

# MIX

PROFESSIONAL AUDIO AND MUSIC PRODUCTION

## VOCAL SPECIAL

- New Large-Diaphragm Condenser Mics
- The Engineer and The Singer—  
Advice for Getting Great Sounds
- Classic Tracks: Patsy Cline's "Crazy"

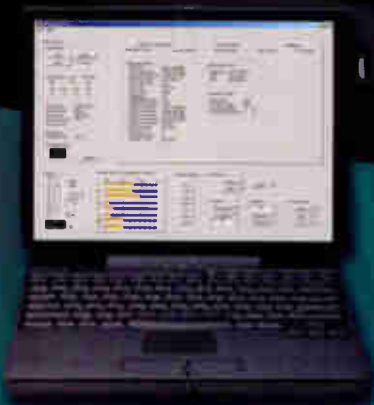


## RICKIE LEE JONES: RECORDING 'THE EVENING OF MY BEST DAY'

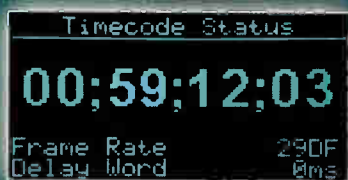
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On the Cover: Rickie Lee Jones, pictured in Studio A at The Village, is featured on our cover and in Maureen Drony's feature on the recording of the artist's latest album, *The Evening of My Best Day*. For more, turn to page 46. Photo: Scott Miller.



# MIX

PROFESSIONAL AUDIO AND MUSIC PRODUCTION  
August 2003, VOLUME 27, NUMBER 9

## features

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#### Listen Up for Advice From the Masters

Great engineers don't simply use processing to get great vocal sounds in the studio. They know their equipment, and, more importantly, they know which tricks and techniques will create the right balance of comfort and professionalism so the singer can make some real magic. L.A. editor Maureen Drony digs into the process with four experts: George Massenburg, Jimmy Douglass, Gary Paczosa and Mark Needham.

### 38 Large-Diaphragm Studio Mics

#### The Latest in Ear Candy

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### 46 In the Studio: Rickie Lee Jones

#### New Album Takes Songstress to Unprecedented Heights

The recording process follows the song. Rickie Lee Jones spent many months at The Village taking her latest collection of originals from concept to composition to arrangement to performance, and on through the mix. Maureen Drony interviewed Jones and her production team about the creation of *The Evening of My Best Day*.

### 63 2003 TEC Awards Voter's Guide

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### 122 Steely Dan's "Everything Must Go"

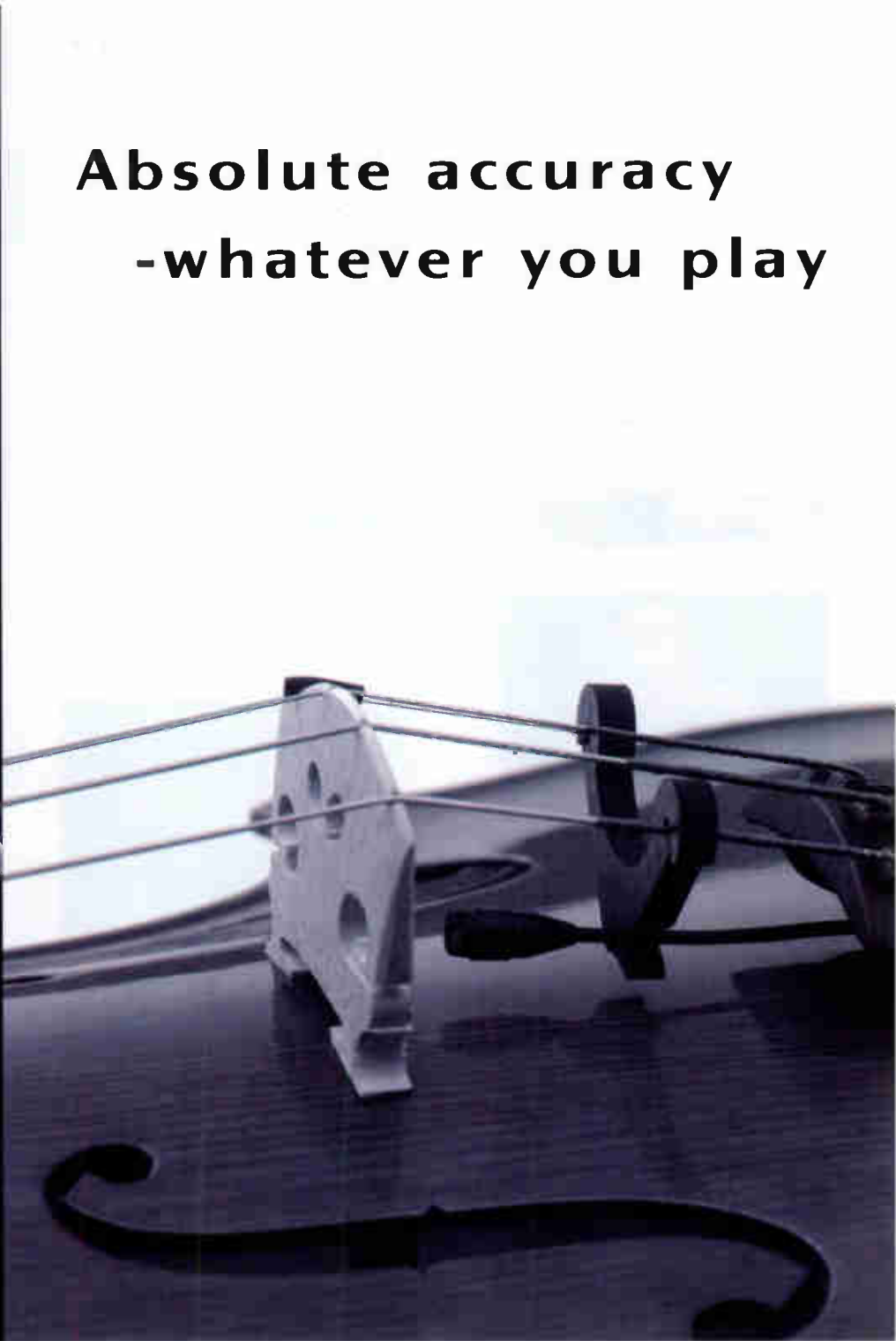
Are you sitting down? Steely Dan recorded basic tracks for their latest release live, to analog and over a period of *months*! Editorial director George Petersen chats with the industry's favorite showbiz kids—Donald Fagen and Walter Becker—about life, obscure literature and the production of *Everything Must Go*.

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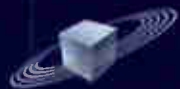
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## Old School/New School

One of the wonderful things about modern recording technology is that it accommodates a wide range of studio production styles. At one time, "recording" was essentially defined as putting a group of performers into an enclosed space and rolling acetates, or tape, to capture the event. The advent of multitracking, hard disk recording and MIDI brought new studio methodologies, essentially paving the way for a single artist, working alone, to create complex works.

