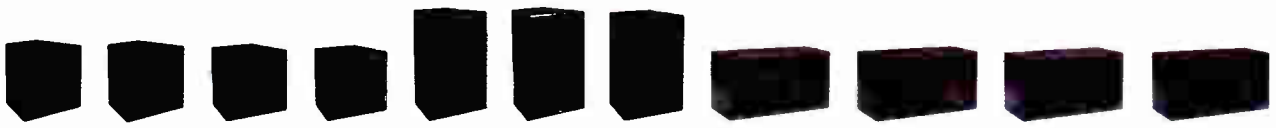
The monitor console provides a static, 16-channel mix to a headphone cue system custom-designed and built by Moonachie, N.J.-based theater rental company Masque Sound, which also supplied most of the audio gear for the show. For the musicians, the ability to create their own mixes has relieved the headaches normally associated with monitor and headphone sound.

Monitor engineer Tim Pritchard

Because of the amount of experimentation that went into implementing the LCS system, Deans relied more on the tried-and-true in some other areas of the production. For example, Deans used all Meyer Sound loudspeakers, including CQ-1s, UPA-1Ps, PSW-4 subwoofers, MM-4s for delays and HM-1s for surrounds.

That's not to say that Deans and his team didn't push the envelope a bit. For instance, during a pre-Broadway run of the show in Boston, the crew resorted to wireless versions of the





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Meyer HM-1s, because the venue's historical protection status prevented cable runs to the surround speakers.

As far as mics are concerned, Deans tried out the Countryman B6 mini-mic, which was new to him. "It's so tiny, it's almost the size of the cable hanging off it," he says. "We were able to put them on some of the performers in places where you can't normally put a mic."

Because much of the sound for *Seussical* comes off the orchestra pit virtually mix-ready, a minimum of audio processing is used. For reverbs, Deans relies on the TC Electronic 6000 multichannel processor, and for special effects he employs an Eventide H3000.

Based around synthesizer pads coming off a Kurzweil 2500, Yamaha B3 modules and V-Drums, the pit orchestra also includes electric guitars playing through Roland GT-3 units and an electric bass running through a Line 6 Bass Pod, and such "live" elements as cymbals, hi-hats, a field snare drum and percussion. Strings, brass and reed sections are located in a remote pit.

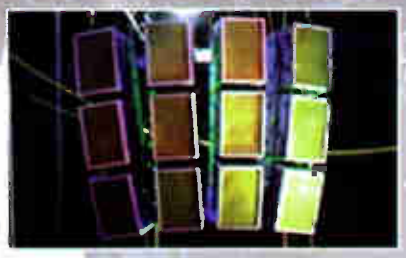
Besides Deans and Hylenski, the *Seussical* audio team consists of head sound engineer Carin Ford, who mixes the house sound; production sound specialist Garth Helm; and assistant sound engineer Tim Pritchard, who oversees wireless mics and monitor mixes.

Seussical, which opened at the Richard Rodgers Theater on December 6, was directed by Frank Galati and choreographed by Kathleen Marshall, with lyrics by Lynn Aherns and music by Stephen Flaherty. ■

Paul Verna is Mix's New York editor.

A rack of Aphex Model 1788 remote-controlled mic pre-amps, positioned backstage for Seussical. Each 1788 includes eight channels of mic preamplification. "The ability to control all eight pre-amp units from a single remote controller makes life a whole lot less crowded at the mix location," says sound designer Jonathan Deans.

WORLDS APART WITH ONE THING IN COMMON...



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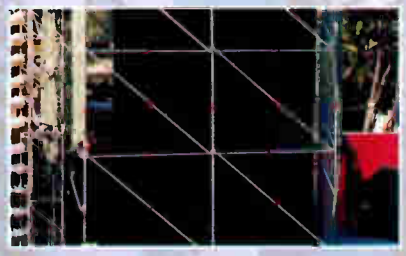

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CREST MOLDED SPEAKERS

Crest Audio (www.crestaudio.com) introduces its LQ Series of two-way speakers with three models, the LQ-10, LQ-12 and LQ-15. The LQ-15 features a 15-inch woofer, a 2-inch titanium diaphragm compression driver, power handling capacity of 1,000W continuous and a frequency response of 61-18k Hz ±3 dB. All enclosures are made of injection-molded polypropylene and feature 4-pin Neutrik connectors, mounting inserts and a built-in standmount.

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AUDIX MINIATURE CONDENSER

Audix (www.audixusa.com) intros the ADX-20i miniature condenser mic, which features a smooth response over a 40-20k Hz range, and includes a flexible gooseneck clip for clamping the mic to a saxophone, trombone, trumpet or other brass instruments. The ADX-20i operates on 9-52VDC phantom power supplied by the APS-910 preamp module or can be battery powered. Machined from solid brass, the ADX-20i features Audix's hallmark E-coat finish and retails for $249.

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NADY WIRELESS IEM SYSTEM

The EO3 personal in-ear monitor wireless system from Nady Systems (www.nadywireless.com) operates on eight factory switchable frequencies between 72-76 MHz and has a 300-foot range. The transmitter includes both line and mic ¼-inch inputs, input gain control, power on and audio modulation LEDs. The receiver has a combo on/off/volume control wheel and is supplied with earbuds. Retail: $329.95.

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STUDIOMASTER MIXER

Studiomaster (www.studiomaster.com) has introduced the 162BP compact mixer, a 16x2 rackmount unit that includes two channels that accept both mono mic and stereo line inputs simultaneously. Features include three-band channel EQ, direct channel outputs, two aux sends, LED channel overload indicators and 60mm faders. Master outputs meters are 12-segment LEDs, and L and R master outputs are via balanced XLR connectors. Price is $649.

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EAW SM84 MONITOR

Eastern Acoustics Works (www.eaw.com) debuts the SM84, a high-output stage monitor. Designed for bi-amped operation, the SM84 has four 8-inch LF drivers, and a 1.4-inch exit, 3-inch diaphragm HF-compression driver. The driver configuration reportedly maintains symmetrical and consistent frequency response both on- and off-axis in both the horizontal and vertical planes. Dispersion is 90° vertical (from stage level to straight up) and 40° horizontal. Power handling is 1kW continuous with 4kW peak capability. The contoured enclosure stands 12 inches high and includes a durable grille. Price is $2,992.

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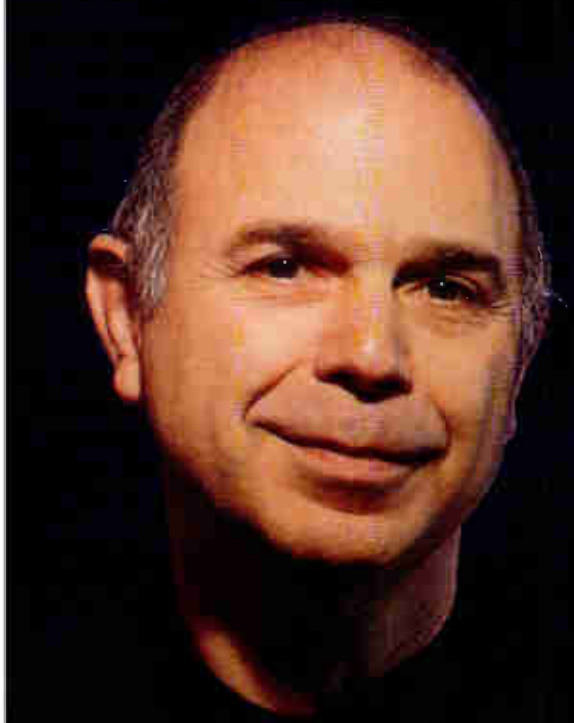

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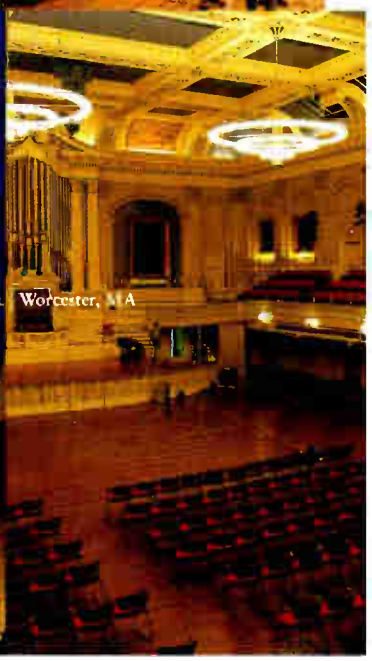

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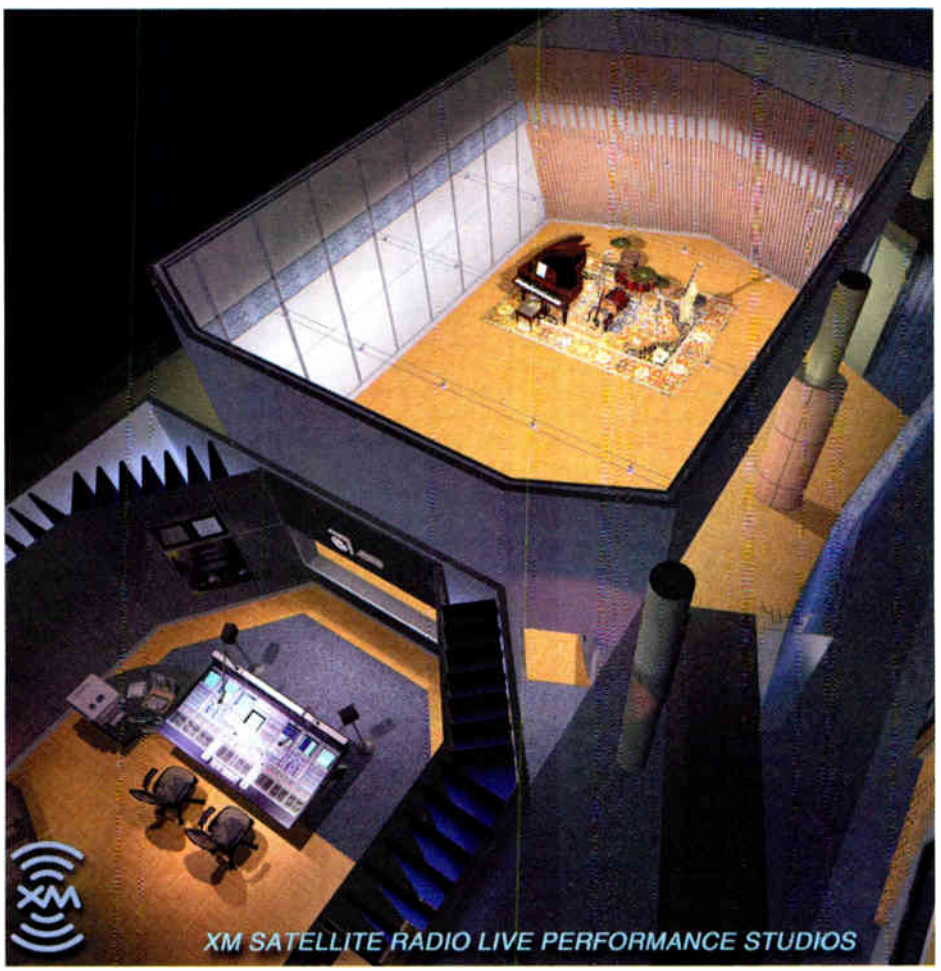
XM Radio Picks Oxford For Digital Studio

XM Satellite Radio is installing a Sony OXF-R3 Oxford console in the 2,300 square-foot Performance Studio of its new state-of-the-art 150,000-sq. ft. digital broadcast center. According to XM, the Washington, D.C.-based complex is the largest digital broadcast facility of its kind in the United States. It is fully equipped with 82-interconnected studios and a digital library containing more than 2.5 million titles. During its open house celebration last September, XM demonstrated its first prototype satellite radio for the U.S. market.



Above, an artist's rendition of the planned XM Satellite Radio live performance studios which is scheduled to include the Sony Oxford console as part of its operations.

XM has stated that it hopes to change the way Americans listen to radio by creating and packaging up to 100 national channels of digital-quality sound. It also stated that it plans to provide seamless coast-to-coast coverage of music, news, sports, talk, comedy and children's programming. Harnessing the power of today's advanced technology, XM Radio will transmit its radio broadcasts from its all-digital studios using some of the most powerful commercial satellites ever built, enabling direct satellite-to-radio transmissions with coast-to-coast coverage. For a per-month fee, subscribers will receive the XM signal in their cars and homes using small car phone-sized antennas and XM-capable radios. These radios will be manufactured by the leading names in consumer electronics and available at retail stores nationwide or as an option with the purchase of a new car. According to XM, the commercial launch of this service is scheduled to begin broadcasting coast-to-coast this summer.

XM vice president of operations, Tony Masiello.

According to XM vice president of operations Tony Masiello, the Oxford console will be used to produce and mix live concerts and studio recording sessions: "XM plans to use the console for all types of music including classical, big band, rock & roll, folk and opera. We needed a console that offers excellent sonic quality, a clean signal path and extensive automation. The Oxford really delivers. The board is easy-to-use, and has excellent equalization, flexible configurations and good ergonomics."

"We are delighted that XM Satellite Radio has chosen the Sony Oxford for such an innovative application." said Courtney Spencer, vice president of professional audio products at Sony Electronics' Broadcast and Professional Company. "It exemplifies the diverse capabilities of the console."

All Star Guitar Night To Heat Up Winter NAMM

Muriel Anderson's next All Star Guitar Night will be held at the Winter National Association of Music Merchants (NAMM) convention in Anaheim, California on Saturday, January 20th, 2001 at 8:00 p.m. Sony Professional Audio is once again a co-sponsor of the event. The All Star Guitar Night will benefit the "Music for Life Alliance," an organization founded by Anderson to help coordinate and bring funds to charities devoted to providing musical instruments to children.

"We are always happy to co-sponsor this event," said Paul Foschino, marketing manager for professional audio products at Sony Electronics' Broadcast and Professional Company. "Not only does it bring together many of the best guitarists in the world for a fun night of music, the proceeds from the event always support a worthy cause."

The international lineup for the event is scheduled to include Muriel Anderson (pictured left), Julian Lage, Memrox, Jacques Stotzem, Franco Morone, Danny and Beth Gottleib, Paulo Giordano, Stanley Jordan, and Pierre Bensusan.

Tickets for NAMM participants will be available at All Star Guitar Night sponsors' booths. For more information on the event, please visit www.all-starguitarnight.com.

SPARS NY Hosts Sony DMX-R100 Demo

Sony Professional Audio Group product manager Karl Kussmaul (left) and regional audio manager, Northern Region Andy Munitz presented a demo of the DMX-R100 digital console at the recent SPARS regional meeting at Gallagher's Restaurant in New York City. The SPARS event drew a number of leading studio owners, managers and engineers. Munitz and Kussmaul also demonstrated the Sony DRE-S777 Digital Sampling Reverb and discussed two recently released sampling discs – "American Acoustic Spaces," and "Japanese Acoustic Spaces" as well as the just-released "Sample Your Own Spaces" software now available on CD-ROM.

Sony PCM-3348 Digital Recorder Installed at Southern Tracks Recording

Southern Tracks Recording recently installed a Sony PCM 3348 digital recorder in its George Augspurger-designed studio. Host to many of today's most celebrated producers, engineers and artists, Southern Tracks has already used the new unit on projects for The Offspring, Our Lady Peace, hip-hop artists Outkast and alternative rockers Train.

"Several of our clients had used Sony's PCM 3348 during mix sessions at other studios, and they like working with it. That's a main reason behind our decision to purchase the recorder," said Southern Tracks owner Mike Clark. "Clients like to track with analog and then dump the analog tracks into the 3348. Sonically, it is a great machine. Plus, the sampling function is outstanding."

"The PCM is also good for archiving," continued Clark. "Record companies still require something on tape that they can archive, and while some labels are beginning to accept Pro Tools files, how easily will they be able to retrieve the material 10 years from now? Computer-related software seems to change every couple of weeks. This digital recorder offers a reliable, long-term solution."

by Rich Tozzoli

Filipetti on the Sony DRE-S777

Grammy award-winning engineer/mixer/producer Frank Filipetti is a busy man. With credits like Barbra Streisand, Elton John, James Taylor, Natalie Cole and Mariah Carey on your discography you're certain to be short on spare time. Recently catching up with him, SoundByte was able to ask him a few questions about using one of his favorite new studio toys - the Sony DRE-S777 Digital Sampling Reverb.

What acoustic samples on the S777 do you like the best so far?

My favorite sounds so far are on the European Halls and Churches disc. I especially like the Concertgebow Orchestra Hall, but there are several other terrific halls and churches on the disc as well. I haven't heard the new American Sounds disc, but I've been told it's amazing.

What projects have you used the S777 on recently?

I used the Concertgebow algorithm on two Billy Joel 5.1 surround sound albums I just completed, 'The Stranger' and '52nd Street.' I especially love the ability to select actual mic placements in the hall. For surround sound material it's incredible. I've also used it on the most recent Pavarotti and Friends CD and video. It was my main orchestral and band ambience, which was also the case on the 'Aida' cast recording.

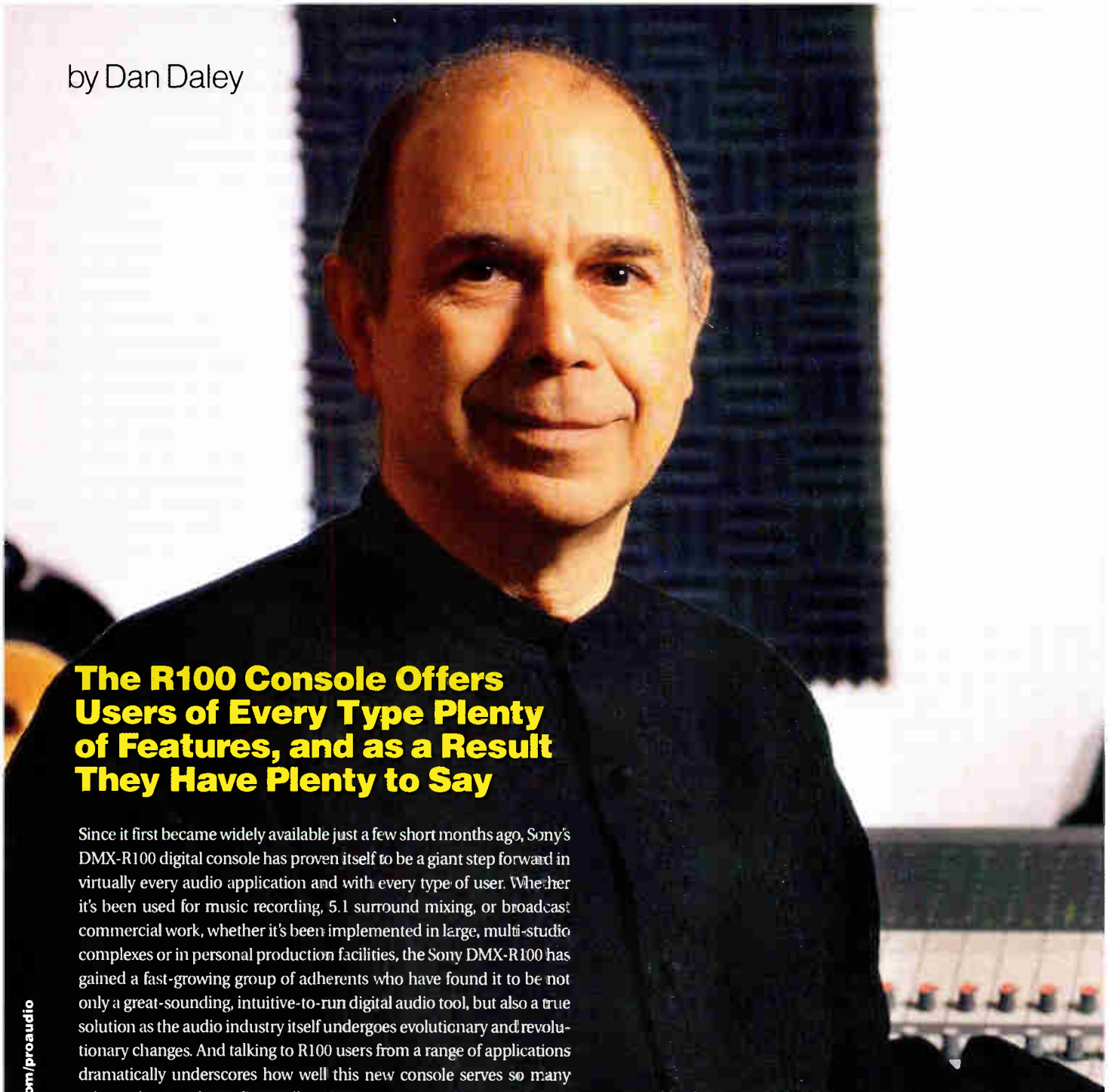
Can you describe a specific way that you used the S777?

For most of my work, I don't use the S777 to solve problems as much as to add a sense of depth and realism to the space I'm working in. But on the recent Liza CD, 'Minnelli on Minnelli,' I had a real problem to solve, and the S777 really came through. We recorded Liza live on stage at the Palace Theater. Her vocal level in the hall was so loud that I wasn't able to use the natural acoustics of the theater, but instead had to rely on the S777 to recreate the ambience of the live show. I was very pleased with the results.

What are your overall impressions of the S777?

The sound of the unit is superb. You totally forget that you're using a digital unit. The clarity, smoothness, depth and detail are simply amazing. And the positional cues are dead-on accurate. It is the first stereo in - stereo out unit I've used that honestly correlates the pan of the field of the source as opposed to changing a few early reflections. I can't wait until I can sample my two favorite EMT plates at Right Track and be able to carry them around with me."

by Dan Daley



The R100 Console Offers Users of Every Type Plenty of Features, and as a Result They Have Plenty to Say

Since it first became widely available just a few short months ago, Sony's DMX-R100 digital console has proven itself to be a giant step forward in virtually every audio application and with every type of user. Whether it's been used for music recording, 5.1 surround mixing, or broadcast commercial work, whether it's been implemented in large, multi-studio complexes or in personal production facilities, the Sony DMX-R100 has gained a fast-growing group of adherents who have found it to be not only a great-sounding, intuitive-to-run digital audio tool, but also a true solution as the audio industry itself undergoes evolutionary and revolutionary changes. And talking to R100 users from a range of applications dramatically underscores how well this new console serves so many roles and serves them all so well.

Michael Wagener has become renowned as an engineer, producer and mixer for such leading hard rock, metal and pop artists as Metallica, Ozzy Osborne, Queen, Skid Row and Janet Jackson. Last year, at his four-year-old WireWorld Studio in a suburb of Nashville, Wagener installed a Sony DMX-R100 console after spotting it online. "Just what I read about the console told me: that's what I need," says Wagener. "I've always been a fan of digital audio, and I was ready to upgrade my own studio from 16 to 24 bits and to 96 kHz. I was in the market for a new console for the Millennium and this had all the features I was looking for at a price that works for a personal studio."

Actually, Wagener liked the R100 so much, he bought two, ganging them together via the R100's flexible combination of analog and digital I/Os and giving him 112 inputs at up to 48 kHz and 56 inputs at 96 kHz. "And I use every single one of those inputs, too," he adds. He also works at various sampling rates, something the R100 easily accommodates.

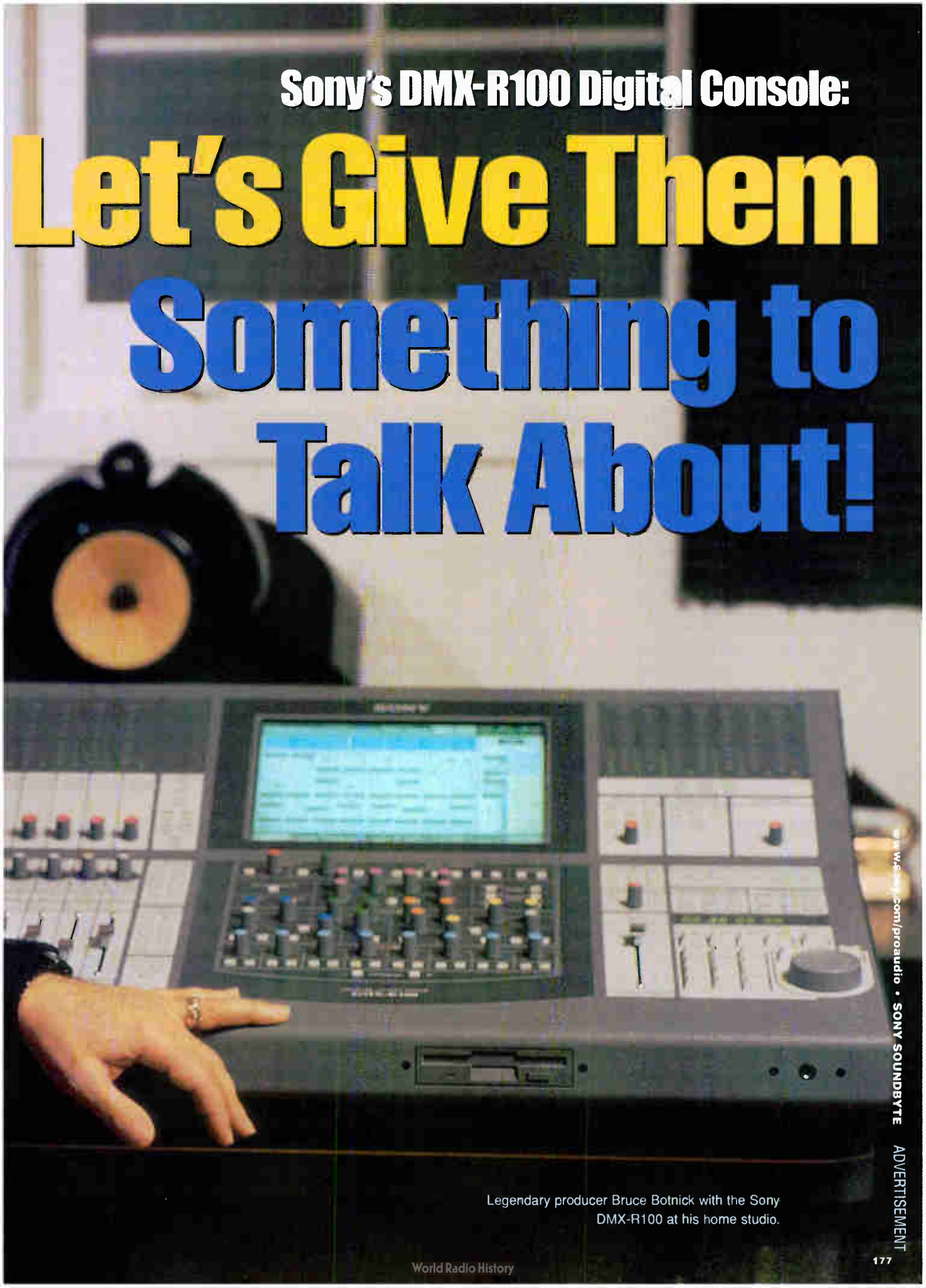
One thing that's striking about Wagener's observations about the R100 is that, for such an avid aficionado of digital audio who has spent a career collecting high-end A-D converters, he now finds that he uses the R100's onboard converters most of the time. "I think that surprised even me, at first," he says. "But the R100's converters are smooth and transparent. That's one of the hardest things to get right on a digital console, and Sony got it right for the R100." Wagener is equally effusive about the sound and the operation of the R1100's other onboard signal processing and dynamics.

"Actually, they got a lot of things right on this console, and that's the point," he observes, preparing for WireWorld's first all-R100 production of Florida band Olive Carpet. "The whole experience of using the console is transparent. You don't think about moving between digital and analog domains. You're not thinking about the interface between the console and a lot of outboard gear. You're just thinking about music. It makes the process very transparent and moves the sessions along."

In a very different part of the business spectrum is Soundtrack, the multi-room commercial, music and multimedia facility in Boston, sister

Sony's DMX-R100 Digital Console:

Let's Give Them Something to Talk About!



Legendary producer Bruce Botnick with the Sony DMX-R100 at his home studio.

Sony's DMX-R100 Digital Console:

Let's Give Them Something to Talk About!

facility to another complex of studios in Manhattan. When Soundtrack Boston installed its first Sony DMX-R100 in its Studio E last September, the studio's chief engineer Allen Smith was looking for a solution to a number of technical and business issues. "In Boston, we have seven studios, and we were looking to begin an upgrade process throughout the facility in 1999," he explains. "Not only did we want more and more sophisticated digital audio capability, but we also started seeing clients express interest in 5.1 surround mixing. And we knew we wanted 24-bit and 96-kHz capability. The studios vary in size, so our [digital] console choices had to have certain size parameters, as well, in some cases. Finally, any decision for a complex facility such as this has to be cost-effective."

Smith says he found the solution, to every one of those considerations in the DMX-R100. Not only did Soundtrack's first R100 replace a much more complex and more expensive older digital audio workstation platform, but did so at a very attractive price point, says Smith. "There's a big gap out there between the R100 and everything else out there with regard to digital audio mixers," Smith says. In addition, Soundtrack's engineering staff – which has used the R100 on radio productions, audio post for PBS broadcast programming, and sound design projects – was extremely positive about the new board's sound and functionality. According to Smith, these factors have already led to a decision by Soundtrack Boston to purchase two more R100s, each of which will also replace larger, more expensive digital audio platforms, giving the facility an enhanced scheduling flexibility by providing a consistent platform in multiple studios. It's also been installed in a studio which already has multichannel monitoring and mixing capability. "We can get the studio itself running in surround mode within a day or two, as soon as our clients start requesting it," says Smith. "But we know the R100 is ready to do surround the moment we turn it on."

New formats offer audio professionals new opportunities, and the Sony DMX-R100 is proving to be the perfect tool to leverage those possibilities. At Mi Casa Multimedia, a private Los Angeles facility (located in the restored hacienda-style home of classic horror-film actor Bela Lugosi), owners Robert Margouleff and Brant Biles have created, they say, the first facility dedicated to remastering theatrical film releases specifically for the DVD home theater market. And the centerpiece of Mi Casa's main studio is a newly delivered R100 console, which Margouleff says will be its main engine for 5.1 surround sound restorations for films.

"The R100 is perfect for this use because it packs a lot of power into a little box — it's a small-format board with a grown-up attitude," Margouleff states. "We're getting ready to do a lot of big films in the coming months, and the R100 figures largely in those plans."

Margouleff and Biles first worked with the Sony DMX-R100 console when they used it during a live audio streaming demonstration during the AES Convention in Los Angeles last year, doing a real-time, 24-bit/96-kHz 5.1 mix at USC's Norris Hall venue of a live performance of a 16-piece band playing nearly 3,000 miles away at McGill University in Toronto. "That was a stunning experience," Margouleff recalls, adding that the R100's performance for that event clinched his and Biles' decision to get one for Mi Casa. "The 24/96 EQing was phenomenal," Biles observed, focusing on the R100's exceptional tonal capabilities. "It was great to boost things up in the 30 kHz area and be able to give extra life to incoming signals."

The ease with which users can access the DMX-R100's numerous features is highlighted by producer/engineer Bruce Botnick, who chose the R100 as the first console for his personal studio in Southern California. And fittingly, Botnick, whose long list of career credits includes recording The Doors' classic albums, applied the R100 to a remix of a Doors concert – in Detroit from May 8, 1970. "That record is in stereo, but future ones will be in surround, and the R100 is going to make that process much easier and more creative," Botnick predicts. "The console's dynamic automation allows me to be more cre-

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Hot Picks: Winter NAMM 2001

Sony demos a full array of versatile new products on the show floor in Anaheim.

Sony Unveils CD Recorder Offerings For the Pro Audio Market

At Winter NAMM 2001, Sony Electronics is demonstrating its first two CD recorders for pro audio applications. The CDR-W66 is designed for mid- to high-end recording studios and broadcast production; the CDR-W33 targets more cost-conscious users, but offers most of the capabilities of its higher-priced sibling.

"Both units incorporate several unique features," said Courtney Spencer, vice president, Professional Audio Group, Broadcast and Professional Company, Sony Electronics Inc. "These include selectable DSP functions like Parametric EQ, Limiter & SBM (Super Bit Mapping®), and high-quality, 24-bit AD/DA conversion."

Physically similar, and sharing many of the same features, the innovative CDR-W66 and CDR-W33 offer CD-TEXT™ support, which allows disc/track names to be displayed and entered from the front panel AMS controller, the supplied remote control, or an optional PC keyboard. Remote transport control can also be accessed via Control-S or a PC-compatible keyboard. In addition, the CD recorders include a wireless/wired remote unit.

CDR-W33 Additional Features

- 32 kHz – 48 kHz built-in sampling rate converter
- Recordable and re-recordable recording media support
- FL display
- I/Os equipped with Coaxial Digital, Optical Digital, Analog Unbalanced phone jack
- 2U rack-mountable size in EIA.

In addition to functions found on the CDR-W33, the CDR-W66 offers such key features as:

- Word Clock interface
- 32 kHz – 96 kHz sample rate converter range
- Selectable SCMS modes
- AES EBU digital I/O, balanced XLR analog I/O
- RS-232C and parallel (GPI) control ports
- 2X speed duplication link for dubbing audio titles (using two CDR-W66 units)
- DSP functions available on digital inputs as well as analog

New Wireless Components

Building on the success of the 800 Series UHF Wireless Microphone System, Sony Electronics is showing the latest additions to the wireless microphone family: the newly developed WRT-847B UHF Synthesized transmitter unit, its interchangeable microphone heads, and the WRR-862B UHF synthesized Dual Diversity Tuner.

Five types of microphone heads are available for use with the WRT-847B. The CU-F780, CU-G780, and CU-E700 optional microphone capsules are designed for vocal applications such as broadcasting and live concerts. The CU-E672 and CU-F117 microphone capsules are intended for interviews in news gathering and field productions.

The WRT-847B transmitter unit offers several important key features, including: selectable RF output level (10 mW for multichannel operation and 50 mW for long working distance); audio gain and attenuation setting from +9 dB to -12 dB in 3 dB steps; and an easy-to-read LCD that indicates extensive information on operating conditions such as channel number, wireless channel frequency in MHz, audio input level, compander time constant, battery status, and accumulated operating time.

The compact new WRR-862B unit also operates over a 24 MHz frequency band and it has two built-in tuner modules to meet the demand for two-channel reception in ENG and EFP applications. Designed so that it can be easily mounted on Sony cameras, the tuner's magnesium diecast body is extremely lightweight and rugged. The WRR-862B can simultaneously receive two independent signals on two separate channels. The space diversity system is employed to eliminate signal dropout and provide stable reception. Two SMC9-4S (Sony 4pin) audio output connectors are provided on the top panel.

Pro MiniDisc Recorders

Sony Electronics is also displaying two 1U-high rack-mountable MiniDisc recorders. The MDS-E10 and the MDS-E12 incorporate the latest ATRAC type "R" algorithm for superior sound and provide a host of new options. The new units replace the earlier 2U-high MDS-E58 and the MDS-E11.

Sharing many of the same characteristics, the MDS-E10 and MDS-E12 feature: 10 "Instant Start" memories that allow immediate playback of any 10 tracks; SPDIF coaxial and optical digital I/O, as well as analog RCA I/O; Long REC/PLAY (Max. 320 min.) using ATRAC3 REC mode; and versatile menu control of various functions including: HOT START, AUTO CUE, AUTO PAUSE, SOUND START PAUSE, VARISPEED, NEXT TR RESERVE, LONG REC MODE (320 min), AC TIMER REC, and DIGITAL REC LEVEL ADJUST.

"The MDS-E10 is ideal for radio broadcast and DJ applications," states Paul Foschino, marketing, Professional Audio Group, Broadcast and Professional Company, Sony Electronics Inc. "The 'Instant Start' option stores the very beginning of the audio in RAM on up to 10 tracks which is great for triggering samples. Both models have pitch control as well. The MDS-E12 incorporates several additional options such as analog XLR I/O which makes it a higher-end recorder for broadcast pros, system contractors, and studio users."

Something to Talk About!

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ative and reduce the thinking portion of the process of mixing. You know what they say: 'Don't think — it's dangerous!' Well, the R100's operation lets me get right down to reacting to the material. I don't have to think about the mechanics of running the console."

The second project the R100 was used on in the two months since Botnick installed the console was mixing of the 5.1 and stereo versions of the soundtrack album for the forthcoming major motion picture from Paramount Pictures "Along Came a Spider," the score for which was composed by the legendary Jerry Goldsmith.

"The sound and the features of the R100 put it into a class of equipment you wouldn't have expected to find in a personal studio even a few years ago," Botnick says. "5.1 music mixes, film scores – I can do them all in high resolution 96/24 on this console."