This breakthrough opened the door for so many people, such as classical composers who—lacking access to a full orchestra—could assemble an entire symphonic recording on a desktop (or laptop!) PC. At the same time, a little power can be a dangerous thing. Thanks to unlimited tracking and fingertip access to thousands of different instruments, there have been a bazillion recordings that were aesthetically unlistenable, yet technically "pleasant." Sometimes, such compositions were fairly good to begin with, but few good musical ideas can survive in a sea of overproduction, a wash of string section samples and inappropriate instrumentation choices that happened to be trendy at that moment.

While for some, the studio experience represents solitary confinement—working hours alone staring at note markers or waveforms on a screen—the more traditional studio technique seems to be gaining popularity. As one example, we need look no further than Maureen Droney's cover story on Rickie Lee Jones, who set up shop at West L.A.'s The Village studios, spending months crafting *The Evening of My Best Day*, her latest CD. This approach wouldn't work for cash-strapped new bands, but it definitely clicked for Jones, who was able to take advantage of the Village's studio-as-microcosm atmosphere, bringing in players she'd run into in the halls.

Also in this issue, we chatted with Steely Dan's Walter Becker and Donald Fagen, who went back to a more traditional rehearse-a-band-and-cut-live-basics method for their new release, *Everything Must Go*. And for two guys who, for years, carved out the new frontier in digital technology, their new CD marks a return to the warm coziness of tracking onto 2-inch tape, or as Becker explains: "We went forward to analog!"

Things can sure change over the years. It wasn't so long ago when most bands couldn't afford to "go" digital. These days, analog tracking seems to be something of a luxury. Now, before I'm swamped with hundreds of angry e-mails, I'm not saying everyone should record like Rickie Lee Jones or Steely Dan, but it's nice to know that, new school or old school, technology supports many ways of working. Music is all about creating feelings and emotions—and that doesn't change. A keyboardist sequestered in front of a CPU can lay down a drum pattern, but it doesn't necessarily think like a drummer. Here, some input or a performance by another player can make the result that much sweeter.

Speaking of technology, *Mix* subscribers have received a ballot for the 19th Annual Technical Excellence & Creativity Awards, so check out the TEC Awards Voter's Guide on page 63 and return the postage-paid ballot. Every vote counts, so take a moment to help select our industry's best products, projects, people and facilities. The results will be announced at the TEC Awards ceremony, held during AES in October. For more information about the TEC Foundation, visit [www.tecawards.org](http://www.tecawards.org).

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West L.A. Music's Joe Taupier with R&B producer Fred Jenkins III

KZLA radio personality Peter Tilden with West L.A. Music's Glenn Hayes

Pop producer and songwriter David Foster with West L.A. Music's Pat Pennington

R&B producers Barry Lewis (center) and Jon Hartz (left) with West L.A. Music

Legendary filmmaker Steven Spielberg with West L.A. Music's Rick Wark

West L.A. Music's Barbara Searles with and R&B singer/songwriter Bill Gilmore

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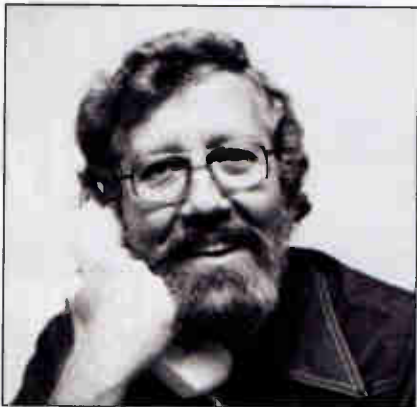
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World Radio History

# Letters to Mix



Jeep Harned

## REMEMBERING JEEP

From 1974 to 1982, I was privileged to have worked for Jeep Harned at MCI. During that time, I learned more than enough to sustain a career in the pro audio industry. Working for MCI was fun; there isn't another way to describe it. Jeep made everyone feel as if they were an important part of the job. He treated everyone the same whether you were a design engineer or on the assembly line, a truck driver or in the metal shop.

The first time he became aware of me was on a visit to the console test area where I had started out. I had my head down in a console, checking out a module, and he was talking to my direct boss, Wally Watkivs. Somewhere along the line, a capacitor had been put in backward and exploded. I popped up with pieces of paper from the cap all in my hair to see Wally and Jeep having a good laugh. After that, he would always come by and say hello. He also had a knack for walking up to a large board, like a 42-channel JH542, and pushing the one switch that wasn't working. This happened so often that I would swear he had come in the night before to find the one fault on the console.

I don't think Jeep wanted to run a big company; it just happened to him. He wanted to be out on the assembly line tinkering with the design or seeing if there was a better way of putting things together. If you saw him walking about the company in his denim shirt and jeans, you would have thought he was another person working on the line. He got excited about new designs. He always made the engineers go back and add what he thought was needed.

I once went to a Halloween party as Jeep. I grew a full beard and had my hair cut like his, added a little gray to both, wore some wire rim

glasses, and, of course, the Levi's shirt and jeans. Half of the people at the party were from MCI, and they all knew who I was. A week before the party, I told him that I had planned to go to the party as him. We had a big laugh about it.

He had told his family that when he passed away, he didn't want people to mourn but to celebrate his life. At his memorial in Ft. Lauderdale, Fla., about 150 to 200 people showed up for a man they had all worked for 20 years before. It was a true cross-section of the company: Engineers, management, people from the assembly lines, even the truck driver and the janitor all showed up to pay their respects. When it was said that he had been buried in his denim shirt and jeans, this brought a special cheer.

Glenn Coleman

## Q: WHAT CAN SAVE THE MUSIC INDUSTRY? A: MUSIC

In the old days, the music industry was a beloved link between listeners and interesting new music. Today, the music industry is a despicable screening agency that preselects a narrow range of boring junk to be force-fed to listeners. The industry should spend less money promoting music and more money giving listeners the ability to hear a variety and decide for themselves what they want to hear.

What is needed is a convenient way for customers to audition music before they buy it. The Web should provide customers with the ability to listen to a song once or twice in its entirety at home before buying it, and the quality should be good enough for customers to decide if they like it. I don't mind paying for music I like, but I've wasted too much money speculating on CDs that I didn't like because I had no way to audition them in advance. Some sites allow you to hear 30 seconds of very low-fi music to see if you like it. That is inadequate.

The industry needs to be less paranoid about someone listening for free and realize that it is listening that make people want to buy music. Thanks for this very interesting issue of your fine magazine.

Tom Slocombe

## BETTER MUSIC

As an attorney and an amateur musician, I read with interest your May issue about the music industry and the problems with downloading music. I suspect that some revenue is lost by the industry and the composers due to downloading, but my experience leads me to believe

that the major reason for falling sales is the lack of a quality product.

A few years ago, it was not uncommon for me to buy several CDs a month. I frequently received a dozen or more CDs as gifts from family and friends at Christmas or for my birthday. During the past couple of years, I have bought only a handful of CDs featuring recently recorded music. I have never downloaded music, and I think it is unethical to do so. Frankly, I haven't run across much recently recorded music that I thought was worth the trouble.

Rather than developing the technology to wage a battle that it cannot win, the industry should focus its attention on developing quality songwriters and performers who have more going for them than good cheekbones and a few dancing lessons. Give us a quality product, and we'll buy it. Downloading is a red herring.