The R100's high-resolution capability is illustrated at Classic Sound, in Manhattan, where owner and engineer Tom Lazarus recently edited and mixed three 24/96 projects that he had recorded on remote: Ravi Shankar's Carnegie Hall performance, guitar virtuoso Steve Mackey's new concerto "Tuck and Roll," and pianist Andre Previn's "Live at the Jazz Standard," all intended for DVD-Audio and CD release. Installed in Classic Sound's surround mixing suite, the R100 gave a technical performance as flawless as the artists' own.

"Besides sounding as good as it does, the R100 also helps position us for these new high-resolution audio formats," explains Lazarus. Classic Sound's mastering veteran Scott Hull, who also worked on the Ravi Shankar and Andre Previn projects adds, "Now we can record, edit, mix and master in high-resolution for both stereo and surround. Projects like these had been waiting over a year for the arrival of a console like this."

The Sony DMX-R100 has managed a rare feat in a highly technical industry: it serves many applications for a variety of users, and serves each one adroitly. That's because, as Bob Margouleff puts it so succinctly, "It's the best small-format console we have ever worked on. It really gives an outstanding performance."

Editorial Director: Anthony P. Montesano; **Managing Editor:** Anthony Savona; **Art Director:** Marshall Moseley; **Associate Art Director:** Greg Gennaro; **Cover Photo:** Edward Colver; **Photo Credits:** Pg. 173, Courtesy of XM Satellite Radio. Used with permission; Pg. 174, (bottom) Howard Sherman; Pg.176-177, Edward Colver;

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CDR-W66

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—FROM PAGE 22, IT'S ALL OVER

will start all over again. There will be a fresh respect for the intrinsic value of intellectual property, and its theft will be a capital crime, along with extremely strict laws with enough knee-jerk component to assure eons of protection by the elimination of even suspected offenders.

So what do we do? There is absolutely nothing that we can do about it. It is far too late. Maybe next time. The transition from a tangibly based society to a virtually based one is incredibly dangerous, nearly impossible in this case.

Make and sell as much music as you can. Call for, and then support, real prosecution of pirates. Stop and smell the few remaining flowers.

I suggest that we make the most of the next two decades. Make and sell as much music as you can. Call for, and then support, *real* prosecution of pirates. Stop and smell the few remaining flowers that haven't been stripped of scent by genetic engineering. Teach your kids why buying a song will actually improve the quality of life later on, while stealing it will only hasten the collapse.

Simply put, make the most of what we have now. ■

SSC is building a bunker in Montana out of bootleg CDs and VHS tapes.

End Note: This column is actually:

A. A rough concept for a screenplay for an intellectual science fiction movie.

B. A grand experiment to see if you actually read all the way through.

C. A serious warning of impending doom.

D. The granddaddy of April Fool's columns.

Choose one.

BY BLAIR JACKSON

Jobson (center) with members of the Bulgarian Women's Choir

ON THE EDGE WITH EDDIE JOBSON

"GLOBE MUSIC" AND BEYOND

by Bryan Reesman

Eddie Jobson is a man with parallel careers—art rock progenitor, contemporary instrumental forerunner, world music adventurer and cutting-edge television composer. The gifted multi-instrumentalist perennially seeks to expand the boundaries of music, unconcerned with the niche marketing mentality that has seized the record industry over the past decade. "My interest in music, since I was young, has always been in what was progressive," asserts Jobson. "In other words, who was doing what was *new*. I've never had that much interest in music that was frozen in time."

Unlike many progressive rockers who strive for a certain sound, Jobson seeks out new and exciting musical possibilities regardless of genre constraints. A recent trinity of musical works proves this—four seasons scoring the successful CBS series *Nash Bridges*; producing and remixing the recent *Voices of Life* compilation for the Bulgarian Women's Choir; and creating *Legacy*, a progressive rock opus. These projects may seem quite disparate on the surface, but they're not surprising given the eclectic musical path the British musician has forged for himself over the past 25 years: He's appeared on over 50 albums, from his early days with Curved Air and Roxy Music, his progressive adventures with UK and Frank Zappa, his two mid-'80s solo albums (including 1985's *Theme of Secrets*, the first album entirely performed and recorded on the Synclavier), on through to his recent work. He's also won CLIO awards for Best Score for work on Amtrak and Bermuda tourism commercials.

Jobson's most recent high-profile gig was scoring nearly 100 episodes of CBS' *Nash Bridges*. Star and series executive producer Don Johnson

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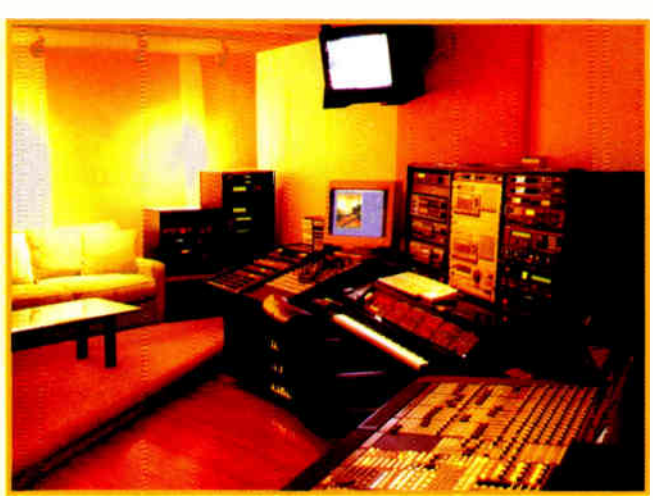
Jobson's L.A.-area studio



LABEL M: THE ART OF THE JAZZ ARCHIVE

by Robin Tolleson

Joel Dorn is a lifer, in a musical sense of the word, and his latest venture, Label M, gives him a crack at bringing a lot of important, historic, previously unheard jazz before the public. "This is exciting—there's a sense of discovery every day," says the producer. "It's like going into a mine and saying, 'That looks like gold,' and you come out with something. We listen to a lot of tapes—you gotta kiss a lot of frogs before one of them turns into a handsome prince. But we found some great Coleman Hawkins the other day, at the end of his life. *That's* a big deal."

Gene Paul (left) and Joel Dorn of Label M

"Technology has allowed us to put this stuff in a form where people can still look and listen. It's almost a teaching tool to young students," says Dorn's engineer of some 30 years, Gene Paul. "You listen and realize that people don't play that way now. So you are privy to being as close to that club, as close to that performance, as close to that spirit that was happening at the time, and technology is allowing us to snoop back into that zone."

Dorn's previous venture, 32 Jazz, was successful in deconstructing and reconstructing the Muse record label and creating "lifestyle records"—compilations of work by jazz artists, such as Ron Carter, Woody Shaw, Houston Person, Hank Jones, David Newman and Sonny Stitt, known as the "Jazz For..." series. "Not bullshit jazz, not cop-out jazz, *real* jazz," Dorn says, "but real jazz that was accessible to people who weren't necessarily jazz fans. We made mood albums, and basically it was an extension of my DJ days, where you put on an hour of good music.

"At Label M, we don't have

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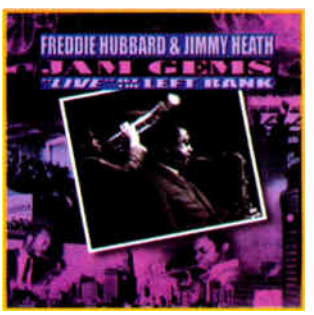

EVERLAST: THE HIP HOP STAR BRANCHES OUT

by David John Farinella

You know there's trouble brewing when one of your producers describes you with a string of adjectives: "The new album is kind of hip hop, soul, country..." starts John Gamble. "I don't know exactly what to call it," he concludes after a second of thought. "Erik has been a chameleon during his career, but what he's doing now is not chameleon-like."

"Erik" is Erik Schrody, better known as Everlast.

The album he's discussing is *Eat at Whitey's*, the stunning follow-up to the brilliant smash hit *Whitey Ford Sings the Blues*. Everlast's first musical forays were strictly hip hop, but nowadays he's branched out into the realms of folk, blues, rock, and, yes, soul and country. Beck got away with it; Everlast probably will, too.

As a member of House of Pain, Everlast shot to the top of the charts on the strength of the party anthem "Jump Around." It was an enviable position for anyone—except Everlast. The day before the band released their third album, the singer bolted. "We didn't break up behind girls or money or anything like that," Everlast explains. "I just found myself in a place where I couldn't deal anymore, and I had to move on. I think with hindsight the guys understood it, and I think they might even respect me for it."

Shortly after the demise of HOP, Everlast was preparing

—CONTINUED ON PAGE 204

BOB SEGER'S "NIGHT MOVES"

by Dan Daley

"Night Moves" was a good move for Bob Seger. The song—both the Number One single and the title track of the Capitol Records album released in October 1976—solidified his place as one of the premier "heartland" rockers, along with Bruce Springsteen and John Mellencamp, creating what was essentially a new genre in the rapidly fragmenting American music industry. The same album also contained the singles "Mainstreet" and "Rock and Roll Never Forgets," and their success paved the way for Seger to expand on these themes—lyrically, musically and emotionally—to create a body of work that includes such Classic Rock K-Tel compilation staples as "Against the Wind" and "Stranger in Town," right through the ubiquitous "Like a Rock," which quite possibly has sold as many Chevy pickup trucks as it has records.

Like many of the records that have been profiled in "Classic Tracks" before it, "Night Moves" was largely spontaneous—the result of the last-minute need for one more song while fate or the A&R department is breathing down the artists' necks—and it nearly didn't happen at all, with luck and circumstance having as much influence as talent and persistence. Seger's own career up to this point had mirrored that situation. He had given up on music at least once before, after stunted attempts with such bands as the Beach Bums and Doug Brown & The Omens on the college-heavy Detroit/Ann Arbor circuit in the 1960s. There had been a couple of minor successes for Seger on the local Cameo label, and his first solo band, the Bob Seger System, was signed to Capitol Records briefly. Still, that wasn't enough to keep Seger from throwing in the towel in 1969 to attend college.

But Seger couldn't stay away. After restarting his career in 1971 and assembling the Silver Bullet Band, a live double-album, recorded in Detroit, coupled with three years of relentless touring, gave him a new launch pad. Capitol Records was again interested, based on the success of the *Live Bullet* album, but wanted to hear what Seger's studio efforts would produce.

Jack Richardson was a Toronto native whose career had interesting parallels to Seger's; he, too, pursued a career as a musician in his youth, only to move into advertising in his thirties to support a family. He took a flyer on a Canadian rock band called the Guess Who, mortgaging his house to pay for their first major label record, which he produced. With hits like "These Eyes" and "American Woman" under his belt—records by a Canadian band, which, ironically, presaged the Americana music movement that Seger would champion—Richardson quickly attracted other production clients, including Poco, Alice Cooper and Manowar. In early 1976, Richardson was approached by Eddie "Punch" Andrews, Seger's manager and former bandmate in the Detroit trio The Decibels, about producing four sides for his client. Richardson thought the talks had been vague; Andrews apparently felt otherwise. "I came home from off a long date in L.A., and my wife says to me, 'Punch called and says you're supposed to be in Memphis with him and Bob Seger,'" Richardson recalls. "I said, no way, not on that short notice. So we talked again, and again it seemed to go nowhere. On four occasions, I was booked to meet with [Seger], and each time it got put off, once when I was already at the airport. Then I get a call one day telling me they're coming to Toronto. That wasn't the way I liked to do things. But I went ahead and called [engineer] Brian Christian, who had worked with me on the Guess Who and other records, to come in from L.A."

Seger and Richardson met at Soundstage, the producer's studio within the production complex Nimbus 9 that Richardson and three former advertising business colleagues had formed in the late 1960s in Toronto to pursue music and commercial projects. Seger and Richardson sat in his office, and the artist played a couple of songs that Richardson recalls as being "not that great, quite honestly. Then I suggested that we also do the old Supremes song 'My World Is Empty Without You, Babe.' So that was three songs. And Bob had been noodling around on the piano in my office, and I told him I thought he had the makings of a good song there, though he didn't feel the same way at the time."

The sessions were scheduled for three days, with members of the Silver Bullet Band having flown in, and the first three songs went down quickly, though without much passion. In fact, finding the fourth song had become such an apparent lost cause that Richardson sent the band's guitar and keyboard players back to Detroit.

As it turned out, however, Seger's noodling had evolved into a song, and with Richardson's prompting, he and Seger cobbled an arrangement to it in the studio, where the remaining musicians—including Silver Bullet drummer Charlie Allen Martin and bassist Chris

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Campbell—had been quickly complemented with two last-minute local players, Doug Riley on organ and Joe Miquelon on electric guitar.

"The whole arrangement came together in the studio," Richardson recalls. There, Richardson sat in the middle of the studio with Seger and the band, running the newly minted "Night Moves" down, making decisions such as the addition of an acoustic guitar-and-vocal breakdown in the middle of the song, while Christian—assisted in part by Richardson's son Garth, who has gone on to rack up his own significant engineering credits for Rage Against the Machine and Red Hot Chili Peppers—ran the custom Audiotronics console and 3M 79 16-track 1-inch multitrack deck running Ampex 456. Monitoring was through a pair of Super Big Reds loaded with Altec speakers and a Mastering Lab crossover, driven by 60-watt stereo Citation amps, which

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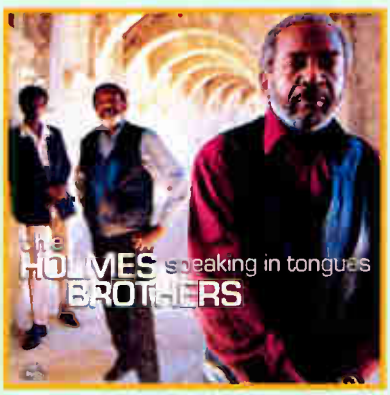
The Mix Staff Members Pick Their Current Favorites

Bill Frisell: *Blues Dream* (Nonesuch)
Though he is commonly pigeonholed as a "jazz" guitarist because he is a superb improviser, Bill Frisell defies easy categorization. The incredibly prolific musician's last

few CDs have been ruminations on various traditional American styles—mostly country and folk. *Blues Dream* continues in that vein, but it is by far the most complex and fascinating of these explorations; in fact, I'm going to go out on a limb and suggest it is Frisell's best album ever. Fronting a septet that includes master slide guitarist Greg Leisz, bassist David Piltch, drummer Kenny Wolleson, trumpeter Ron Miles, alto saxophonist Billy Drewes and trombonist Curtis Fowlkes, Frisell nimbly travels through a wide assortment of styles, from numbers that sound like they're being played by the ghosts of turn-of-the-century New Orleans horn players, to deep country blues, to post-*Bitches Brew* abstractions. It's all soaked in tradition, yet filtered through a modern sensibility. The combination of Frisell's clean picking and Leisz's always tasteful accompaniment on everything from pedal steel to Scheerhorn resonator guitar is absolutely beautiful, and the horn players are always integrated into the sound in such interesting and unpredictable ways. A rich, eclectic masterpiece.

Producer: Lee Townsend. Engineer: Judy Clapp. Studios: O'Henry (L.A.), Different Fur (San Francisco, mixing). Mastering: Greg Calbi/Sterling (New York City). *—Blair Jackson*

The Holmes Brothers: *Speaking in Tongues* (Alligator)
For music lovers who miss '60s soul a la Otis, Wilson and Aretha, there are the Holmes Brothers. Wendell and Sherman Holmes have been playing and singing since the '60s, but they truly found an audience in the past dozen or so years, making critically acclaimed soul/funk/gospel/indie albums along with drummer Popsy



Dixon. In 1997, Joan Osborne invited the group to sing backing vocals on her tour, opening for Bob Dylan. On this release, the musicians have traded places, with Osborne not only singing in the three-woman backing choir called the "Precious Three," but producing the music as well. Songs include a few gospel originals, and powerful covers of material ranging from Ben Harper's "Homeless Child" to Gamble & Huff's "Love Train" and a funky gospel version of Dylan's "Man of Peace."

—CONTINUED ON PAGE 206

Richardson admits were pretty underpowered but he felt sounded best with the speakers and room.

The track is sparse—bass, drums, acoustic and electric guitars, piano and a Hammond C-3 with a Leslie speaker cabinet. The drum kit was miked using a Shure SM57 on the snare and a pair of Neumann U67 tube microphones as overheads. The guitar amp had an SM57 close in on the speaker cone, a Sennheiser 421 near the outer edge; the acoustic guitar, which Seger played as an overdub after playing the acoustic piano on the basic track, was recorded with one of the six KM84 microphones that Richardson personally owned. The piano was miked with a pair of U67s in an overhead-V configuration; the Leslie cabinet had a Sennheiser 421 on the bottom rotor and two U67s on the top rotor. When the "record" lights went red, Richardson was in the control room tapping a pencil on an SM53 as a metronome. "It was sparse, but I looked at Bob as a kind of a street singer," Richardson says. "The delivery of the whole track needed to be kind of raw. It wasn't a matter of reflecting the needs of this one song; it was about reflecting the way Bob comes across."

The lyric inspiration, Seger once said, came from his youth: "I was shy; super shy. And I happened to fall into a faster crowd than I'd ever been in before. Because I played music, I was sort of a gimmick for those guys. And I got to meet the really 'hot' chicks, and I had my first great love affair, which is what 'Night Moves' is about; it's about that girl. You know, the girl with the big breasts that we all went *kazappo* for when we reached puberty. It was a really mad, crazy affair. The album as well as the song were inspired by *American Graffiti*. I came out of the theater thinking, 'Hey, I've got a story to tell, too! Nobody has ever told about how it was to grow up in my neck of the woods.'"

The basic track for "Night Moves" went down in fewer than 10 passes on the last day of tracking for the entire four-song project—and that was allowing, Richardson reminds, for the fact that two of the bandmembers were no longer there. "There was definitely some time involved for the band and the studio guys to get their communication together," he says. The bulk of the song was cut, the session was suspended while Seger recorded the acoustic guitar interlude, then the band resumed for the big finish. The three parts would be spliced together by Richardson and

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Christian on the 2-inch tape after the vocals were done.

Seger sang into a U67, as did the three hired female background singers who come in only on the tag. The vocals were recorded virtually flat. "I'm not one for playing with EQ," Richardson says. "I'd rather spend the time finding the right microphone and getting the right setup for the singer. In this case, I pushed Bob up a very little around the 1.6 to 1.8kHz range to accentuate the harmonics in his voice. He's already got plenty of power in the high end. I think if you have to add more than 2 dB of EQ to anything, you're in a salvage situation." Drums and vocals got a touch of Teletronix LA-2A, as did the final mix. Richardson was prepared to do several tracks of lead vocals and comp them later—the sparseness of the track had left him plenty of media real estate to play with—but Seger got it on one track within five passes through the song. The mix was done that same day, spruced up with echo from EMT stereo plates and little else.