Marvin B. Speed

## BAD TASTE

I'm sure I'm not the first person to complain about this, but I am sick of the ads in your magazine that objectify women or exclude them. In an industry that is already lacking in women, we don't need anymore of this! You can tell [your advertisers] that their ads in the May 2003 *Mix* will only discourage women from buying their products.

Lexie Stoia

## CORRECTION

I just had to correct an obvious mistake. In your obituary of Ed Germano (April 2003), it says that Stevie Wonder recorded *Songs in the Key of Life* at the Hit Factory. Stevie Wonder did, in fact, record at the Hit Factory after Eddie Germano took over, not for the nine months quoted, but for about three months, after which we went back to L.A., and Crystal Sound for the next two years. Out of the 21 songs on the album, only one basic track from the Hit Factory sessions was actually used on the albums.

Eddie Germano was a wonderful host during our times at the Hit Factory, and we had a great time recording at his facility. But those stories about Stevie Wonder's *Songs in the Key of Life* being done there are untrue. The albums and EP were done completely (recorded, mixed and even mastered) at Crystal Sound in Hollywood by myself and Gary Olazabal.

My sincerest condolences to the Germano family. He was far too young. He was a great guy, and the ideal studio owner.

John P. Fischbach





Todd Thibaud Band ©Thomas.Neukirchner@t-online.de



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World Radio History

## MONROE JONES LAUNCHES OWN LABEL

Created under the umbrella of Tony Brown's and Tim DuBois' Nashville-based Universal South Records, producer/songwriter Monroe Jones' eb+flo Records will continue in the same singer/songwriter/artist-driven label mentality. Jones (Jackson Browne, David Crosby, Third Day, etc.) will sign and produce all talent for his label. First under Jones' wing is former Burlap to Cashmere frontman Steven Delopoulos' Amer-



icana project *Me Died Blue*.

"I want to build a reputation as a producer and label guy who sides with the artist," said Jones, "and allows them to maintain more control and ownership of their music. [Brown and DuBois] are really amazing, and as a producer, I want to carry what I am doing into the label to facilitate the artists' vision, just as they do."

## GENEX THROWS A DSD SURROUND PLAYBACK PARTY

By Barry Rudolph

On May 12, Genex hosted a special playback session in Cello Studios' (Hollywood) Studio 1, where attendees got a glimpse into the rar-

efied world of Direct Stream Digital 5.1 surround recording. Back in mid-February, Sennheiser commissioned Mike Pappas of American Digital Recording to record a series of live 32-channel DSD recordings of the legendary Count Basie Orchestra at the University of Michigan using the Genex GX9048 Multiformat Hard Disc System. Five different arrays of Sennheiser and Neumann microphones, along with a Fritz binaural head for the surround channels, were recorded simultaneously in DSD format.

The recordings will be used to prepare a special Su-

per Audio CD celebrating the 75th anniversary of Neumann and the 100th anniversary of Count Basie's birth. At this event, sonic differences between LCR channels recorded with Sennheiser's MKH-800 (in cardioid mode) and Neumann's M-150 omnidirectional microphones were compared.

At the soirée were John Eargle of JME Engineering; Robert Hodas of Bob Hodas Acoustic Analysis; Gary Ladinsky from DesignFX Audio; Rodney Pearson, president of Tim Jordan Rentals; Jane Scobie from Royaltone Studios; Melanie Mullens Hoyson, studio manager at Firehouse Recording Studios; Grant Biles, co-owner of Mi Casa Studios; and many others.



PHOTO: MEL LAMBERT/MEDIA & MARKETING

A quiet moment at the party, from left: Simon Burges, Genex Audio hardware design engineer; Mike Pappas, president of American Digital Recordings; Kevin Brown, president of Genex Audio; and Paul Stocker, Genex Audio software design engineer.

## RONSTADT AT THE CLUBHOUSE



Linda Ronstadt finished up a jazz standards record (Verve) at Clubhouse (German-town, N.Y.) with producer John Boylan and engineer George Massenburg. The band consisted of Lewis Nash (drums), Christian McBride (bass), Alan Broadbent (piano, arranger), Bob Mann (guitar) and Warren Bernhardt (piano).



From left: Sean Price, Paul Antonell, George Massenburg and John Boylan take a break from tracking.

## CHICK COREA UPGRADES FOR BOX SET

In less than three weeks, Audio One Inc. completed two high-end audio and video projects for jazz pianist Chick Corea to support Corea's box set of DSD recordings at Blue Note in New York.

The studios were focused around a Pro Tools|HD3 system with Studio Network Solutions Fibre drives and a Digidesign 002. The studios also boast two Yamaha

02R96 consoles, PMC loudspeakers, a Runco projector and Marantz surround system. Both studios were networked using copper fiber for drive storage and Ethernet for file transfers and Internet access. In addition, a front-projection home theater was installed adjacent to the studios to view and listen to DVD-Audio and multichannel SACD.

From left: engineer Bernie Kirsch, Audio One founder/president David Frangioni and Chick Corea



**ON THE MOVE**

**Who:** John Lancken

**Main Responsibilities:** CEO of Fairlight

**Previous Lives:**

- March 2002-March 2003, Amber Technology, broadcast manager
- July 2001-December 2001, Fairlight ESP U.S., CEO
- January 1992-July 2001, Fairlight ESP group CEO



**The one profession that I would like to try is...**running a fishing/adventure company somewhere in Northern Queensland.

**If I could have been at a recording session, it would have been with...**Miles Davis. Having read just about every book written on him, to experience his genius and leadership in a recording session would be just incredible.

**The last great book I read was...***King of the Gypsies*, a story about and written by Bartley Gorman.

**The moment I knew I was in the right profession was when...**I found out that I could recommend developments to Fairlight's products that thoroughly satisfied our customer's needs and requirements. There is nothing better than seeing a customer's face when you have delivered something that makes their job easier and their business grow.

**Currently in my CD changer...**are a lot of Miles Davis CDs and *Songs From the Load* (Shaun Kerrigan, Ian Morgan and Lukas Bower).

**When I'm not at work, you can find me...**on the golf course, unless I'm fishing.

**INSTANT GRATIFICATION**

Why wait a year to buy the live album from your favorite band when you can get it as you walk out the venue's doors? Clear Channel Entertainment's new program, "Instant Live," does just that. CCE recently rolled out the program at club concerts in the Boston area, with future plans to go nationwide.

Concerts are recorded using a combination of ambient mics and feeds from the soundboard, adding state-of-the-art technology to duplicate, package and deliver CDs at the show. Fan can pre-order when purchasing their tickets. Fans who couldn't attend the event can buy

Instant Live CDs at designated Best Buy stores.

"This is about more than just technology expanding our ability to bring live entertainment to music fans in new forms," said Steve Simon, Instant Live project director and executive VP at Clear Channel Entertainment. "We are leveraging technology to improve the concert experience for fans and enhance the connection between them and their favorite artists."

To find out which concert Instant Live will hit next, visit <http://instantliveconcerts.com>.



**INDUSTRY NEWS**

Filling in recently retired Ned Jackson's shoes is **Raymond V. Malpocher**, new CEO/president at **Telex** (Minneapolis)...Former executive VP/general manager for the



*Bill Whearty*

*Rob Senn*

Recording Academy, **Rob Senn** joins **Gibson Guitar** (Nashville) as its new COO...The Consumer Electronics Association (Arlington, VA) appointed **Ralph Justus**, VP of standards and technology at CEA, to president of the **Institute of Electrical and Electronics Engineers' Consumer Electronics Society**...Audio school **Expression Center for New Media** (Emeryville, CA) has brought **Espi Sanjana** onboard as CFO and member of its Board of Directors...**Sennheiser Communications'** (Old Lyme, CT) newly created Telecommunications division is headed by VP **Bill Whearty**...New executive producers at **SPANK! Music and Sound Design's** two offices are **Ken Kolasny** (Chicago) and **Katie Jones** (Santa Monica, CA)...Continuing to add to its roster, **Fluid** (New York City) added composer **Judson Crane**...**Phonic America** (Tampa) named **Mark Dunford** as its national sales coordinator...Newly added to the **Mackie Designs** (Woodinville, WA) sales force: **Scott Pizzo** will be focusing on SR activities, based out of Whitinsville, Mass...**Nick Cook** is **InnovaSon's** (Brittany, France) sales and marketing director...**Cerwin-Vega** and **KRK** (both in Simi Valley, CA) welcome **Gustavo Afont** as international sales manager...**Brad Strickland** is **ILIO Entertainments'** (Malibu, CA) director of retail marketing and sales...New distribution deals: **Martin Audio** (Kitchener, Ontario) appointed the **POWER Group** (Mississauga, Ontario) to handle Canadian distribution; **Cadac Electronics** extends its U.S. reach with **Thomas Bensen** on the East Coast and **GLS Marketing** (Huntington Beach, CA) handling the West Coast; **SSL** named **RØDE Microphones** to represent the console maker in Australia and New Zealand...**L-Acoustics** named its first three independent rep firms: **DL Henderson Company** (Maynard, MA) will coordinate sales activities in upstate New York, Massachusetts, Rhode Island, Connecticut, Vermont, New Hampshire and Maine; **Metro/North Marketing** (Edison, NJ) in northern New Jersey and New York City; and **Right Track Marketing** (Kinnelon, NJ) in Virginia, Maryland, southern New Jersey, Delaware and eastern Pennsylvania.

**AMD, MICROSOFT TO SPONSOR TEC AWARDS**

Further confirming the convergence of the pro audio and computer industries, Advanced Micro Devices (AMD) and Microsoft have signed on as lead sponsors of the 19th Annual TEC Awards. AMD, makers of the Athlon microprocessor, will sponsor the Technical Achievement categories for the second year, while Microsoft, with its Media Player Series 9, will sponsor the Creative Achievement categories. Both companies are strongly focused on the entertainment industry as they develop new products for creative applications. Joining the two consumer giants as sponsors are numerous leading pro audio manufacturers. (See complete list on page 63.) The TEC Awards will be held in New York City on October 11. For complete information, e-mail Karen Dunn at [Karen@tecawards.org](mailto:Karen@tecawards.org).



## NOTES FROM THE NET

### WHERE'S WILLIE?

Columbia/Legacy recording artist Willie Nelson parked the bus at SIRIUS satellite radio in New York City to do an exclusive interview with SIRIUS host Lee Arnold. Later, Nelson stopped in at Bismieux Studio (Austin, Texas) to record vocal and guitar tracks—produced by Ray Benson—for upcoming projects by The Mavericks and Toots and The Maytals, respectively. Cris Burns engineered.



Willie Nelson with Lee Arnold



*In Bismieux Studio, from left: producer Richard Feldman of V2 Records, Willie Nelson and Asleep At The Wheel studio owner/producer Ray Benson*

### ROXIO REVIVES NAPSTER NAME

With its recent \$39.5 million acquisition of pressplay (the joint venture of Universal Music Group and Sony Music Entertainment), Roxio obtained a legal digital music distribution infrastructure and catalog rights with the Big Five, with plans to launch a new legal online music service under the Napster brand.

"Online music is highly synergistic with our core business of CD/DVD recording and digital media software and will be of great interest to our global customer base of over 100 million digital media consumers," Chris Gorog, CEO of Roxio, said. After adding new features, enhancing functionality and improving usability, Roxio will launch its service; details about the service were unavailable.



Chris Gorog

### INTERNATIONAL SITE PROMOTES LEGIT MUSIC SERVICES

A new international initiative to battle online music piracy, [www.pro-music.org](http://www.pro-music.org), offers plenty of information for the music consumer, including a step-by-step guide to the process of making music (and the numerous individuals involved in each step), a piracy debate and FAQs about copyright law.

### NLE BUYER'S GUIDE UPDATED

Offering more than 200 different hardware/software products for pro nonlinear video editing, Sypha's new-edition online guide (<http://syphaonline.com>) is now available. The guide includes turnkey systems, stand-alone appliances, video cards, software packages, disk recorders and servers for post. Search criteria now includes application, system type, operating system, video I/O type, cost range, AAF support, manufacturer and product name.

### REALONE À LA CARTE, SUBSCRIPTION SERVICE DEBUTS

At \$0.79 a pop, RealNetworks' RealOne Rhapsody digital music subscription service offers 330,000 tracks (including those acquired when Real bought Listen.com in April). Its biggest competitor, it seems, would be Apple's recently launched iTunes Music Store, which offers songs for \$0.99 each; RealOne has a leg up, though, as it targets PC customers: a much larger customer base. Subscribers can burn full albums or custom-mix CDs, build their own Internet radio station or listen to preprogrammed stations, and browse music info and editorial recommendations. After a 14-day free trial, RealOne Rhapsody costs \$9.95 a month.



### JUDGE RULES P2P FILE-SWAPPING TOOLS ARE LEGAL

Federal court Judge Stephen Wilson in Los Angeles in late-April ruled that Streamcast, owner of the Morpheus software, and Grokster were not liable for copyright infringements that took place using their software. The RIAA and MPA sued these two sites in October 2001.

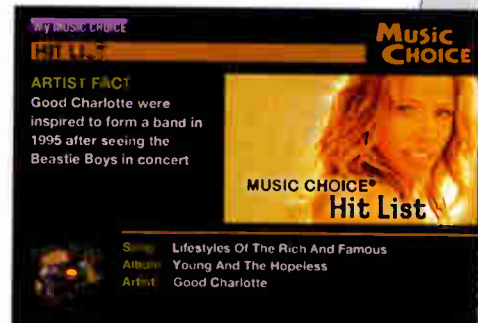
"Defendants distribute and support software, the users of which can and do choose to employ it for both lawful and unlawful ends," Wilson wrote in his opinion. "Grokster and Streamcast are not significantly different from companies that sell home-video recorders or copy machines, both of which can be and are used to infringe copyrights." According to the opinion, Wilson used the 1984 Supreme Court ruling that upheld the legality of Sony's Betamax VCR that helped establish the "substantial noninfringing use" clause.

The MPAA said that it plans to appeal. If the decision is upheld, however, it would lead to more energy being invested in further efforts to halt illegal file-sharing, including the recent attempt to deluge users' Instant-Messaging services with copyright warnings.

### MY CABLE, MY MUSIC

Music Choice unveiled its My Music Choice service, which gives digital cable subscribers the ability to construct custom music channels; the service is integrated with and available on the SeaChange video-on-demand platform.