As good as "Night Moves" was—and Richardson thought it was an obvious single—the song still had to contend with the fickleness of fate. After Seger and crew left, Punch Andrews called to say that he was less than pleased with the mixes, and then phoned again weeks later to say the record company felt the same way. Richardson recalls being annoyed by the comments. Three months later, John Carter, an A&R person for Capitol in Canada, stopped by the studio. Richardson asked him how he had liked the Seger mixes. "He ducked the issue a little, but then said he thought that both tracks were pretty good—for B sides," Richardson remembers. "And I said to him, '*Both* tracks? There were four songs! Would you like to hear the others?' So I played him 'Night Moves,' and he really liked it. I made some suggestions for editing it down for a single." The original mix had come in at over five minutes long; the single, after mastering and editing by Wally Traugott at Capitol, is three-and-change and radio-friendly, as they used to say.

Weeks later, on a break for a session producing the Brecker Brothers in New York, Richardson opened *Billboard* and saw "Night Moves" hit the charts at 95. He also noticed that the credits read it had been produced by Punch Andrews. He made a call to Capitol, but the next week, as the song began to rocket up the charts, the credit remained unchanged. The normally avuncular Richardson went ballistic. "I called John Carter and told him you've got 24 hours to get the credits right," says Richardson. The next issue, it read "Producers: Jack Richardson and Punch Andrews." "Punch wasn't even at the sessions," Richardson adds with a chuckle.

"Night Moves" hit the Top 10 (making it to Number 4) and remained there for several weeks. "Like all records, it's a concoction of how people were feeling and thinking at a moment in time," Richardson sums up. "And like a lot of hit records, it came together fast—the song and the record. There wasn't a lot of time to spend screwing it up."

(Look for a full Mix *interview with Richardson in an upcoming issue.)* ■

—FROM PAGE 184, EDDIE JOBSON

knew Frank Zappa's music fairly well and thus was aware of Jobson's musical chops. "It was his directive to do the score in a world music style," explains Jobson. "He was persistent in his request for percussion, percussion and more percussion, especially African percussion. What became a bigger challenge was that many of the normal tools you would use for scoring were removed—such as harmony, melody, being able to use synth pads or strings. Any of the typical things that you would evoke emotion with in order to capture the sense of the scene were essentially forbidden."

All the young dudes: Jobson in his days with UK

The composer relished the challenge, generating an utterly original palette of sounds. Jobson incorporated acoustic guitar, didgeridoo and quirky instruments such as a harmonica and a Jew's harp. "It was a great experience, because it made me learn a lot about certain types of music, from rap to mariachi, that I otherwise may not have fully listened to," he says. "This whole process certainly expanded my understanding of musical styles."

Some episodes were done with specific styles: One episode featuring Nash's MIA brother "started off as Chinese and ends up as Vietnamese in style," Jobson notes. Other shows had only one dominant style, like bagpipes and Irish pennywhistle in the "Brothers McMillen" episode. Further, Jobson composed nearly all of the background music heard in various locations, be it a Chinese restaurant or a shopping mall or a low-rider's car.

Although he had a music editor, Jobson engineered all of his tracks himself. "I played all the instruments. The music was all programmed on the Synclavier but using external MIDI samplers and synths." Working on *Nash Bridges* took up eight months a year for four years. "Television is a very tough medium for a composer," Jobson says. "Everything is done under such pressure and deadlines. Demands are being made all the time to sound like record tracks, which people spend weeks, months, even years on, and yet, as a TV composer, you literally have to turn the track around in two or three hours. We did 1,500 pieces of music for *Nash*. I was making 15 cues a week, often with just two or three days to do it in."

After the fourth season, which ended in the spring of 2000, Jobson decided to retire from *Nash Bridges,* because there were two other projects he needed to finish, both involving the Bulgarian Women's Choir. He had begun working with them in 1995 for his *Legacy* album—which was originally intended to be a UK reunion album but evolved into something bigger—as well as producing and remixing tracks for a compilation of the choir's music.

The pairing of Jobson and the Bulgarian Women's Choir was kismet. During the choir's successful U.S. tours between 1987 and 1989, Jobson was living on the Caribbean island of Montserrat, absorbing socca and reggae, complete-

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ly oblivious to their music. But in 1993, friend and former UK bandmate John Wetton played him the beguiling, otherworldly sounds of the choir, and Jobson was awestruck. "The level of dissonance and harmonic complexity was incredible," the composer recalls. "The fact that they could actually sing this was astounding to me. There was just such a rich musicality to it and [such] depth and history. It tapped into something from my childhood." That connection was his exposure to a myriad of forms of Balkan folk music and African music through the still-active Billingham International Folklore Festival, co-founded by Jobson's father in his hometown in northern England.

It was a trial-and-error process of trying to make *Voices of Life* sound pleasant enough to Western ears and to people used to somewhat more high-fidelity recordings, without removing the real character of the choir.

As a curtain boy at the theater, Jobson was exposed to performers from Yugoslavia, Czechoslovakia, Russia, Ukraine and Hungary. "At the time, I was a classical musician but was exposed to all of this rich, deep folk music—the accordions, the cymbalom, the gaida, which is a kind of bagpipe instrument, and double-reeded, Middle Eastern-sounding instruments. All of this was part of my upbringing." It also tied into Jobson's love of Russian classical music. "Listening to the Bulgarians' music tapped into early feelings that I had about this music of the region."

The choir's 2,000-year musical history further tantalized the accomplished musician. "They have parts of their singing that are still diaphonic," marvels Jobson. "This is a vestige of early polyphony when Bulgaria was isolated from the rest of the world [for 1,000 years], just before polyphonic harmony developed in Western Europe. And the fact that you can still hear that in their music now—these diaphonic lines or soloists singing over a single drone—is fascinating."

Even more compelling for Jobson was the fact that the choir has spent the last 50 years pursuing innovative ideas. "The Soviets brought in extraordinary, contemporary classical composers who have tried to do extremely cutting-edge things with the choir," he notes. The Bulgarians' other collaborations also echo Jobson's own progressive predilections. They have worked with the Kodo drummers of Japan, the Tuuvan throat singers Huun Huur-Tu, the Moscow Art Trio and a flamenco singer from Spain. Add to that list an art rocker with an equally eclectic career. "It shows a good spirit of innovation that they're prepared to embrace all kinds of music," he says.

Once he heard them, the mesmerizing sounds of the Bulgarian Women's Choir ignited Jobson's imagination. He began formulating a project that he felt would take progressive music into the next century. He had no desire to relive his days with UK, but he wanted to take what they had done and extrapolate where progressive music might have gone in the last two decades—beyond the jazz and classical influences that were paramount to '70s prog rockers like UK, ELP and Yes. Inspired by the global village that modern technology was helping to build, Jobson began to look at bringing in music that had escaped the embrace of past progressive rockers—such as blues, funk, and most importantly, world music—as well as to free the style from a stringently structured, nearly academic viewpoint.

"What I came up with was what I now call 'globe music,'" remarks Jobson. "The difference between globe music and world music is that world music tends to still be very ethnic and favors the Third World. Globe music recognizes somewhat more cultured musical styles and tries to incorporate them into an amalgamation of other somewhat more cultured musical styles."

Integrating the Bulgarian choir into the *Legacy* project was far more complex than it sounds. Jobson faced a series of hurdles in taking his own words and making them singable by the choir. "The first challenge was understanding what their music was, where the style originated and learning all these stylistic elements that were combined into this sonic montage that is the Bulgarian Women's Choir."

The second challenge involved translating his musical ideas into their own

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musical dialect. "Every little yelp and whoop and yodel was very precisely written using fairly archaic notation devices. There were inverted mordents, turns and other devices that I hadn't worked with or seen since studying music theory when I was 14 years old. But there it all was in the score. They're a highly disciplined choir. Even though they are traditional folk singers, they have a very strict regimen of classical study. They all read music extremely well."

The third challenge was translating Jobson's poetry into Bulgarian words. He sought the talents of a Balkan poetry professor from Boston University, and together they worked out the poems into Bulgarian. "It's a very percussive language," explains Jobson. "A lot of the words just don't seem to have any vowels in them, so I would ask him what a certain English phrase was, and he would come back with this machine gun staccato that was completely unsingable. Further, he said that some of the lyrics that they used were not only in Bulgarian, but they were from archaic Bulgarian folk poetry. So to really do it in the authentic style, we had to use phrases that would be typical of ancient poetry. I would come up with these phrases, and he would find interesting metaphors that they would have used a couple of centuries ago."

The last step in scoring the music was writing the words in the proper alphabet. The choir reads in the cyrillic alphabet, so Jobson found a transcriber in New York to rewrite the score "because in vocal scoring, every syllable has to have a note assigned to it. Where you may have one note with a three-syllable word, that one note had to be turned into three notes with the right rhythm. So we had to rewrite the entire score [and integrate the] cyrillic words by hand, which was remarkable to watch."

The musical and lyrical theme for *Legacy* was inspired by his trips to Bulgaria to begin recording the choir, to the Czech Republic to record the City of Prague Philharmonic, and by his observations about what had transpired there over the last 50 years and the aftermath of Eastern Europe's despotic regimes. "That's what the title refers to," he says, "the legacy that's been left not only by the oppressors, but this spiritual legacy that has been retained by the people, despite so many years of hardship."

The first recording sessions for *Legacy* took place in 1995. Jobson recorded the group in the Russian Cultural Center in the Bulgarian capital of Sofia, bringing

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in 14 cases of digital recording equipment from Floating Earth, a company that specializes in on-location classical recording. For the 1999 sessions, he rented a cathedral and brought equipment and recording engineer Mike Cox from Abbey Road Studios. Jobson miked the choir with four pairs of Schoeps microphones run into a Genex 20-bit hard disk system. He utilized a Tascam DA-88 for playback. Because the two *Legacy* vocal numbers were to be later integrated into rock songs, the conductor required the use of a click track.

The recordings were contained to just eight tracks. "I didn't want to get into too many microphones," Jobson remarks. "We wanted to keep it fairly pure, so we just had a couple of solo mics down in front of the choir, and then the main two fairly widely spread close mics. Then a couple of higher overheads, and then a couple of ambient mics." Mixing the tracks was relatively easy: "I usually found that just two of the pairs were enough, usually the close mics and one of the ambients mixed in was enough, if you had the right placement."

After beginning work on *Legacy*, Jobson became sidetracked with scoring *Nash*. Then the Bulgarian Women's Choir record label in Germany approached him about releasing future albums by the group, especially as Jobson had founded a label for the difficult-to-market *Legacy* project called Globe Music Media Arts. He suggested assembling a compilation of their best live and studio performances, basically a mixture of released and unreleased material. He would later add three tracks from the *Legacy* project—"Zavesata Pada (The Curtain Falls)," "Utopia" and the instrumental album intro "Nov Den (A New Day)"—but in a form more befitting their style.

For the *Voices of Life* album, Jobson spent two months in his L.A. studio remixing the older recordings to clean out noise—"air conditioning buzzes, lighting hums and even a lot of coughing from the audience, which was very difficult to remove," he explains. "A lot of it came down to clever manual editing on Pro Tools to remove sounds and then trying to extend sounds from other places or even time-expand sounds in order to fill gaps that we'd taken out; sometimes editing in-between phrases and filling the phrases with high-quality digital cathedral reverb. A lot of the work on my part was in trying to make the recordings sound like high-fidelity, full-sonic recordings, whereas many of the original recordings didn't. I did that just by extensive EQ'ing.

"The choir's tonality is very difficult to record, especially when it's not miked terribly well," he continues. "You end up with a lot of shrieking formants in the sound, and these can really combine to create this dense, high-pitched whistling in the sound that on speakers can be pretty unpleasant. It was a very difficult job, because I had to take very narrow Q's on those harmonics and isolate them and notch them out. But there were so many of them within the one sound that by the time I got through it all and notched them all out, a lot of the presence of the track would disappear. So then I'd have to rebuild it back up again with a more pleasant top end, bring the presence back in without that obnoxious sibilance. It was a trial-and-error process of trying to make it sound pleasant enough to Western ears and to people used to somewhat more high-fidelity recordings, without removing the real character of the choir."

Voices of Life, the dynamic Bulgarian Women's Choir compilation that also includes guest spots from King Crimson's Tony Levin (on Chapman stick), Bill Bruford (drums), Jobson (electric violin and surreptitious synths) and the string section of the Prague Philharmonic, has found a receptive audience in the States; the Bulgarian Women's Choir successfully toured the U.S. last fall. Jobson and the choir made numerous NPR appearances, and CNN taped one of their performances. In addition, they were selected International Artist of the Year on Amazon.com, and they have received critical acclaim from prominent newspapers, including *The New York Times* and the *Los Angeles Times*.

One hopes that the critical acclaim that the *Voices* album has garnered will also find its way to *Legacy* once it is finally released. But Jobson is concerned with staying true to himself, no matter where his muse takes him. "I suppose, when I look back, it does seem like I've gone in a lot of different directions," he observes. "But for me, it's always been the same direction, it's just been in pursuit of new, interesting things. I try to stay on the cutting edge as best I can, both with technology and with whatever's going on musically, because that's what gets me out of bed in the morning: not getting too stuck on the same thing and going into a repeat formula mode."

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—FROM PAGE 185, LABEL M

an existing label as our wellspring," he adds. "What we have are collections of live music that I've been stashing for the last 15 or 20 years. The hope has been to someday have a label built around live unreleased music in a variety of genres by major artists at the peak of their powers." Much of the first live product on Label M is from a large collection of reel-to-reel tapes originally recorded by Vernon Welsh at the Famous Ballroom in Baltimore, chronicling Left Bank Jazz Society events in the 1960s and '70s. First releases included Stan Getz' *My Foolish Heart*, *Al Cohn and Zoot Sims Live at the Left Bank*, *Cedar Walton Live at the Left Bank* and Sonny Stitt's *Just the Way It Was*.

Most of this stuff is just feathers—the more you touch it and make it right, the wronger it becomes. As stupid as it may sound, it's what you don't do to it that makes it great. Leave it as honest as you can.

—Gene Paul

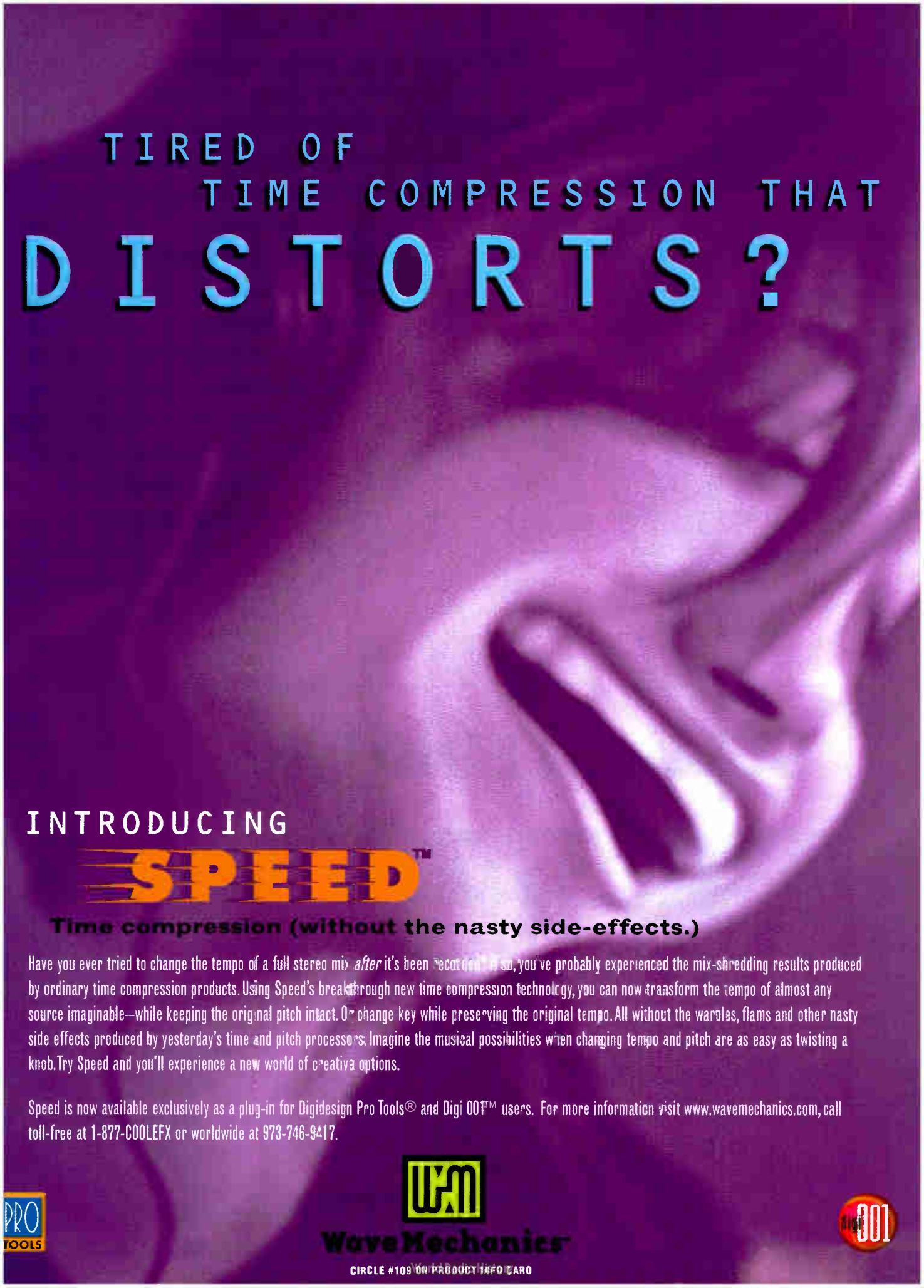
There is also a subterranean world of people outside the music business who have tapes that were recorded on an amateur basis. "Someone else might say 'illegally,'" Dorn quips. "What we do is get clearances on them, get the rights, pay the artists and make them legal and legitimate and put them out. Once the word gets out that you're looking, lots of musicians have tapes of their own. A soundman will say, 'Here—here's your performance tonight.' Now we get tapes every day from people." Dorn's son, Adam, helps to gather and listen to material, along with others at the label. "The jungle drums are out there on us in the tape collecting world," Joel says. "Lots of people are contacting us. So you put it on—you either like it or you don't like it. I don't want to make this sound like there's any great mystery to it."

"Most of this old stuff was recorded almost by mistake," says Gene Paul. "*The Left Bank* collection was recorded reel-to-reel, 3¾, half-mil, Mylar tape, quarter-track. I don't think you could do any worse. They put the piano in mono on one side, with the drums and the bass. The other side would be two horns or a horn and a vibe or something. And we would make a DAT of these tapes right away, because with the mylar tape, being half-mil, you run into certain problems. When it stops quickly, it stretches the tape, and the tape literally turns into a thread, so that portion of tape you cut off and throw away. Once the mylar stretches, it's over. Once you put it on and start playing it, you must continue through the whole side. It's so thin that you can barely thread it without it bending and fraying and falling apart. And it's quarter-track, which means you have two channels going one way, and then you turn the tape over and there's two more. But when all is said and done, the music really lifts it to a point where you say, 'Listen to what he's playing.'

"It's brilliant Stan [Getz]," Paul continues. "Sonny Stitt's the same. We had to have gone through eight or 10 hours of music. Joel and I just sit there, and when it hits, it hits. Joel says, 'Do you think you can dig the sound out?' If it survives getting through it and everybody says, 'Did you hear Getz?,' that's the key. Getz was on a good night. There are moments that you hear the honesty. You hear something go down that had nothing to do with the red light. That privilege of searching in the treasure chest is just overwhelming, because many times you see a side that never existed on record. When this one came by, everybody in the room sat up. And if you can polish it a little bit and not lose that...

"We do a little No Noise, we do a few things of the technical world; we're not the Flintstones," the engineer continues. "But when No Noise starts to become music, I stop. I'd rather hear noise than hear the band scalped. So I'll stop there, and noise is my friend. The music has to be so focused and so spectacular that it truly extends all of the flaws. You just don't see them anymore. If you're into Getz, there's no way you're going to stop listening to Getz to listen to some flaw.

"We're using Sonic Solutions," Paul says. "In this case, we're coming off an Otari 50/50 quarter-track reel-to-reel. We're going through some real fine Apogees, and we're going into a Yamaha digital mixer in order to try and spread this a little bit. And then the mix is mostly passive. It's just a tool to add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maybe a little room sound, a little echo and spread it out very gently. Most of this stuff is just feathers—the more you touch it and make it right, the wronger it becomes. As stupid as it may sound, it's what you *don't* do to it that makes it great. Leave it as honest as you can, and then through that process we go into Sonics, and if we have to brush it, we'll brush it, and if we have to do some little level increments inside, we'll do that. A little bit of No Noise, something minor that doesn't take the room out."

Dorn and Paul were behind the board during pop's "Golden era," as staffers for Atlantic Records in the '60s and '70s. Dorn won Grammys with Roberta Flack ("First Time Ever I Saw Your Face" and "Killing Me Softly With His Song") and produced the likes of Charles Mingus, Rahsaan Roland Kirk, Leon Redbone, Bette Midler, the Neville Brothers and Lou Rawls, after an apprenticeship under Neshui Ertegun. They were magic times at Atlantic. "It screwed me up for the rest of my life, because I thought that's the way it was," he says. "I figured I'd still be making records at Atlantic with Fathead [Newman]. A little naive on my part."

One of the hardest parts of Dorn's current job is hearing a great live performance on tape and realizing there's no way to make the audio presentable. "There's a delicate balance there," Dorn says. "There's a point at which I don't care how great the performance is; sonically it has to at least be sound. What we obviously listen for is 'A' performance and 'A' sound. But if you have 'A+' performance and 'B' sound, after a moment or so the performance transcends the sound. But we won't go too far. For an absolutely brilliant performance we'll bend a little bit for sound, but not much. And, conversely, brilliant sound in and of itself means nothing if the performance is dull. So our batting average is very low. We'll listen to 100 tapes and we'll get two-and-a-half or three albums out of it. But those albums meet the requirements."

Editing is just a part of the process, according to Dorn. "You don't over-edit, like you don't over-equalize or over-Sonic Solution. But after you've been doing this for a while, you get a sense of how to reduce a performance without changing its basic character. Maybe focus a little better. It still has to be natural, it has to have its feel. If someone says that was a great live performance and doesn't know we took four minutes out of a 12 minute piece, we did okay."

"Some of these choruses are way over-extended," adds Paul, "and everybody but the bartender takes a chorus. The good part is that they play enough that within that passage you've got a moment there that's brilliant. Then you've got an option to tighten it up a little bit."

Label M is also in the business of re-releasing out-of-print records, such as Joe Williams' classic vocal album *A Man Ain't Supposed To Cry* (Roulette), as well as Atlantic classics (produced by Dorn, Arif Mardin and Neshui Ertegun) by David Newman, Les McCann and Eddie Harris, and Rufus Harley. But Dorn and Paul are focusing the label more toward live performances. They received a four-star review in the February 2001 *Downbeat* for Ray Bryant's *Somewhere in France*. Gene Paul recalls the discovery of that concert tape: "Joel kept prodding Ray to see if he had any tapes, and Ray finally called Joel up and said, 'You have no idea what I've found. I've got a performance from Europe—I don't know where it was.' The quality of the performance and the sound is so good you'd swear it was done with a truck. The crowd sounds like Avery Fisher Hall, the talking is just marvelous and it

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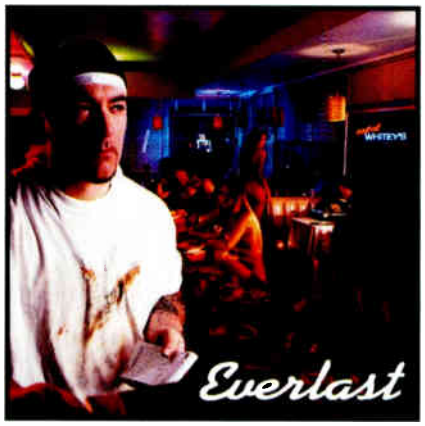
was all done on an audio cassette."

"The beauty of what we have with these tapes is that the musicians never knew they were being recorded, so they were just doing their gig," says Dorn. "The pressure of recording live wasn't there. In the '60s and '70s, I saw Cannonball Adderley and Horace Silver a hundred times. I know what it was like back then, and I'm trying to document that period. With the live records, some of them are stunning, some of them have incredible sound, but all of them have something that's evocative of that era."

"We can go in there and divide people, and make it so quiet that you'd swear it was done six years ago," says Paul. "But when you finish with it, it doesn't have the magic like when you went to a club and saw a performance that was just incredible, even if the sound was mediocre. It all had to do with the atmosphere, with the air conditioning and the smoke...and they performed to whatever the bad parts of the room were. And when you try to correct that, it alters what they're doing. It really boils down to, do you have goose bumps going up your arm and how does it feel? We like to get as good a top end and as good a bottom and clarity as we can get, but never giving up that *feeling*." ■

—FROM PAGE 185, EVERLAST

to record a solo hip hop album with Gamble and Dante Ross—the two are the Stimulated Dummies production team. While they were working on new songs, Everlast was staying at Ross' house playing a borrowed guitar. Ross walked by one day and heard him playing "What It's Like" on the six-string. A new career was about to be launched. "We didn't even know he played guitar," Gamble remembers. "We said, 'Let's just



try. We'll put some drum programming underneath it and cut a live guitar and bass and vocal thing over it.' Once the demo of 'What It's Like' was done, we knew we had something really strong and just kind of on an impulse changed directions."

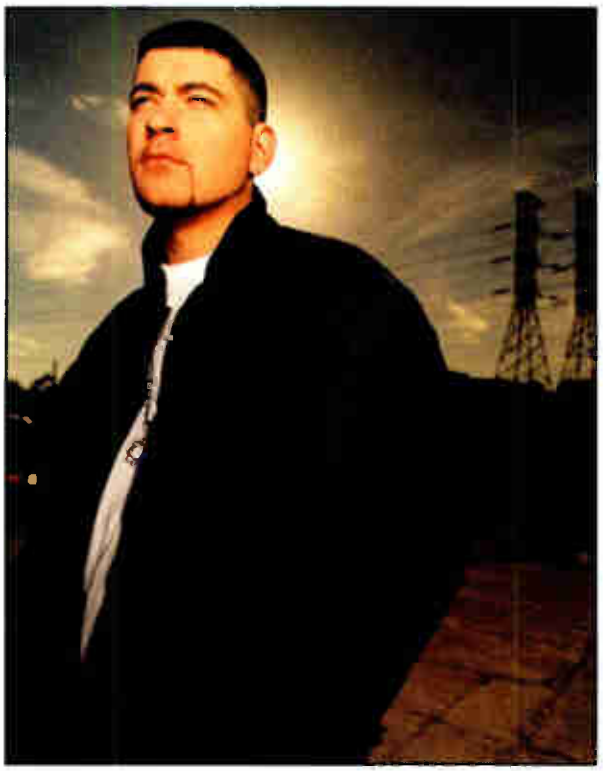
Whitey Ford Sings the Blues introduced all concerned to a brand new Everlast. Recorded at his Los Angeles home with a basic list of technical accoutrements, the album was a bit of a challenge. "Our studio [SD Studios in New York City] had been wired by somebody and had a patchbay," Gamble says. "He didn't even have that, so when we went out to do his record there, he didn't have any mic pre's or any stuff like that. It was very barebones. We were kind of inventing it as we were going along."

In between *Whitey Ford Sings the Blues* and *Eat at Whitey's*, Everlast toured the world, won a Grammy, thanks to his work with Carlos Santana on *Supernatural* ("Put Your Lights On"), and became more comfortable as a songwriter. In fact, when it came time to work on the follow-up, it was almost an old story that Everlast could actually sing and play the guitar. "Well, I hope it's not that old of a story," he says with a laugh. "I'm still exploring all that; it's fun. We just figured that out on the last record. On this record, the goal for me personally was to find out if that was luck or if I could write songs. I'm not

even talking about on a success scale like selling records. I was strictly trying to find out if I could write songs."

For *Eat at Whitey's*, the production team brought the party to New York and welcomed touring keyboard player Keith "Keefus" Ciancia into the studio. "There was an additional great musician, set of ears and creative person who had a very large arsenal of old synths and Clavs and a ton of stuff," Gamble points out. "It seemed natural to go even more in the direction that we had in the first record. I feel the record is more musical."

Indeed. Thanks to songs like "Love for Real," which blends bits of hip hop and soul, and the sultry vocal additions of N'Dea Davenport, this album is brimming with musicality. Producer Dante Ross calls "Love for Real" one of his favorite songs on the album, perhaps because it challenged him. "I thought that it was a good tune, but initially it was more of a singer/songwriter tune as opposed to a soul tune," he explains. "I heard it as a soul tune, and I was like, 'Yo, we can do it like some Superfly, Bill Withers-y, Al Green shit. We can break out some strings and make it real Stax-y and funky.' So we just went for it." In addition to the string arrangement—courtesy of David Campbell—Ross and Everlast came up with a horn arrangement and added it the same day as the string tracking.



Everlast, aka Erik Schrody

Creative sparks flew when Davenport and Everlast sang together in the studio. "She's a natural and so is Erik, so it's not like rocket science. They are both pretty emotive and soulful, so you just go for performance and try to steer them along," Ross says.

"Those are great situations," Gamble adds. "It's the reason that we are involved in this business, to be around great music. When you're in a situation like that, you get a big smile on your face. It's very difficult to plan that. More often than not, that comes out of the blue. You try and make everything happen."

Producers Ross and Gamble do have the ultimate responsibility to make sure the studio vibe is right, especially when guest performers are ap-

pearing. Davenport, Merry Clayton, Cee-Lo and rappers B-Real, Rahzel and Kurupt joined Everlast this time around. For Ross it was easy to set the right mood. "With N'Dea, you want to enhance the sensuality in what she does a little more, so you want to set the mood a little differently," he says. "It's a little more gentle and cerebral. When you're with some rap cats, it's a little more amped and you get the energy up. With B-Real or cats like that, those guys are pros when it comes to rapping. So it's not incredibly difficult. It's good. I'm lucky like that, because when you work with professionals, it makes your job so much easier." Reprising his role as Everlast collaborator on *Eat at Whitey's* was Carlos Santana. This time, the guitar legend contributed his talents to the song "Babylon Feeling," tracking his part at Fantasy Studios in Berkeley, Calif.

The Campbell string dates at Ocean Way in Los Angeles and the Santana tracking sessions were the only ones that took place outside of Ross' basement studios. As Gamble explains it, the studio is built around a Mackie Digital 8-bus console and two 24-track sidecars. The room also features an Otari MTR-90 III, three ADAT XT20s and Logic Audio running on Mark of the Unicorn (one MOTU 2408 and two MOTU 1224s). "Everything locks up and anything can be the master or the slave the way I have it hooked up here," Gamble notes.

Though he's been happy with his setup, Gamble reports that the Stimulated Dummies studio will soon feature Pro Tools: "I'm sick of synching things up and things drifting and working in different environments and having to remember everything. I've done a couple of sessions with people who are using 5.0, and it sounds great to me. I used to have some sonic issues with the converters, but now with the 24-bit, 96kHz 888s, they sound really great."

Gamble's vocal microphone of choice is the Neumann U87 paired with an Avalon VT-737 preamp. SDS is also stocked with compressors like LA-2As, LA-3s, JoeMeek SC2.2, dbx 160A, as well as a pair of Danish broadcast compressors, NTP 179-120s.

Before they get to recording Everlast's parts, Gamble and Ross are responsible for putting down much of the music tracks for the album. They program drums using Emagic's Notator running on an Atari 1040ST. Other sequencers at SDS include Akai S1000, Akai S6000, Kurzweil K2500 and Casio SV-20. Ross explains, "I'm trying to accentuate the best parts of the song, make sure the arrangements are right, make sure the drums sound cohesive with the guitar and the vocal textures, make sure everything matches. With him, it's pretty easy; it's just accentuating what works and making it work a little more."

Where Gamble used a bevy of adjectives to describe Everlast, Ross has but one: "Intense," he says. "We worked pretty fast this time. He had pretty good songs. It's nice to work on records when you don't have to hold people's hands and do everything. On this one, he had more of a vision, he was more self-empowered. I thought his vision was correct, so I just helped to enhance it. It's like he has a painting in his head, and I just try to get it on canvas." ■

—FROM PAGE 189, COOL SPINS

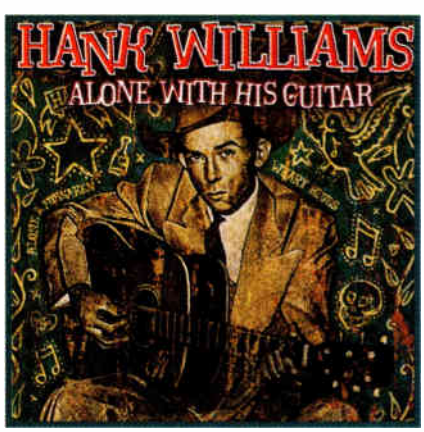
This is music to help you rediscover your soul.

Producer: Joan Osborne. Engineer: Trina Shoemaker. Studio: Long View Farm (North Brookfield, Mass.). Mastering: Jonathan Wyner, Bruce Iglauer, Paul Kahn and Catherine Russell at Mworks (Cambridge, Mass.).

—Barbara Schultz

Hank Williams: *Alone with His Guitar* (Mercury)

The first words in the liner notes to this new collection of demos and radio performances



from the late '40s and early '50s constitute a note of apology for the substandard condition of the recordings, but no apology is needed. The clarity and sadness of the performances shine through so completely that the listener wouldn't have it any other way. In fact, without the slight historical crackle on this CD, the songs might almost be too emotional, too perfect to take. The songs on *Alone* include a big handful of Williams originals, such as "Honky Tonk Blues," "Weary Blues From Waitin'" and "I Can't Escape From You," as well as covers recorded for the *Louisiana Hayride* radio program. The

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collection is enhanced by liner notes that describe the origins of each of the tracks and pay tribute to Williams' genius. "The vocal-guitar demo leaves nowhere to hide," writes co-producer Colin Escott, "and it was in this context that Hank was at his most riveting...He probably thought that his demo of 'Weary Blues' would be heard by no more than half-a-dozen people, yet he sang as if it were a page torn from his diary."

Co-producers: Colin Escott and Kira Florita. Remastering engineer: Suha Gur. Studio: Universal Mastering Studios East.

—*Barbara Schultz*

Beausoleil: ***Looking Back Tomorrow—Beausoleil Live!*** **(Rhino)**

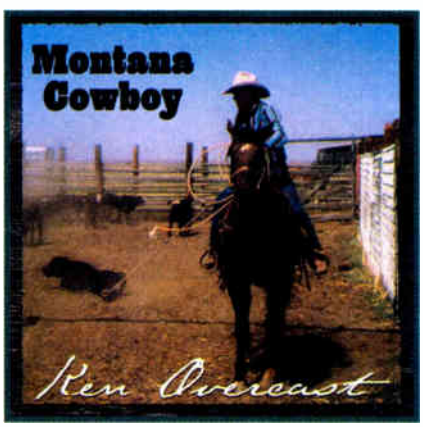
Like a lot of people, I enjoy cajun music but don't actually know a helluva lot about it, beyond the fact that Clifton Chenier was the most famous purveyor of the genre. But I *have* seen Beausoleil perform a few times over the years and was always very impressed. Now they have a live CD out celebrating their quarter-century of touring, and it serves as an excellent introduction to the range of this Louisiana style. Leader Michael Doucet has put together a wonderful set that combines some of his favorite songs by Cajun greats from the '20s to the present, as well as a Fats Domino song and a number of inspired originals. The playing is first-rate all the way; the recording immaculate. From ballads to two-steps to zydeco stomps, there's lots of variety, and the liner notes offer Doucet's thoughts about each song, as well as lyrics in the original French and English. *Laissez les bon temps rouler!*

Producers: Michael Doucet and Beausoleil. Recorded live at Wolf Trap (Vienna, Va.) by Tony Daigle and Greg Hartman in the Big Mo Recording Services truck. Mixed at Dockside Studios (Maurice, La.). Mastering: Anthony Daigle Audio (Lafayette, La.).

—*Blair Jackson*

Ken Overcast: ***Montana Cowboy*** **(Bear Valley Records)**

This is real-deal Western cowboy music from the most unlikely of places: a real cowboy. Overcast is a Montana rancher who also writes songs and poetry and performs. His album is all love and no pretense. He has so much affection for the songs he sings that "Back in the Saddle" sounds almost as fresh



as his own "Cold, Broke and Hungry," and only a few artists sing (and yodel!) as sweetly as Overcast does. He's also got a top-notch Texas swing-style band behind him. Especially enjoyable is the delicate, bright "honky tonk piano" played by Jeff Taylor and Mark Olivenius.