Users simply scroll through a few television screens that prompt them to pick genres (up to three) and sub-genres (eight available), along with the mix for each genre. The service also delivers targeted promotions/advertisements that do not interrupt the music. "With a reach of 30 million homes nationally, coupled with unmatched viewer statistics for television or radio, My Music Choice is the choice for marketing partners looking to reach their targeted audience," said David Del Beccaro, president/CEO of Music Choice.



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# Makin' Music

## Back to the New Basics



PHOTOGRAPHY: BILL SCHWOB AND PHOTODISK / MONTAGE: LIZABETH HEAVERN

For a few years now, it has looked pretty much like the only chance of music putting a Ferrari in your garage was to land a cush spot with the Big 5 (labels), *be* one of the Big 5, or be one of the few real super-producers, engineers or mega-stars.

And before I go on, and definitely before you go off on me for defining success in the music industry by Ferrari count, let me remind you that I am one of the hold-outs who believes that music should be real, that singers should actually *sing the notes that you hear*, and that weedy synths have had their day and should be used exclusively for telescopic sight calibration. I believe that music should be the art that it once was.

But... If you make a good song—one that is technically superior, musically creative, maybe even critically acclaimed, and has soul to boot—is it diminished if it so happens that it hits and becomes commercially successful? Personally, I think that a Ferrari paid for by a hit—one that stands by itself as valid art—adds a certain conspicuous, materialistic, self-indulgent joy to the whole process.

And, with the price of many used Ferraris coming down and new opportunities opening up for smaller indies to generate the funds needed to bid on such toys, a brave new world populated by a plethora of artists, engineers, producers and studio owners—all happily flaunting that magical (albeit recently rare) “Successful Hollywood Dude” brand of overt consumption—may be upon us. And don’t forget how much more buying power your dollar has now that the industry no longer expects 50% of all revenue to be donated to the Great Cocaine Pool.

Yes, good times are here again, and they just might be better than the old good times ever were. (And this time you get to keep your septum!) Damn.

### WHY WOULD I SAY SOMETHING SO NAUSEATINGLY POSITIVE?

Why indeed? Because the Saving of the Industry is upon us. Now, I’m sure that there will be mistakes and adjustments, policy changes and some backward moves, but, generally, the flood gates are open, and



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the concept of legitimate music acquisition online is rapidly becoming part of the first world's gestalt.

And because of new trend-bucking policies like Apple's proclamation that indies will be treated exactly like, and *paid the same as*, the Big Boys, a new era of music may well be blossoming.

The structure is developing right now that will make small projects from independent studios and artists alike available to the world at large—for real this time.

We all know that the vast majority of indie efforts never had the faintest chance of seeing the light of day back in the Dark Ages, when the only tunnels with lights at their other ends were owned and operated by the majors. Why would a big label take a chance on a quirky unknown when they can easily extract that contractually required sixth album from some wholly owned artist who by now wishes he were dead and manages to convey those feelings to the public with every note he sings? With exposure already paid for and enough fan loyalty hanging in to assure coverage of release expenses, astronomical profits may be unlikely, but ac-

tual loss is just as unlikely.

So, once again, the middle road is taken, and we, the listening public, are treated to another season of stale mediocrity and formula successes for pre-teens.

But, no matter. These horrible times are coming to an end faster than I can type. (Well, I type with two fingers.) What has happened in the past months is the beginning of the most significant change in the music industry since coffee cans were first dipped in wax and scratched with steel needles.

**A CALL TO ARMS (AXES, ACTUALLY)**

And so, boys and girls, I am calling on you to take advantage of this once-in-a-lifetime opportunity: Help kick-start the revolution, the last actual *revolution* that there will ever be. First came wax cylinders, then vinyl, then sputtered aluminum on acrylic, and now, finally, from the seller's hard disk down the line to your hard disk. The next time it will be non-moving storage, and spinning a tune will be a distant, faded memory. No more word plays using "revolution." I'll have to come up with lines like, "Don't let the VM

sites ram music down your throat." But that's later. What about now?

Now is the time to do that dream project, that concept you always wanted to do, the one you knew you could pull off, if only it would be heard. For, simply put, now it can be heard—by the world.

Distribution paths should be popping up all over the Internet in the next year, and indies should actually find themselves with several options to choose from. Quite a change from the dismal scenario that they have historically faced.

And today's "prosumer" gear (in the hands of someone who gives a damn and can hear) has reached the point where it can get the job done, so the expense of building a project studio that can compete in this new age of music making is a small fraction of what it was a few years ago.

Let's do a reality check here. With my 17-inch PowerBook, I can lay down and even mix 128 tracks on a beach in the Bahamas, complete with all of the compressors, EQ and reverbs I need, and then post it to my online distributor while my scuba gear is being loaded onto the

—CONTINUED ON PAGE 155



# tangles?





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# From the Ashes

## You and Your Acoustics Consultant Can Prevent Facility Fires



ILLUSTRATION: PETER BENNETT

The fire at The Station nightclub in Rhode Island was the worst music-related disaster in New England in over 60 years. One hundred people, including one member of Great White, the heavy metal band performing that night, died, and nearly 200 more were injured. To many older folks, it was horribly reminiscent of the Coconut Grove fire in downtown Boston in 1942, in which almost 500 people lost their lives. That event resulted in a lot of changes in the safety codes for public buildings: Emergency lights, exit lights and public postings of room capacities were henceforth required. Furthermore, exit doors were no longer allowed to be locked from the inside. Though today it seems absurd to even consider doing that, reportedly that was the usual policy at the club.

You've no doubt seen the astonishing video of the beginnings of the fire, which was shot by a local news station. The video clearly shows sparks from a set of pyrotechnic fountains, or "gerbs," hitting the sound-

deadening material on the walls and instantly transforming them into sheets of flame. The flames shot up the walls in such synchronization—it's easy to see how some patrons thought the fire was part of the show—and then raced down the low ceiling, away from the stage, engulfing the whole room with extremely toxic, dark smoke.

A fire extinguisher that was supposed to be next to the stage was missing because its wall bracket was broken and nobody had fixed it. There were no sprinklers on the club's ceiling: They weren't required, due to the club's relatively small size, and the fact that the building was old enough to be "grandfathered" when sprinklers became mandated. According to reports, exit doors were painted to be invisible or opened the wrong way (and were removed from their frames and stored in a dressing room when inspectors showed up); exit lights were placed so that they couldn't be seen from the floor; windows were blocked on the inside by pool tables and by other furniture that was sup-

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World Radio History



posed to be taken out of the room when the club was used for concerts and blocked on the outside by the band's tour bus; and bouncers in the beginning of the fire tried to keep patrons from fleeing through the stage door.

The whole thing was over in less than two minutes. The band said they had permission to use pyrotechnics in the World War II-vintage wood building; the club owners said that they were never asked.

The lawsuits will be flying for years and will likely be resolved at the expense of those with the deepest pockets—Anheuser-Busch, which sponsored the concert, and Clear Channel Communications, one of the thousands of radio stations that “hosted” it—and not of the people who made the decisions.