Producer and engineer: Russ Ragsdale. Recording studios: Love Shack Studios and LeCrib (both in Nashville). Mixing studio: LeCrib. Mastering: Mark Lambert/Heavenspun Studio (Nashville).

—*Barbara Schultz* ■

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CIRCLE #142 ON PRODUCT INFO CARD

COAST TO

L.A. GRAPEVINE

by Maureen Droney

At Hollywood's Paramount Recording Studios, I found producer/engineer Darryl Swann cutting tracks with rising superstar Macy Gray. A '70s vibe pervaded the Focusrite console-equipped Studio C—brought on not by decor and equipment but by attitude—with the studio set up for anything and everything, and an eclectic roster of musician friends dropping in at all hours for what frequently turned into marathon sessions.

PHOTO: MAUREEN DRONEY

Darryl Swann (left) and Macy Gray at Paramount Recording (Hollywood)

"Macy worked on her last record here at Paramount," says Swann. "She knows the vibe, and it's comfortable for her. I usually come in early and start organizing things; the wave starts trickling in around 6, and by 10 o'clock, it's full speed."

The Paramount sessions were continuing a routine established when, with the goal of harnessing that well-known phenomenon of after-show energy, Swann and a mobile studio headed out on the road with Gray, accompanying a monthlong string of tour dates. The tractor-trailer studio, complete with Neve VR and two Studer analog 24-tracks, was provided by Remote Recording Services of Lahaska, Pa.

"It was a great experience," Swann recalls, "traveling in a huge caravan. We'd pull up to the venue, and the recording truck would get parked—it would take an hour or two to get the generator powered-up and to get everything set. Meanwhile, the buses would go on to the hotel. Once we were checked in, I'd head over to the truck, where I'd work until showtime. Macy would pop in before the show and check things out, then she'd go do her thing, being the grand diva onstage.

"Around midnight, after the show and the PR stuff that had to be done, she'd walk over to the truck with a couple of the guys in the band. We'd have some food

—CONTINUED ON PAGE 212

NY METRO REPORT

by Paul Verna

Studio owners who think they can cater to all types of clients usually end up narrowing their focus when they realize that, in the marketplace—as in the physical world—natural selection favors those who specialize. New York, however, conforms to neither the natural order of the universe nor the laws of the marketplace—at least not always. A case in point is Soundtrack New York, a 10-room facility that thrives in the music mixing, commercial post and film sound worlds.

The fact that all three of those areas not only co-exist but carry equal weight at the downtown Manhattan complex is no small feat. On a recent visit, I found Andy Wallace mixing an album for Elektra rock band Staind, while down the hall film producer Karen Jeroneski was working on the final mix of her independent feature *Gipsy 83*. In other rooms, spots were being cut for such high-profile clients as NASCAR, Dunkin' Donuts, Bayer, Volkswagen and Honda.

At the same time, chief of production John Kiehl was testing the digital links that connect Soundtrack to its sister studio in Boston and to the rest of the wired world. Commercial voice-over artists can now beam their parts from wherever they might find themselves.

"We like the idea of trying to be a lot to most clients," says Soundtrack COO Christopher Rich, pointing to a grid of the studio's booking schedule. "This is a typical day here. You've got Andy Wallace mixing a major label record. Then you've got another music date for J Records and one for Virgin Records. Then, in Studio F, they're mixing a film, and in two other rooms, we've got film edits happening. Of course, there's a ton

—CONTINUED ON PAGE 220

L to R: producer Andy Wallace, COO Christopher Rich and CEO Rob Cavicchio at Soundtrack New York

COAST

NASHVILLE SKYLINE

by Dan Daley

Producer/engineer/mixer David Leonard has decided to move from Nashville, where he has lived and worked for the past five years, to the New England area. Leonard, whose credit list includes Indigo Girls, John Mellencamp and Hootie & The Blowfish, cited personal reasons for leaving Nashville.

Leonard has nothing but good things to say about Nashville as a place to live and work, adding, "The studios here are as good as it gets." But his desire to move on underscores the peripatetic nature of the music business in general and its effects on the studio business in Nashville. "I came to Nashville in part to get away from the riots and the earthquakes in L.A.," he told me on a break from producing Atlantic pop artists Jump Little Children at East Iris Studios. "Now it's time to look for other things." Leonard says he hopes to continue to come to Nashville to make records in the future, but concedes that he will inevitably do less work there.

Milan Bogdan, East Iris' general manager, who had been working on building up the studio's base beyond Nashville's mainly country clientele, was disappointed. "People tend to work where they live, and when they don't live here, they likely won't work there as often," he says. "I think that the departure of people like David is a tragedy for Nashville in general. It undermines the studio community's attempts to broaden our base beyond country."

Nashville's upper-end recording studios went through multiple gyrations over the past two years. The same effect is making itself felt at other ends of the spectrum. Antarctica Media, which opened in early 1999 as a mid-budget, Pro Tools-based audio mastering facility, and which then grew into recording and mixing and Internet-based services, has shuttered most of its music operations. The company will now focus on Web page construction and graphics, with some audio mastering services available, mainly for Web-based projects.

Company owner John Trevethan attributed the pullback from music to pure economics, and the numbers he cites offer a glimpse into the mechanics of the mid-level facility in the context of Nashville's studio culture. The studio asked $1,000 per day, including an engineer and access to what at the time was Nashville's largest Pro Tools system. The Pro Tools system lease cost $300 per month, and engineer charges generally ran around $250 per day, leaving revenue of $450 per day for the studio, before fixed overhead costs such as rent, utilities and payroll were taken into account.

"That was simply not enough, considering that it's become too difficult to find clients who are willing to pay that much for a studio," Trevethan says, adding that Nashville clients are used to

—CONTINUED ON PAGE 226

SESSIONS & STUDIO NEWS

NORTHWEST

That great mutton-chopped ray of sunshine **Neil Young** braved the traffic, pollution and high rents of San Francisco to spend some time tracking at **Toast!**'s Studio A. In with his band **Crazy Horse**, Young has spent several months jamming and recording, and the group plans to spend several more months doing the same. Also in at Toast!, No **Doubt** have been holding court with studio owner/producer **Philip Steir**. The group has been working on material for the follow-up to the critically acclaimed *Return of Saturn*. Steir also spent some time working with Interscope's **Unwritten Law**. Finally, studio regular **Stephen Jenkins** has kept busy with production duties for both **Run-DMC** and a forthcoming release for his own band **Third Eye Blind**...On the other side of the bay at **Studio 880** (Oakland, CA), engineer **Mark Needham** mixed and edited music for 17 episodes of *The Chris Isaak Show*, a new series on Showtime...**Avast! Recording Co.** (Seattle) hosted **Built To Spill**, who were in finishing tracks for their latest album *for the bros*, which is set for a fall release on Warner Bros. **Phil Ek** was in to produce and engineer the sessions. **Two Loons for Tea** worked on their second CD with producer **Eric Ross** and engineer **Mell Dettmer**. Guest musicians included **Eyvand Kang** on violin, drummer **Matt Chamberlain**, bassist **Trey Gunn** and guitarist **Warr**...**Gravelvoice** (Seattle) completed work on **Barry Lieberman**'s recordings of Vivaldi's 10 sonatas for bass and piano. **Climax Golden Twins** continued work on the soundtrack for *Session 9*, a film by Brad Anderson (*Next Stop*

—CONTINUED ON PAGE 227

Studio owner Rob Devlin (left) and Ricky Martin at Digital Insight Recording (Las Vegas).

—FROM PAGE 210, L.A. GRAPEVINE

and get going, usually until about 6 in the morning. Then it was back to the hotel to sleep a couple of hours, get on the bus, travel to the next city and do it again. We got some very cool stuff written during that time; some really special songs were born in that environment."

Swann, definitely a musician-type producer as well as a songwriter and engineer, started his career as guitar player with the L.A. rock band Haven. "We were a hair band," he recalls with a laugh, "playing at the Troubadour, opening for bands like Warrant and Poison in the late '80s. After that, I kind of fell into being a recording engineer. My first real session, out at Silverlake Studios, was with L.A. and Babyface. They were doing 'Rock Steady' with The Whispers. I still remember them driving up in a rent-a-car with their stuff in the back—you can imagine how cool that was. I guess I was sold, because once I started working in the studio, I didn't pick up an instrument for a long time. But you know, it's like riding a bike—when you need to ride, you can do it. When I pick up my guitar, I'm fluent. I can still riff, and, as a producer, I feel fortunate that I have that skill. I can say to the piano player, 'Give me a Gsuss9' as opposed to 'Hey, give me a pretty chord there!' It helps so much to have that communication."

A longtime Paramount client, who has recently come onboard as partner with co-owners Adam Beilenson and Michael Kerns, Swann is a fan of the 64-in GML automation-fitted Focusrite. Reportedly, one of only 10 that exist in the world, Studio C's Focusrite was commissioned for Conway Studios in 1991 and moved to its present location in January 2000.

"It's got the best attributes of a Neve," notes Swann, "in terms of that transparent, open pipe sound—you know, like a big, old pipe that sound just shoots through. The mic pre's sound good, and the EQs are really clean. It's not one of those consoles that takes 10 years to pass the signal!"

"We're using the room a lot better than before," comments owner Beilenson. "We've had advice from both [speaker tuning specialist Steve] Coco [Brandon] and [acoustic designer] George Augspurger, so we've been making upgrades based on the opinions of the specialists."

Studio C is home to a Yamaha C-7 grand piano, a Hammond B-3 organ and two EMT 140 plate reverbs. Mains are Augspurger TADs, and an Apogee

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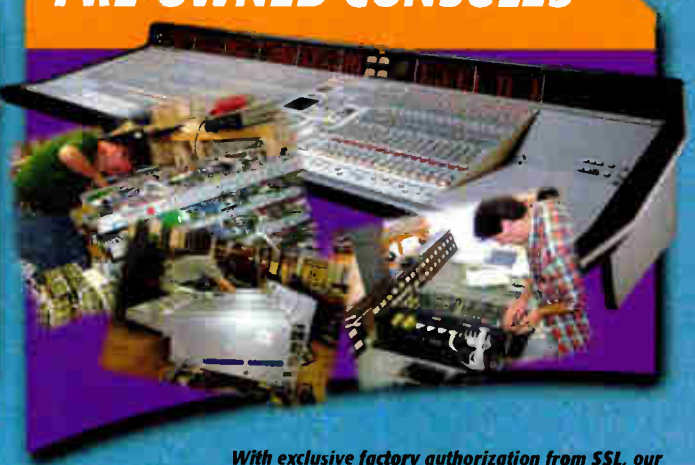

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Rosetta A/D converter comes with the room. Upgrades to the control room were made at the time of the console installation; a large, ergonomically located wall of outboard now fills the back of the room, containing, among other items, Summit EQ and compression, lots of UREI, Lexicon, Neve, Drawmer and dbx gear, JoeMeek and DeMaria Labs compressors and API 550A EQs.

More upgrades were made before the current project started, most notably the addition of a rather luxuriously appointed private, upstairs bathroom and a comfy nap nook.

The Macy Gray project is being recorded both to 24-track analog and edited on Pro Tools, with the help of engineer Mike Melnick. "I'm a die-hard analog guy," Swann comments. "Of course, there are such advantages to recording in the hard drive; editing and arranging in it is great. But I want to make a statement here: People need to remember that Pro Tools is just a tool, like a wrench or something. Some people think it's the end-all, and if you've got it, your stuff is automatically going to sound good...people actually talk like that. But I've heard guys tear up some great human grooves when they start lining those kick drums up and lining those snares up. It loses all that grease, all that human touch. So there are definitely pros and cons."

While Pro Tools and an Akai MPC3000 were getting hard usage in the control room, set up out in the studio were keyboard rigs, a selection of guitar amps and, newly purchased by Swann, a set of Kikdrumz. "Victor Indrizzo, an incredible drummer who plays with Beck, and who's also part of our musical family, turned me on to these kits," he explains. "He had a prototype. They're built by a guy named Miro, who makes them in his garage. Miro brought a kit down here for me to try, and it had one of the best-sounding kick drums I've heard in my life. I bought one on the spot. It's got a really resonant, big, full tone. Miro says he gets it by using an ultra-thin shell and by having none of the usual hardware holes in the drums, so that it has extra resonance. It's a great design."

The Kikdrumz stay set up in the large recording space and are often augmented by a stash of vintage keyboards provided by Zac Rae—including such pieces as a Hohner clavinet, a Wurlitzer piano, an Arp string ensemble, an Optigon and a Chamberlin.

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ments," says Swann. "We stay miked up, just in case. [Laughs.] There's always a musician around, eating pizza or whatever, so if we're on to something, we can try it right away. I'll be playing a beat on the MPC, somebody can just jump on it and we can hear it live and integrate it.

"What we're doing here is combining the best of the old with the best of the new. Macy's got that spirit; it brings out the craziest, most eclectic kind of stuff, but it's rooted in old soul. She brings both worlds together, and she does it really well."

Sometimes it seems that hidden behind every other door in the San Fernando Valley is a music recording studio. I was reminded of this when I stopped in for a visit with Cody ChestnuTT at the "bedroom operation," out of which he produced his eccentric and very funky CD, titled *The Headphone Masterpiece*.

Masterpiece came about when the multi-instrumentalist ChestnuTT, who was dropped by his label and deserted by his band, decided to make his own record. He retreated to his Tascam Portastudio-equipped home recording space, dubbed The Sonic Promiseland, and began woodshedding. Five months later, he emerged with a double-CD, 36 tracks of music that range from rap to pop and soul, with a hefty dose of British invasion added for good measure.

"I had a lot of things going on, and I had to get them out," ChestnuTT says. "My band, The Crosswalk, was my second effort as a recording artist, and it broke up after we were dropped by Hollywood Records. I was on my own. The tracks were written, my ideas were down and I didn't know how I was going to produce them. I kept making music so I wouldn't be depressed, and I just decided that I was going to do it all myself. One vision, one sound, one room, undisturbed and undistracted. No one to argue with. I got to put down everything I heard in my head, put every color to the canvas."

ChestnuTT's influences, as depicted on *Masterpiece*, run across the board. The stacks of CDs and vinyl that fill his house attest to this, with artists ranging from The Cure and Ray Charles to Judy Garland, David Bowie and Johnny Cash. With the exception of a few saxophone parts, ChestnuTT played all of the instruments on his project. Those included his collection of classic guitars, a Wurlitzer piano and a Gulbransen organ. He also sang all of the stylistically

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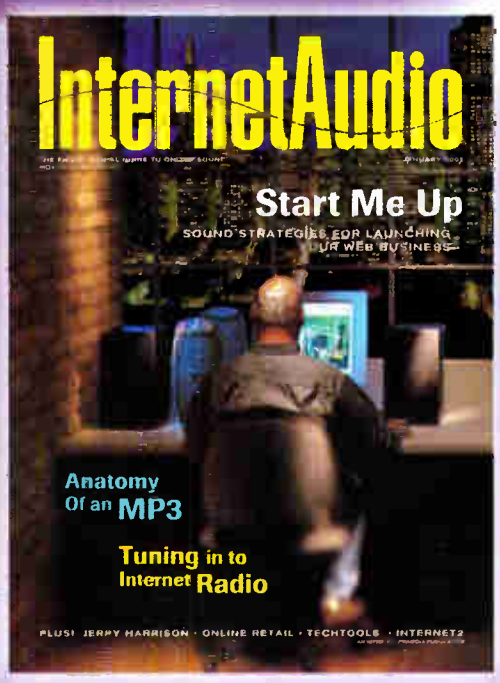

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diverse vocal parts and did all of his own engineering. One mic (an Audio-Technica AT4033A), no samples, no Pro Tools—as a matter of fact, one track was recorded direct into the sampling functions of two Akai MPC2000s locked together. The rest ended up on a Tascam Portastudio 424MK III, using its internal mixer and an additional Tapco 6201 6x2 board. The entire project was then mixed down to a Sony DATman.

As the title implies, *The Headphone Masterpiece* was produced to give the listener a parallel experience with the one ChestnuTT had, while recording and monitoring on his headphones of choice, Sony MDR-7506s. "I wanted the listener's experience to be as pure as my thought process," he explains. "I designed it for our generation's stereo—the Sony headphone—which sounds like a stereo wrapped around your head."

Masterpiece was mastered by Brian "Big Bass" Gardner at Bernie Grundman Mastering. Gardner, whose credits, of course, include Dr. Dre, Eminem, Tony! Toni! Toné! and Beck, among others, is no slouch at determining what's funky, and he had high praise for ChestnuTT's effort. "It was a trip working with him; he's a real talent," Gardner says. "All his songs, even though they were rough, sounded complete and finished. He really blew my mind when he brought in all his equipment. Nothing matched, the cables were all weird, some with different polarity than the others—I was running around finding replacement cables. But it was funny how it worked: I just plugged it all up, pushed Play and there it all was. The balance was perfect, we hit Record on our digital machine and it was done. That's never happened to me before. I consider it a miracle, but it kind of depicted what went on with all his songs while we were EQ'ing them. They all had a little magic to them. Cody's a definite talent, and I wish him total luck on this."

PHOTO READY, SET-GO

Brian "Big Bass" Gardner (left) and Cody ChestnuTT at Bernie Grundman Mastering

"It's the classic 'Doing it all yourself out of the house' kind of thing," says ChestnuTT's manager Phillip DeRobertis, of Ready, Set-Go, who hooked up with the artist when DeRobertis was managing Westlake Studios and ChestnuTT was recording there. "We've been through the business wringer be-

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fore, and we don't mind doing it again. But this time, we're doing it more our way."

DeRobertis is actively seeking a distribution deal for *Masterpiece*; already receiving airplay on Los Angeles station 100.3/The Beat is the cut "Serve this Royalty." Meanwhile, the prolific ChestnuTT has already written a batch of songs for his next CD.

"As Judy Garland said, 'I was born to entertain,'" he concludes. "We share that in common. Someone once told me that you survive in life how you see yourself; so that's what I try to do. If you see yourself as a high spirit in life, that's what you'll be." ■

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—FROM PAGE 210, NY METRO REPORT

of commercial work going on here and in Boston, as well. To some people, this may seem wacky, but we all think it's normal."