One of the most serious of those decisions, and obviously a serious one for the owner of any facility—studio, performance space or rehearsal room—was the choice of acoustic foam. Put up in response to complaints by neighbors and insisted on by the local government before they would renew the club's license, the owners used, according to the *Providence Journal*, “the lowest grade, the cheapest stuff”: 2.5-inch-

And that is, unfortunately, the same situation that many music facilities find themselves in: how to acoustically treat the walls of rooms in which sound is important without turning them into firetraps.

thick packing foam, with no flame-retardant characteristics. An independent forensic specialist determined that the foam's combustibility was equivalent to 13 gallons of gasoline. Buying safer foam, according to one local reporter, would have cost the club a whopping additional \$600. (The foam's manufacturer is also named in the lawsuits.)

And that is, unfortunately, the same situation that many music facilities find

themselves in: how to acoustically treat the walls of rooms in which sound is important without turning them into firetraps.

Nick Colleran is one of the industry's most well-informed voices on this subject. A former studio owner—he was one of the founders of Alpha Audio in Richmond, Va.—and one-time president of SPARS, Colleran has been in the acoustic-treatment business for almost 25 years: Alpha Audio, besides being a successful multiroom facility far larger than you'd think its market would support, was also for many years the American audio distributor of Sonex's line of acoustic foam. Today, he runs Acoustics First, which manufactures and distributes a wide variety of acoustical materials to the media-production market and to the building trades in general. After the Rhode Island fire, he fielded a barrage of calls from national and regional news services.

“As soon as I saw that video of the fire, I knew it couldn't be any kind of acoustic foam: It went up way too fast. They went and insisted on buying the cheapest foam they could find: packing foam. Bedding and packing foam are not supposed to be

—CONTINUED ON PAGE 156

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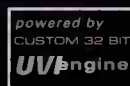
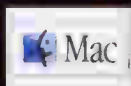
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# The Engineer

So what's the big deal? With automatic tuning devices, nondestructive digital editing, multitracking and effects, why worry about the vocal sound? These days, you can fix anything, right? Well, actually, wrong. The vocal is the heart and soul of a song and, unless you're working on an instrumental, the whole reason for a song's existence. Singers are—or should be—artists. And though it's true that some artists need a lot of help, hopefully, you'll get to work with the ones who just need you to capture them at their best. Sound easy? It's not.

Remember, you're working with artists. And sometimes that puts an engineer in the hot seat for a direct injection of intense artistic personality. At their most vulnerable—when they're reaching deep inside for a great performance—artists can be very touchy. The job is to smooth the way, get them recorded and make sure that they sound fabulous. For some insight, *Mix* rounded up a batch of experts and asked them for opinions, both philosophical and technical, on the art of recording vocals.

and

## GEORGE MASSENBURG

### Know Your Equipment

It's no secret that George Massenburg has an obsession with sonic transparency. Fortunately, he's worked with singers who merit it, including Linda Ronstadt, Aaron Neville, James Taylor, and Earth, Wind & Fire. Massenburg's vocal setup is specific and, not surprisingly, uses a lot of GML (George Massenburg Labs) equipment. "My feeling on equipment," he states, "is that *whatever* you use, you need to know it very well. I mainly use my mic pre's; I know their strengths and weaknesses. More often than not, what I'm reaching for in vocals is story, and that's subtle. I want more of the acoustic sound and its rich detail so I can choose what to accentuate."

How a singer hears himself or herself is, of course, crucial. "Actually," Massenburg comments, "it's dealing with the *perception* of how they hear themselves. If you have the vocal hot, you can sometimes push a vocalist a little flatter. If it's light, the vocalist will sometimes sing a little sharper. Getting the vocal placed in a soundscape in the 'phones definitely contributes to what texture a vocalist chooses. Sometimes, this soundscape is different from the mix you want in the speakers. The mix in the 'phones wants to flatter the vocalist into thinking that this artificial, chaotic studio environment is one in which they can sing without embarrassing themselves. That can be a huge task."

Listen Up

For Advice

From

The Masters

# The Vocalist

By Maureen Droney



The hardest thing in the studio is listening—and, if possible, listening from outside your prejudices, like when a vocalist challenges your ideas on pitch and phrasing.

—George Massenburg

If a song's emotion is affected by the mix, it follows that the responsibility to find the right emotion often falls on the engineer or producer. "You may want to compress a piano to have it ring a certain way against the vocal," Massenburg elaborates. "Usually, you want to compress the vocal to have it fit better with the piano, guitar or other tuning instrument. The other thing you have to keep track of is that—in the best songs, anyway—there are elements that conflict with each other and elements that blend: the theme and things working with it and against it. The textures and timbral balances an engineer reaches for affect all of those elements."

If a singer prefers a certain mic, Massenburg puts it up first, along with his Neumann U67 (with Stephen Paul 0.7-micron capsule), a Brauner VM1 or a Sanken CU-44X. The contenders are set up side by side for auditioning, most often (ahem) through a GML mic pre (occasionally through a Mastering Lab or Great River), GML EQ and GML compressor into a dB Technologies A/D converter. That kind of mic comparison can be subtle: the artist's participation is essential. "The hardest thing in the studio is listening," Massenburg states, "and, if possible, listening from outside your prejudices, like when a vocalist challenges your ideas on pitch and phrasing."

That brings up the dilemma of knowing what you're listening for. "If you don't know where your mix is going, you can paint yourself into a corner by just farting around with cool, seductive technology," Massenburg agrees. "If you make bad choices on your original tracks, they're pretty hard to reverse. Even if you've kept good notes—



and you should—if you've added aggressive EQ, then on top of that heavy compression, you can get in a lot of trouble. So I'll choose to record relatively clean. I'll put the 'jizz' just in the monitor path. Or, I'll record it on another track."

On recent sessions for a Verve Records album of jazz standards, Massenburg recorded Ronstadt with two vocal mics concurrently, comparing his vintage 67 (which, combined with "a lot of compression," is what Ronstadt is used to hearing in her 'phones) to more recent mics. The second chain had far less compression, less high-frequency EQ and less of the natural distortion provided by the 67: one of the things, according to Massenburg, Ronstadt likes about it. "When she goes loud, it distorts with a flattering kind of saturation that sounds like a passionate vocalist sounds," he explains. "That's a cue for her, and that's okay. But I didn't want to be locked into it, so we had both."

Words of wisdom? "Know your gear inside and out," Massenburg emphasizes. "It's okay if you're insecure; we're all insecure. Just never let anybody else in the studio see it! Having just a few pieces you know well will give you confidence in what you're hearing."

And the big picture? "It's important to always state very clearly what's true. That's different from always saying what you think. You want to say what you hear clearly and honestly, and at the same time, let the artist and producer know



they're in charge and that you'll do whatever they want. Your job is to help the artist arrive at that point where they can explore the muse, those tiny voices that tell them what to do. For the artist—and for the engineer—it's about finding the story and what's there to be said."

### JIMMY DOUGLASS

#### Going With the Flow

Long before Jimmy Douglass was legally old enough to work, he was hanging out at Atlantic Records' New York studios, learning classic techniques from engineering legends like Tom Dowd. These days, he applies that experience to the engineering battlefield of hip hop, where, in Manhattan, Miami and L.A., he plies his trade with such Platinum artists and producers as Missy Elliott, Timbaland and Jay-Z.

"My whole pace has changed," he admits, "because of the technology and the way people are working in the hip hop genre. They don't take the time to explore different sounds for different singers. The idea is king, and they just want to get the ideas down."

Frequently accommodating a rapid succession of singers and/or rappers with little time to switch gear, Douglass has settled on a basic setup: "A nice [Neumann U] 87, limited just enough to help me out a little bit. The 87 is one of the most neutral mics around. Most of them sound pretty good, and if you have problems—if it's murky or the level's not coming in properly—you'll hear it right away."

Adding to the challenge are singers who prefer to work in darkness, meaning—along with no written lyrics—no visual cues. "When I was a kid, I'd watch Aretha," Douglass recalls. "She'd rehearse a song once or twice; everyone knew what was going to happen. Daryl Hall, a very dynamic singer, had characteristic movements he made when he was getting ready to hit a high note. These days, people don't tell me what they're going to be singing. They just do it."

"It's all in the moment. You may be set up perfectly, in the 'phones and on the mic, for a lead vocal, when suddenly, somebody shows up to do the rap. Right now. Okay, I could have two mics set up and think I've got it covered, but then somebody else shows up who has a little ad lib part to do. Right now. It's much eas-

ier to have one mic and basically go for it. I'll tend not to really EQ things going in, so I can re-create more easily later. Keeping things flat is key to keeping speed."

For working hip hop-style, Pro Tools is, Douglass admits, "a godsend. When they're writing on the spot, it really helps that when I punch in, it's nondestructive. I can move things around later or put EQ on a tiny part to make it match up. Or take pops: It's easy to go to the exact part of a word, put in a filter or EQ out below 100



I try to make it so that the headphones and the mic are not the issue, and all anybody has to do is perform. The best way to do that is to leave things, in general, flat.

—Jimmy Douglass

[Hz], then fade in on the word instead of having a sharp attack."

Douglass uses either the onboard Neve VR preamp, a Neve 1073 or a Focusrite, with a blackface UREI 1176, generally set "with fast attack and slow release, so it's more limiting than compressing. The meter doesn't move very much. Hopefully, I've got the level set so the 1176 will grab serious peaks. I used to keep marks on [the limiter] to indicate levels, but now I don't even bother. We get going so fast, I just do things on-the-fly."

Multiple vocalists in rapid succession raise havoc with headphone mixes. "I try to make it so that the headphones and the mic are not the issue, and all anybody has to do is perform. The best way to do that is to leave things, in general, flat. Most people will fall into the same sound zone, and

the overall volume is something that I play with; some people are sensitive and some like to be tranced out by the volume."

Having the experience to know what's fixable and what isn't gives Douglass an edge. "If I think what's happening really isn't cool, I have a couple of cards to play that will change the course of a song," he says with a laugh. "Every now and then, I'll say, 'This is the thing that's worth it,' and I'll go the whole nine until we take the time and get it right."

### GARY PACZOSA

#### Recording Nashville's Finest

Gary Paczosa works with such singing royalty as Dolly Parton, the Dixie Chicks and Alison Krauss. These women know the value of a good engineer; Parton has done 10 albums with Paczosa, and when I happened to phone during a session, Krauss jumped on the phone to detail what makes him a vocalist's favorite.

"Gary makes it sound great," she comments. "He also brings me confidence. That's priceless. It's pretty exposing to do this, but with Gary, I feel completely supported. He's a perfectionist. He tells you when it's great and when he doesn't think it sounds so good. But by being interested and listening, and having a real love for music, he sets the atmosphere. He makes me want to do a better job than I have ever done before."

"It takes great courage to go out in the studio and, in effect, pull your pants down in front of everybody," Paczosa says. "They know that I'm their best ally. I'm going to have endless patience, and I'm honest. It's a fine line to walk: to keep people encouraged but to let them know exactly what's going on. Nobody wants to be bull-shitted through the process and then hate what they hear during playback."

To create the all-important listening environment, in the room and in the 'phones, Paczosa uses baffles to control early room reflections on loud vocals, chooses reverbs without predelay or early reflections, and rolls "a little top off [reverbs] for warmth. It doesn't sound very wet, and they don't hear the artificial reverb artifacts, but they're in a nice ambient space."

Most artists get either a stereo board mix with extra vocal or the board mix through a Grace headphone preamp. Paczosa also carries a selection of his own headphones for singers. Currently favoring open-air Grado RS1s, he controls the leakage from them by mixing down parts, such as hi-hat, that are likely to bleed during quiet sections.

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It's a fine line to walk: to keep people encouraged but to let them know exactly what's going on. Nobody wants to be bullshitted through the process and then hate what they hear during playback.

—Gary Paczosa



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Blue's Bottle (with 251 capsule). The mic preamp is "always" a Mastering Lab. "Mastering Lab preamps are key to the sound of our records," he says. "They're beautiful, with just gain control and a fine trim I can ride so I don't hit the compressor too hard."

Compression and EQ are both GML; recording is to a Euphonix R1 with Euphonix converters or to Steinberg's Nuendo with Swisssonics A/D. Paczosa explains. "I want to capture all of the low-level detail and nuance. I like the GML compressor because it's really invisible; it's a smart compressor that does exactly what I ask of it, and it doesn't change the tone. But, in general, I'm not a big fan of compression: There are too many sacrifices for the kind of music I work on. That can be a bit hairy with someone like [Dixie Chick] Natalie [Maines] or when Dolly's going to belt it out. You've got to be on your toes, that's for damn sure. It's a workout. I may only get one or two

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## The Engineer and The Vocalist

passes out of Dolly or Natalie, or, worse yet, they may fall in love with the [basic] track vocal, so even during tracking, it must be treated like a final vocal."

Paczosa's vocalists like to sing the song down, with minimal punching, and then comp. "It's always about a performance, from top to bottom. Most of the singers I work with want to map out the comp themselves—with my input—and then have me put it together. I think it helps having someone sitting there with them who really enjoys their singing, fighting to keep in words or phrases that really move me. A fan instead of an engineer."

### MARK NEEDHAM

#### No Fixing in the Mix

Engineer/producer Mark Needham spent much of last year engineering on Fleetwood Mac's latest, *Say You Will* (described in detail in the July 2003). Known for his work with, among others, Chris Isaak (including the classic "Wicked Game"), Needham records a lot of vocals. His current "first-choice" mics are a Sanken CU-41 and the Swedish Didrik, handmade by Didrik de Geer. "I started using the Didrik a few years ago with Chris Isaak," Needham explains. "I like how up-front vocals sound with it. It has a crisp top end, good low end and amazing transient response. Also, [laughs] it looks cool. It's big and copper and shaped like a diving bell. I go to the Sanken if the Didrik's sound gets *too* big."

For vocals on *Say You Will*, Needham used outboard preamps. "For vocals, I always skip the console," he comments. "I use either Massenburg or Daking preamps and EQs. The Daking EQs are more like a Trident A range, a little punchier than the Massenburgs, but I love the top end and cleanliness on both of them."