Rich admits that the "natural" thing would be for the studio to concentrate on one or two types of work. "That's the way that you would expect it to be," he observes. "It's unusual that an owner of a company would want to stretch out into all these different things. You can do it recreationally, but when you're trying to get into the top ranks, it becomes tough, because the client won't forgive you if you're distracted doing other forms of work. When a film mix comes in, they don't want to know that you've got anything going on but films. Somewhere in the lower right hand corner of their brain they're kind of interested in the fact that Fred Durst just walked in or Busta Rhymes is sitting in the hallway, but mainly they just want to get their work done."

The three-pronged approach—music, film, advertising—raises management challenges for Soundtrack, which is owned by founder/president Rob Cavicchio. For one, it requires three separate departments, each with its own boss: Film is overseen by Rich, advertising by Kiehl, and music by records manager Ken Thornhill. Other key staff includes operations manager Mike Korash, supervising sound editor Dave Ellinwood, re-recording mixer Tony Volante, and production engineers Bill Bookheim and Scott Cannizzaro.

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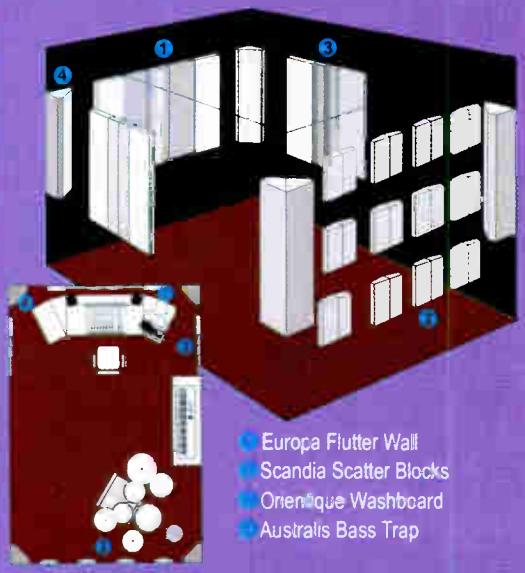

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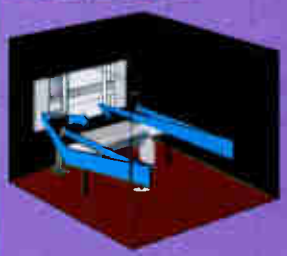

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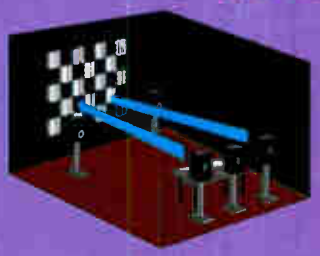

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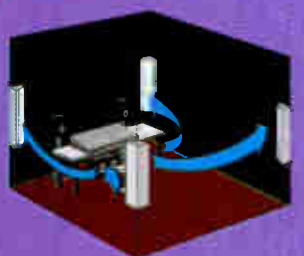

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rectly to Cavicchio, who maintains a hands-on role in operations of the company—their staffs are separate. "The assistants who do records are a completely different group from the guys who assist on film and the post-production sessions. It's like having three separate groups," says Rich. One of the fringe benefits of having such a broad client base is buffering the studio against business downturns, much as a diverse portfolio might protect an investor from losses.

"It's natural that every business is going to have its cycles, but oddly enough, they're hardly ever seeing peaks and valleys at the same time," continues Rich. "For instance, when the ad business is slow, it's very likely that the record business is busy and the film business is busy. Conversely, when the record business was slow—as it was in New York in September, October and part of November—the ad business was strong, because the [Screen Actors Guild] strike was ending, and the film business was big because of the Sundance Festival in December."

Soundtrack's rooms break down as follows: Studios A, B, E, G, I and J all offer music recording, overdubbing and mixing services on a variety of consoles, including a Neve VR, two Solid State Logic 9000 Js, various older SSL boards and an API Legacy with Uptown automation; Studios D and H are dedicated radio/TV post-production suites that feature, respectively, an SSL ScreenSound and a Euphonix console with a Synclavier system; and Studio F is Soundtrack's theatrical mixing stage, boasting a 9-foot screen, an SSL Avant, nine Akai DD8 digital dubbers and an assortment of other state-of-the-art gear. Soundtrack also offers four Avid suites for audio post.

Even though Soundtrack prides itself on maintaining a healthy separation between its various departments, not all of its rooms can be pigeonholed into a single type of work. For example, Studio I—an API room with an Avid suite—is equally suited to music, radio/TV post, ADR and Foley sessions.

If diversity became Soundtrack's creed, then the studio was not always as multifaceted as it is today. Soundtrack New York began life in the early 1980s as an outpost for Soundtrack Boston, a commercial production studio that remains as one of Beantown's premier venues for advertising. When the remixing craze hit the music industry in the early to mid-'80s, Soundtrack was natu-

—CONTINUED ON PAGE 226

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017	061	105	149	193	237	281	325
018	062	106	150	194	238	282	326
019	063	107	151	195	239	283	327
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036	080	124	168	212	256	300	344
037	081	125	169	213	257	301	345
038	082	126	170	214	258	302	346
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040	084	128	172	216	260	304	348
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—FROM PAGE 222, NY METRO REPORT

rally suited to capture some of that business. Rich, who had worked at music studios around town, helped the facility build a clientele in the record industry.

Soundtrack's entry into the film business came in 1993, also at the hands of Rich (who, in between his two tenures at Soundtrack, helped Zomba build its Battery Studios in New York and Chicago).

"In 1993, we looked at the film business for the first time," recalls Rich. "We had a studio that had a large control room and recording room, and you could make an argument for putting a big screen up and a projector in there and turning it into a theatrical mixing stage." That's exactly what Soundtrack did in Studio F, and today that room is the centerpiece of the facility's film work. As Rich notes, Soundtrack went from having "zero film presence" to being one of the top venues in New York for independent film clients.

After all its success with Studio F, Soundtrack is planning to relocate its film division to a new, two-floor site around the corner from its existing location. The move will further delineate film from the rest of Soundtrack's offerings and anchor the studio's position as an all-inclusive theatrical shop, with state-of-the-art Foley, ADR and mixing services. Rich expects the move to occur sometime in late 2001 or early 2002. The new film division will feature two large mixing stages: one for Volante and one for other Soundtrack engineers and outside clients. Downstairs, a suite of seven or eight editorial production studios will support the upstairs control rooms, according to Rich. The current Studio F, meanwhile, will become a high-end production studio for advertising and short-form video and film clients, thereby strengthening Soundtrack's original mainstay in TV and radio production.

Of course, all of that activity will only benefit the music side. If the studio can now boast of having hosted such clients as Limp Bizkit, Soul Asylum, Janet Jackson and Jeff Buckley, then who's to say what other music stars will wander through its doors in the future. ■

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—FROM PAGE 211, NASHVILLE SKYLINE

ordering services a la carte. "They just didn't seem to get it that the engineer was included in the day rate," he says. "That's not the way it's done here. Just because you change the technology doesn't mean you change the culture you use it in." Furthermore, Trevethan cites the diminished client pool for this level of studio, particularly the decline of the publishing demo market. "Aside from more writers recording their own demos, you have fewer recording artists on fewer labels, and that means they don't need as many songs, so you don't need as many demos," he says. "Studios just fall in the middle of that food chain." Trevethan also bet on Pro Tools taking off in Nashville, which it did last year; however, he found that many potential clients simply bought their own versions of the system for use at home and in private studios.

After seeing revenues decline 20% over the last year, Trevethan decided to pull the plug on music recording. The studio occupied the former Studio A room in what was once Sixteenth Avenue Sound, ironically one of the first casualties, in 1998, of the consolidation trend that has since engulfed Nashville.

TNN, The Nashville Network, left in

name last September when CBS/Westinghouse, which bought Gaylord Entertainment's broadcasting operations in 1997, changed the cable network's name to The National Network. The name change by the new owners—since consolidated under Viacom—underscores country music's sinking fortunes. (Preliminary SoundScan data for 2000 indicated the format has dropped to about an 8.5% market share, down more than 50% from the highwater mark of 18-plus percent in 1994.) More materially, it signaled the shift of the broadcast operations for both TNN and music video channel CMT to New York, where Viacom is headquartered. In late January, Viacom initiated the largest round of job cuts yet at the networks, eliminating or moving 125 jobs—35% of the work force.

The good news is that TNN's audio production and post-production infrastructure, which Viacom also acquired in the purchase, will remain intact, with no job cuts for the time being. Julie Burnett, TNN's manager of operations, told me that the entire 20-plus staff of audio personnel for its recording, mixing and post studios, as well as its one remote truck, will remain in place. Broadcasts of the Grand Ole Opry, a weekend staple on TNN and nationally syndicated on radio, will also remain based from here.

Speaking of disappearing acts, Virgin Nashville, the label created in mid-1998 as a Capitol Records subsidiary and headed by ousted Capitol president and producer Scott Hendricks, closed its doors in January, weeks after Asylum Records' Nashville office did the same. Both labels had been teetering for some time, swept under by country music's market share slide and the increased difficulty in getting country radio stations to embrace new artists. Hendricks had been one of the current generation of Nashville's producer-stars in the mid-1990s, with multi-Platinum productions for Brooks and Dunn and other artists. Hendricks had attempted to pursue the Nashville music industry's version of a hat trick by running a label, producing records and owning a recording studio, Arrowhead. Hendricks built a studio in his home nearly two years ago, after he took the helm at Virgin Nashville. Capitol Records itself is a division of EMI, which has been on the selling block for over two years. EMI and RCA Records parent company, BMG Entertainment, have been in talks about an acquisition or merger since late last year. The elimination of unprofitable assets, a rubric that Virgin Nashville qualified for, often precedes such deals. ■

Send your Nashville news to dan writer@aol.com.

—FROM PAGE 211, SESSIONS AND STUDIO NEWS

Wonderland). Both sessions were engineered by Scott Colburn and Julian Martlew...At Private Radio (Seattle), producer Jack Endino stopped in to work with Gas Huffer on a full-length project. Producer/engineer Pat Gray finished a full-length album with punk favorites Old Man Smithers, as well as continued work on a project with artist Carl Millers.

SOUTHWEST

Ricky Martin and Christina Aguilera recently cut their new single "Nobody Wants To Be Lonely" at Digital Insight Recording (Las Vegas). They brought

L to R: Producer/studio owner Dan O'Brien, engineer Roger Nichols and artist Gumbi Ortiz at Hurricane Pass Recording.

along Walter Afanasieff to produce and Dave Reitzas to engineer.

NORTHEAST

A very busy winter season at Sound On Sound Recording (NYC): Aaliyah, producer Timbaland, engineer Jimmy Douglass and assistant Alison Lauth were in tracking for a forthcoming release on Virgin. Destiny's Child (Sony) stepped in to track some new material with producer Rob Fusari, engineer Earl Cohen and assistant Bojan Dugich. UK favorite Heather Nova, producer Eve Nelson, engineer Cynthia Davis and assistant Rene Antelmann were in laying down some fresh tracks. Edwin McCain also stopped in at Sound On Sound to mix a forthcoming release with producer/engineer Greg Archilla and assistant Richard Furch...Hardcore band Thursday stopped in at Big Blue Meenie Studios (Jersey City, NJ) to work on a forthcoming album, *Full Collapse*, with producer Sal Villanueva...Out at Sear Sound (NYC), Bjork was in tracking and doing some overdubs for her next Elektra Records release. Bjork is producing the project herself with engineer Jake Davies...Patti LaBelle and her band were in at Indre Studios (Philadelphia) rehearsing for a three-night stint at Caesar's Palace in Atlantic City. Pop/rock band Second Story began work on their second full-length CD with producer Bogdan Hernik and assistant Matthew Milner... Shelter Island Sound (NYC) has managed to stay booked this winter: Bob Power was in producing Citizen Cope for Dreamworks. Engineer Joe Ferla mixed the new Chris Cheek album for Fresh Sound records. Gary Katz produced Sarah Buras, another Dreamworks artist, with Dave Dill engineering. Steve Addabbo lent his production prowess to the new Love Seed Mama Jump CD with Matt Kane engineering; Steef Van der Gavel was tapped to assist.

SOUTHEAST

Artist Gumbi Ortiz spent some time at Hurricane Pass Recording Studio (Dunedin, FL) working on his new CD *Return to Pangea*. Ortis tapped studio owner Dan O'Brien to produce the sessions with Roger Nichols in to assist...Over the Rhine camped out at East Iris (Nashville) to mix their latest album with producer Lynford and engineer David Thoener. Also in at East Iris, artist Ashley Waters mixed a new MCS offering with producers Andrew Lane and Anthony Little; Ben Fowler was in to engineer...Grammy nominee Keith Urban spent some time at Seventeen Grand (Nashville) working on a new project with engineer King Williams and assistant Chuck Linder...Recently at The Sound Lab (Atlanta), T-Mo Goodie (Goodie Mob) mixed 10 songs for his upcoming solo release. T-Mo produced and Jan Nerud engineered. Also in, JT Money stopped by to record two new songs for his upcoming effort; Pretty Ken produced and Nerud engineered. Quaveo Gold recorded new songs for his freshman record on Universal with Lil' Jon producing; Andrew Metcalfe and Nerud were in to engineer.

SOUTHERN CALIFORNIA

The Dave Matthews Band finished up mixing their highly anticipated album at Image Recording (Hollywood) with engineer Chris Lord-Alge and producer Glen Ballard. Lord-Alge also mixed the latest offering from veteran rocker Stevie Nicks. The album was produced by Sheryl Crow, John Shanks, Mike Campbell, Rick Nowels, Pierre Marchand and Nicks herself and is slated for release on Reprise/Warner. The assistant engineer was Matt Silva...REO Speedwagon camped out at Blue Moon Studios (Agoura Hills) to work on a live 5.1 project. The original material was recorded by engineer Joe Vannelli; Vannelli and engineer Joe Primeau handled the multichannel mixing...Multi-instrumentalist David Lindley and drummer Wally Ingram finished up a new album for the Chimptek imprint at Bernie Grundman Mastering (Hollywood). Nu-Mark of Jurassic 5 was also in mastering that group's latest single "The Influence"; the session was engineered by Brian "Big Bass" Gardner...Arizona natives Jimmy Eat World recorded their latest album at Extasy Recording Studio South with engineer/producer Mark Trombino (Blink 182, Meat Puppets) and assistant Justin Smith.

STUDIO NEWS

Chicago Recording Co. (Chicago) recently finished a new production studio for engineer Mark Ruff. The new room features the new Euphonix System 5, 5.1 mixing and monitoring and Pro Tools|24...Effective last February, Music Annex (San Francisco) changed its name to Annex Digital. The change is in name only; the company's ownership remains the same...Studio 880 (Oakland, CA) has added a second recording/mixing room with the recent completion of Studio B. The new studio boasts a vintage 72-input Neve 5305 with GML automation, a Studer A827, Ampex ATR 102 and a 24-input Pro Tools MIXPlus system. ■

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—FROM PAGE 106, MUSIC SUPERVISORS

problems, the shooting was going overtime and the Angels hated each other. That was all bullshit, but it hurt us with the music. I'd call the manager of Blink 182, and the day I called him, the morning DJs are talking about the rumors about the *Charlie's Angels* shoot and what a piece of shit the movie is going to be. That kind of static out in the media hurt us when we approached people."

Then again, there are artists who are savvy enough to know when to get involved. Kimball points to his Miramax days, for instance. "I know when *Pulp Fiction* came out, people were dying to be in a Quentin Tarantino film," he says. "He didn't have to pay money, practically. People just wanted to be in the film and associated with him."

A film's eventual success or failure isn't that important from the record company point of view. "We've made a lot of money from films that have failed in the box office. So that can be good for us and it doesn't hurt the band, because nobody saw the film," Bishop says with a laugh.

LABEL RELUCTANCE

These days, music supervisors are fighting a bigger battle. Thanks to the bevy of record consolidation deals, label competition is fierce. At times, for instance, BMG artists won't be released to appear on a Sony Records soundtrack, and vice versa. That leads to the occasional soundtrack that does not quite hit a peak. "I think that's one of the factors that's hurt the soundtrack business in the last two years," Houlihan says, "because you don't end up with the best creative matches. You could have the perfect band on Sony Records, but if it's a Warner Bros. soundtrack and film, it's really hard to get those bands. Even if the artist wants to do it, they will be denied by their label sometimes. It used to be if you got to the artist, 10 lawyers and record label people would roll over. Those days are gone; these four record label groups are keeping everything close to the vest."

Bishop confirms that things have gotten tighter at the label level. "It is true that sometimes labels are protective of their artists," he says. "They don't want to be giving the first single that they are going to be working on to a soundtrack album, so there's a degree of a political dynamic there that goes between the label and the marketing department. It's sensitive, but we continue to do things, and things seem to be able to be worked out."

The key, Bishop adds, is to try to find some middle ground. Therefore, although a label obviously wouldn't give away the first single, they will look for another option. "Maybe it's the third single," he says. "If you can't do what they really want to do, you try to go to some common ground and work something out, maybe with another track. We do deals like that all the time." After all, he continues, they want the business to grow. "In the end, we want the business to succeed and we want more films like *Little Nicky*, where we have 12 masters in it, and more films like *Almost Famous*, where we have something like 17 songs. They are good for us, they are good for the music supervisor."

Music supervisors have to look for compromise while working with score composers, as well as label representatives. With a laugh, Houlihan says, "I know that there are some film composers out there who literally hate music supervisors, because they view music supervisors as dismantling any cohesive themes or any vibe of the score throughout." The key, Houlihan says, is to work together and communicate constantly. "They'll make sure to come in on the same key and come out on the same key," he explains. "Sometimes a song will be really good, but we need to invisibly help it, so they might do some scoring on top that organically blends in with the song. That way you get all the great energy of a well-known song working in an action sequence, and the action doesn't suffer."

Finding a hidden gem or breaking a new band are just two of the quiet joys of working as a music supervisor. On the *Charlie's Angels* soundtrack, Houlihan had the opportunity to add the song "Tangerine Speedo" by Caviar at the last minute. "We should have shipped our soundtrack album the day before we heard the song 'Tangerine Speedo,'" he says. Nevertheless, because one of the soundtrack's other bands wanted to remaster their song at the 12th hour, the team had an extra day when they discovered the Caviar tune. "We just flipped out for it and it just pushed all of our buttons," Houlihan recalls. "The song got on the album, in the film twice and used in the trailer spots. So, we're psyched, and I hope that the band and the song breaks wide open. We love doing that." ■

David John Farinella is a freelance writer living in the San Francisco Bay Area.

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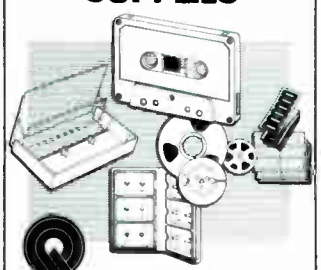

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—FROM PAGE 18, ASK GRUMP

My favorite grunge-metal band is the P*gf*c*ers. They rule. Their lead singer, Nolo Vox, does this really cool thing on their tune "P*ss on Y*u B*t*h," in which it sounds like he's throwing up into a trash can. I want to get a similar effect on my band's next record. How did they pull off that amazing sound?

I checked with their producer, the London Conservatory-trained Trevor Trevor III. He told me, "We did most of the album at a studio in Hollywood, but for that one track, we rented a manor house in the Cotswolds for a week. We sent all the servants away except for the French cook and brought in three Sony digital 48-tracks, a 92-input Euphonix board, a trunk full of Neumann, AKG, Sennheiser and B&K mics and 16 channels of Millennia preamps, and we wired the banquet hall with big Tannoys in a 7.1 configuration.

"We tried recording Nolo in every one of the 52 rooms, putting him in different corners, on top of and underneath various pieces of the Louis XIV furniture, and setting the mics up in X-Y-, M-S-, ORTF- and B-format Ambisonic. We filled about 20 reels of tape, but I wasn't happy with anything we had.

"Finally, at around midnight, the last night we were there, after a dinner of frog's legs, octopus, blood pudding and trifle, Nolo suddenly said he wasn't feeling too well and ran out of the dining room. He didn't make it to the lavatory, but he did get as far as a large metal drum that was sitting in the hallway that had been filled with—um, uhh—sugar. As luck would have it, one of my assistants had accidentally dropped a Shure wireless mic into the drum earlier that day, and it was still on. So when Nolo blew his cookies into it, we had a clear signal right to tape. It was a wonderful moment, one that would be hard to reproduce, I'm sure."

I need to find a good audio engineering school. I'm not sure what I want to do, but I love music and want to make it my career. It's got to offer guaranteed job placement in a professional situation, a scholarship, free room and board and not take longer than six weeks. And it shouldn't require a high school diploma. Also, it has to be near my home in Bemidji, Minn., so I can report to my parole officer every Friday. What's the best school that fits these criteria within a few hours' drive from me?

A quick look at the *Mix* Audio Education Directory shows that the Global Engineering and Technical Repository for Education and Audio Learning (GETREAL) has a brand-new campus, their 93rd, not far from you in Hibbing, above the hardware store. (The door's off the alley, knock twice.) They have six SSL rooms, four Mackie rooms, two Avid suites and a soundstage large enough for a 70-piece orchestra. Their programs range from one week to three months—the longer programs also include everything there is to know about video and Web design.

They will help you find a job, although you may have to accept an unbreakable lifetime contract as a washroom attendant at a theme park, with the possibility of promotion to assistant post-parade sweeper after five to eight years. Tuition is very reasonable, and room, board and snowshoes are included. My sources tell me, however, that they are having a little difficulty attracting faculty.

I know that to make digital tracks sound "warmer" I need a good tube mic preamp. What's your favorite?

The best preamp I've come across is a totally discrete module taken from a 40-year-old RCA broadcast console, hand-remanufactured with oxygen-free silver wire and NASA-spec resistors by mem-

bers of an animist motorcycle cult living on a Connecticut Indian reservation. It uses a matched pair of Nuvistor pentodes, whose numbers are still considered classified, and are today only made by Russian emigré monks in a small factory in Hokkaido on the second Thursday of alternate months. The waiting list for these units is about two years, while the tube makers are more like five years behind.

Everything else out there sucks.

I have a Mac G4 running Pro Tools 5.1 and Cubase VST, using dual 888 interfaces, a MOTU Digital Timepiece, Aardvark format converters, an Opcode Studio 5, and a Horita blackburst and timecode generator. My MIDI rig is a Kurzweil K2600R, a Roland S-760 and a Korg Triton, all with digital outputs. My microphones run through JoeMeek preamps and Apogee 24-bit convertors, and then everything goes into a Yamaha 02R, configured for 5.1, and out to an Event digital surround speaker system and a Tascam DA-98HR. I also have a Panasonic DVCAM deck feeding a 500MHz Pentium 4 through FireWire, running Edit DV and Vegas Pro under Windows 2000 with a Layla card and a SoundBlaster Live.

My problem is I can't get anything to sync to anything else. Whenever I turn on more than two devices, one of them starts flashing "Word Clock Error," and this horrible high-level burst of noise fills the room and sends me screaming out the door. It's very tough to figure out what's going on under these conditions. I've already blown three midrange coils, and my doctor tells me I'll have to stop soon before I suffer from major hearing loss, a nervous breakdown or both. Meanwhile, I'm working on a prime-time network production that goes on the air in 10 days, so I'm desperate for your help.

Why does this have to be so darn complicated? I have no idea what should be the master, and what should slave to what, and how to get the clocks and sampling rates to agree with each other. None of the tech support people at the companies have a clue. Why can't manufacturers come up with some standard way of dealing with external sync? Or is it just me?

You're right—it's just you.

What's your favorite plug-in?

That would be "Speaker Maker" from a small company in Uzbekistan called "Grzsnykolpfbimt PLG," which, roughly translated, means, "Even lower than wholesale." It can make any speaker you've got sound like any speaker you could ever want: You can turn a pair of Genelecs into NS-10s, or vice versa. I like to use it with the little Radio Shack mini-monitors sitting on my console, making them sound like Westlake 5s with a sub-subwoofer. The effect is uncanny. The 119 dB of boost required at 45 Hz makes the things a little warm, but a couple of inches of asbestos underneath them keeps them from melting through the meter bridge.

What's the best microphone for vocals?

I like the Astrovox 466, which we used to like to call "The Hackensack Hammer." That's because it was made right here in Hackensack, N.J., and you could bang nails into the floor with it and then sing into it, and it would sound just the same. It's also useful for pitch-correction: If your vocalist starts to go flat, then you can hit him upside the head with it and he'll straighten right out. It's got a huge proximity effect that's perfect for those "voice of death" goth-metal tracks.

Best of all, the pop screen is electrically live, which discourages spitting and is useful for disciplining an egomaniacal guitar player.

You can be sure that nobody will ever steal it, because it has a weirdo 7-pin connector that doesn't match anything else in the known universe. Best of all, the pop screen is electrically live, which discourages spitting and is useful for disciplining an egomaniacal guitar player: If you set up the polarity on his amp right, when he leans forward to sing, it'll fry his moustache right off.

Of course, it sounds awful, but who cares about that?

What's the best way to equip my studio for surround?

It depends on what you're surrounded by. If you're planning on recording lots of rap and you are surrounded by hostile neighbors, then I would recommend a high-voltage electric fence. Make sure there are plenty of warning signs to keep lawsuits at a minimum. If your studio is out in the woods and you're worried about the birds and porcupines making too much noise, then a small-bore automatic pistol can be very useful. And if you're recording Christina Aguilera or Britney Spears, and figure on being surrounded by screaming teenage girls, then a few cattle prods and cans of Mace are an excellent investment.

My PC-based DAW says that it handles 24-bit audio, but when I burn a CD, it's only 16-bits. What happens to the other eight bits?

The other eight bits are still on the CD, but they're in a special locked file that can only be opened by members of an exclusive record industry organization, the Society for Music Decoding and Interpolation, or "SMDI." Should your CD ever be acquired by a record label that is a member of this powerful but very secretive group, they will be able to recover the extra bits when they reissue it, after your copyright expires, as a 24-bit DVD-A. This ensures that their catalog will never go out of date, but, of course, it does nothing for you.

i wanna be a audio engineer and do dejay stuf too. do you now any good books or softwears that can hep me lern!?

Start with *Travis Bratwurst Teaches Typing*. Then check out *Spell Checking for Blithering Idiots*, and when you feel you've mastered those, you'll be ready for *Where the Heck is the Shift Key, Anyway?*

After 20 years in computer systems engineering, I want to get back to my first love, which is recording and playing music. But I feel like I've missed out on so much that I need to catch up on: digital recording, DSP, synchronization, MIDI, DAWs, automated mixing, Web streaming and so on. Also, I'm very troubled by Napster and MP3 and what they mean for the music industry. If everything is available for free, then who's going to pay the musicians? I don't want to spend a lot of time learning all this new stuff and trying to make a career of it, and then find out I'll never get paid.

What would be your advice for the best place to go to study everything I need to know to get up to speed on all the important new issues in the recording field and also to get the skills to be able to continue to make a decent living in it?

Two words: Law School. ■

Paul D. Lehrman apologizes for taking the month off.

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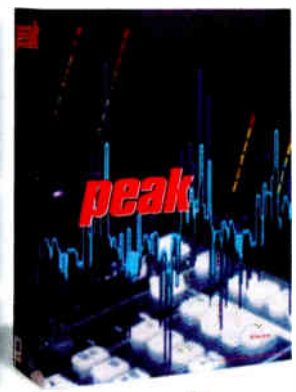

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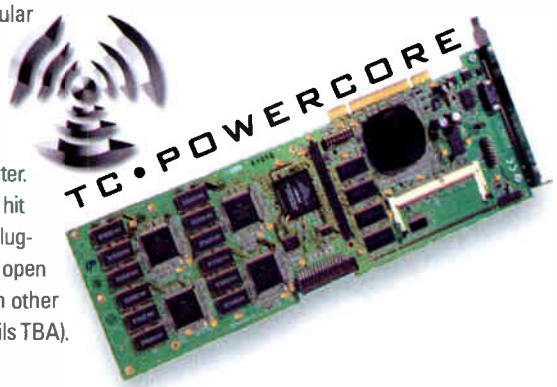

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TWEAKING THE DELAY FINDER

Clicking on the Compute Delay button in the Transfer Function Controls window brings up the Delay Finder window, showing a graphic representation of the SUT's (System Under Test) impulse response. When analyzing the impulse response, 'Foo loads 1.5 seconds of audio data into RAM and automatically delays the source channel's signal to align it with the response channel's signal. The vertical white bar in the Delay Finder window's graphic display shows the source channel's delay/offset and usually parks on top of the most pronounced impact spike. To move the bar away from the impulse spike for a better view, simply click the Clear key on your QWERTY keyboard. This resets the timecode readout to zero and moves the bar to the onset of the source signal in the display. Alternatively, you can simply click on the bar and drag it to move it.

You can also tweak offsets in the timecode readout box. This is useful when you want to modulate a "phase vs. frequency" trace away from a wraparound point for a clearer view of the SUT's performance in a select frequency band. (Be aware of the additional, progressive phase shift this will introduce in the display.) Use your QWERTY keyboard's left and right arrow keys to move the timecode cursor into the field you want (e.g., selecting seconds or milliseconds) and use the up/down arrow keys to increment/decrement the value.

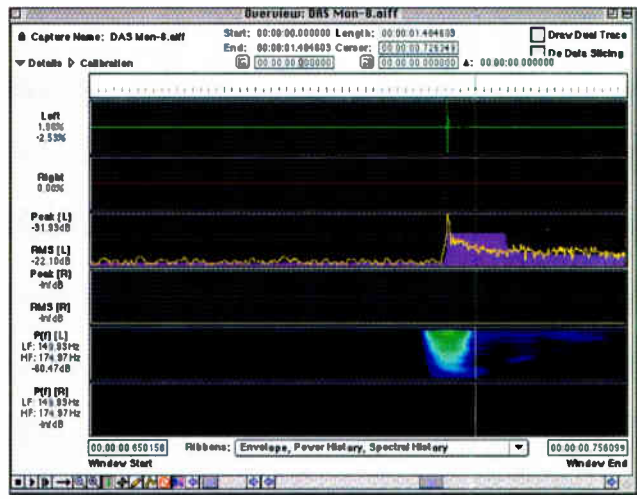
GOING DEEPER VIA .AIF

Once the Delay Finder's data is in RAM, convert it into an .AIF-format audio capture for further analysis in SpectraFoo. Hold down the Command key while clicking in the upper part of the Delay Finder window near the timecode readout. The Delay Finder's display also toggles between showing the impulse response and the power history peak energy curve each time you click or Option-click in this part of the window. The power history view is especially useful for looking at RT60 decay. The conversion to .AIF format done, open the audio capture via 'Foo's Capture List window and view it in some cool ways.

If you're working in 'Foo's stand-alone environment, then type Command-O, navigate through the file directory to your .AIF file and double-click the file to open the Capture List window. Here you'll see a list of all audio captures that have been opened during your current session.

If you're working with SpectraFoo's MAS or TDM plug-in interface, then you'll need to Command-click in the upper right corner of the Delay Finder window to make the Capture List window appear. The window will initially be blank—click inside it to make your audio capture appear in the list. Note that a new audio capture defaults to the name "Impulse" until you save it with a custom title to your hard drive.

Double-click on the desired audio capture in the Capture List window to make the Overview window appear. The default view shown in the Overview will be the envelope of the impulse response, but you should resize and zoom the window to make sense of its data. Clicking on the Mac zoom box on the right side of the Overview's title bar will make the window fill your screen. If you don't see the impulse response spike in the display, then zoom all the way out, drag the green wiper slightly to the right of the impulse strike and then zoom all the way in.



The Overview window shows impulse response envelope, power history and spectral history.

You can also select simultaneous views (arranged in tiers) of your audio capture's power and spectral histories in the Overview window. Power balance and correlation history can also be shown for applications involving dual channels. (Transfer function files are mono.) Select the view(s) you want via the Ribbons pop-up menu at the bottom of the Overview window. To select just one view while de-selecting all others, make your desired selection while holding the Option key down. May the 'Foo be with you! ■

BY MICHAEL COOPER

Michael Cooper is a Mix *contributing editor and owner of Michael Cooper Recording in beautiful Sisters, Ore.*

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IVL Technologies' VocalStudio provides real time vocal doubling, multi-part harmonies and pitch correction in an easy-to-use interface. A free demo is built-into the Digital 8 • Bus. Just add a second MFX card to own this innovative plug-in from a world leader in vocal processing.

TC Electronic Reverb (bundled with the D8B UFX card) provides Reverb 1 and Reverb 2 algorithms from the renowned TC Electronic M2000 Studio Effects Processor.

3 1999 TEC AWARD WINNER!

Normally we don't name competitors in our ads. But in this case, Mix Magazine published the other nominees for the 1999 TEC Award for Outstanding Technical Achievement in Small Format Consoles: Allen & Heath's GS-3000, Digidesign's ProControl, Panasonic's WR-DA7, Spirit's Digital 328 and Yamaha's 01V. Thanks to all who helped us win this prestigious award.

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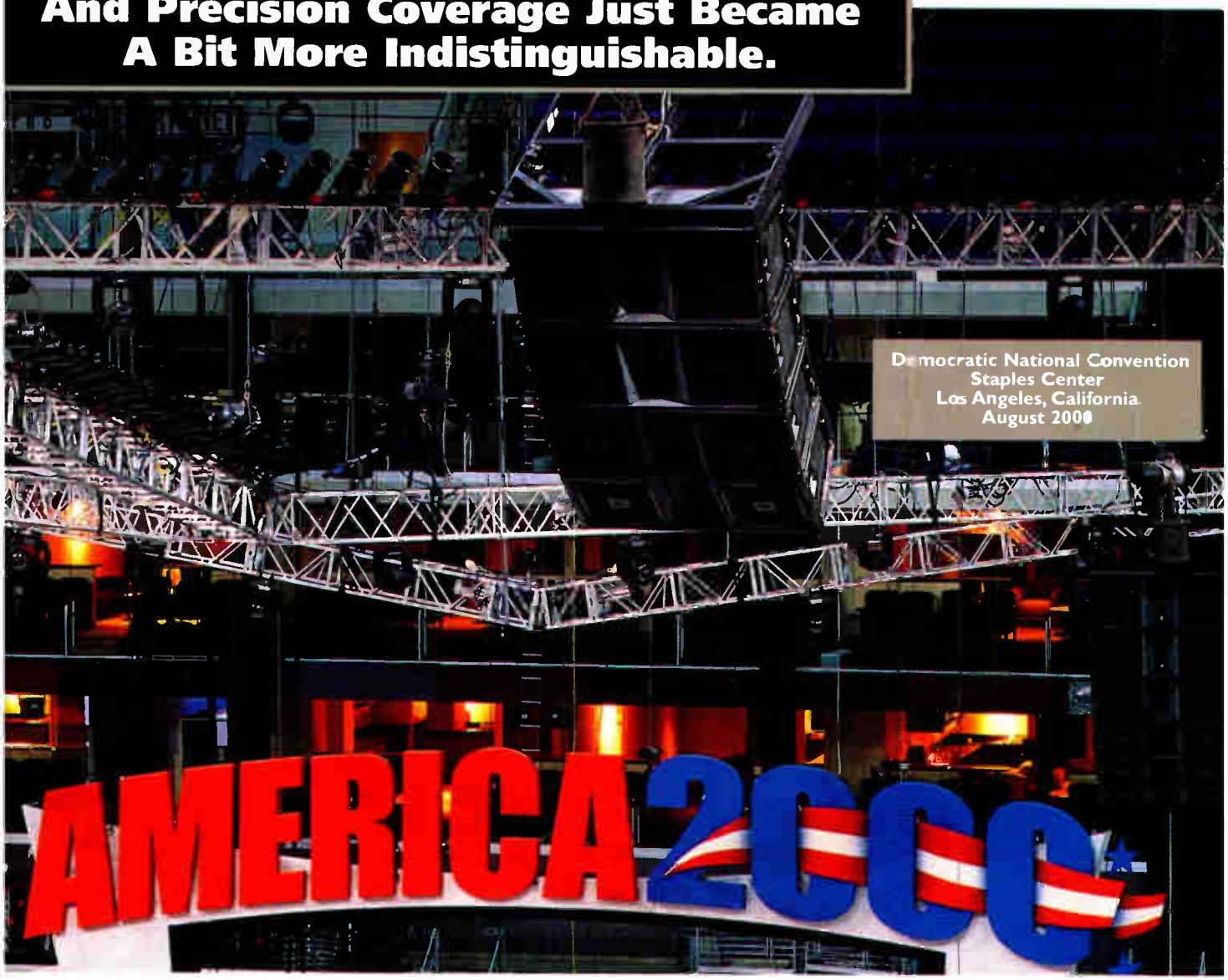

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