Needham isn't a flat-to-tape guy. "I pretty much know how I want the vocal to sound and I record it that way," he states. "I don't try to fix it in the mix." After preamp and EQ, Needham uses either a tube EAR compressor or, for a more rock edge, a UREI 1176, generally set on a ratio of 4:1 with attack and release both around 3 o'clock. "The EAR," he notes, "has a setup that's a little harder to describe, with an A/C threshold and a comp/limit ratio that's kind of odd. It's a soft-sounding compressor



It has to be right in the beginning, because once [artists] hear a bad mix in the 'phones, it's hard for them ever to believe that you've fixed it.

—Mark Needham

that you can really hear kicking in."

For more raw vocals, he uses a handheld Shure SM57 with a Drawmer tube preamp and Neve 1081 EQ. "Sometimes," he notes, "when a band singer is singing with headphones and an expensive mic in front of him, and the performance isn't happening, a handheld works better."

Needham personally checks headphones before the artist puts them on, and for some sessions, like recent ones with Robert Cray, carries his own Furman multi-channel cue system. "I'll have my assistant listen," he says, "but I'll run out, talk in the mic and check it against the mix. If you start out with the vocal sounding too thin or a bad overall headphone mix, no matter what you do, for the next hour things won't be right. It has to be right in the beginning, because once they hear a bad mix in the 'phones, it's hard for them ever to believe that you've fixed it."

While his clients sing the song through several times, Needham makes extensive notes and is ready for a quick composite by the time they're done. Comps are done on faders, generally a Digidesign 8-channel HUI, for easy level matching and natural-sounding crossfades. "I think the main thing that makes me a good vocal guy," he reflects, "is being really fast at comping and, sometimes, coming up with combinations the artist wouldn't have thought of."





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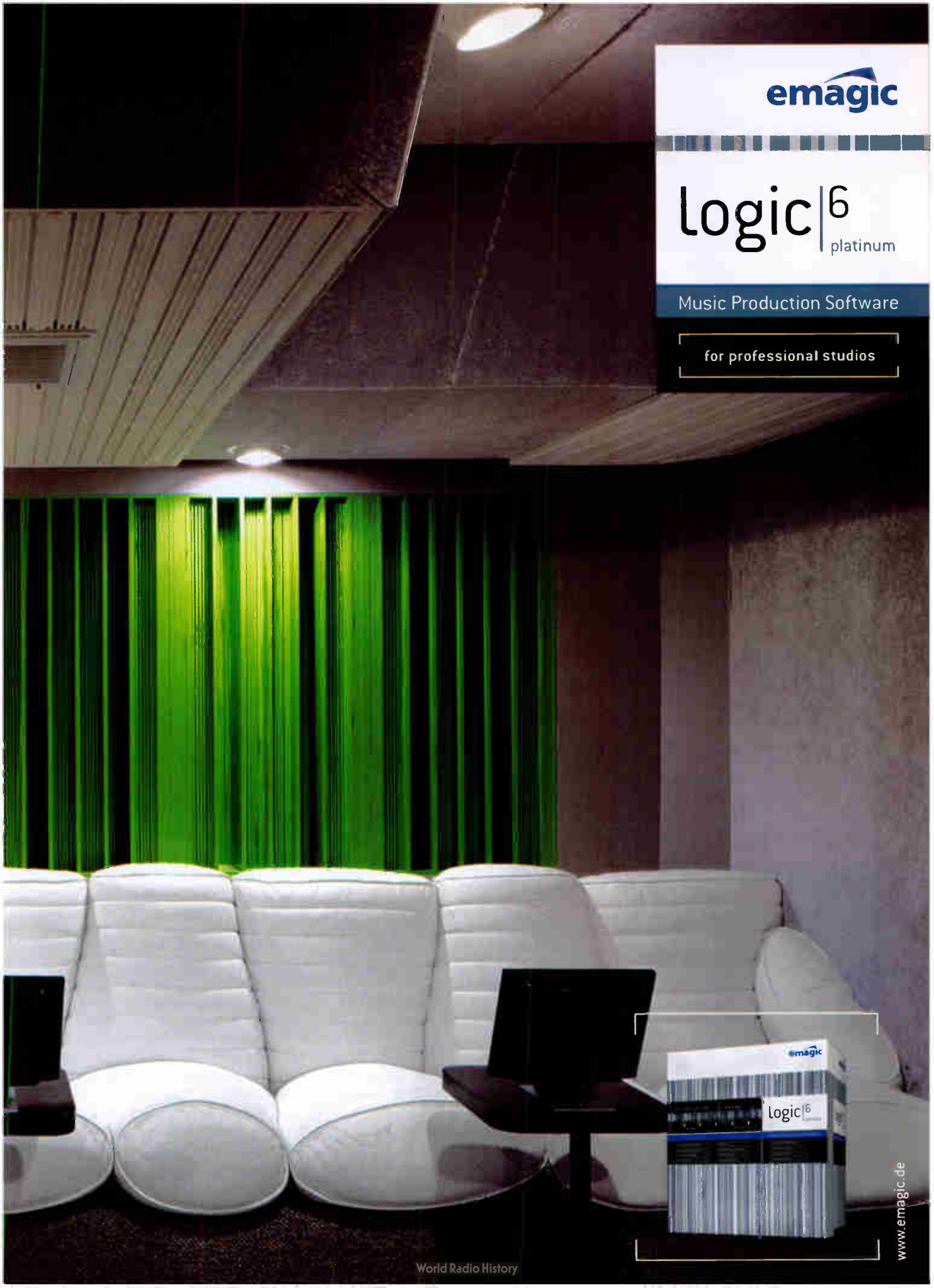
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# LARGE-DIAPHRAGM

by Randy Alberts

## The Latest in Ear Candy

Researching some four dozen new large-diaphragm microphones that have recently come to market is the gearhead's version of a kid in a candy store. Do you really need another 1-inch diaphragm condenser mic for vocals, acoustic guitar, drum overheads, horns or piano? Depending on your studio's allowance, that's like asking a 10-year-old to explain the logic in buying another candy bar. The kids might not agree, but your next recording application stands to benefit far more from buying one of the following microphones than simply downing another Snicker's bar. Getting a new mic *and* a Snicker's is, of course, the best way to go.

In compiling this article, *Mix* talked to

more than 40 microphone manufacturers and, based on the preponderance of new product offerings, the mic market appears to be healthy. Increasing competition and overseas manufacturing are making this a more difficult market for many. Fortunately, for studio owners, engineers, producers, musicians, voice-over specialists and anyone with at least \$99 to spend on a new mic, it's a buyers market: The competition means better gear and more options. Considering the passionate devotion to excellence displayed by every mic manufacturer we spoke with, it's no wonder that, thanks to their pursuits, we all sound a lot better these days. So here—listed alphabetically by manufacturer—is what's new since January of 2002.

ADK Microphones ([www.adkmic.com](http://www.adkmic.com)) added three new large-diaphragm offerings to its mic cabinet since 2002. The A-48 Vintage Valve (\$1,295) is a Class-A, discrete tube condenser that features nine remotely variable polar patterns, and transverse-mounted 12AX7 valve and dual 5-micron, 1.07-inch diaphragms. A premium flight case and multipin cable are included. New from the Area 51 family is the ADK ST (\$795), a switchable, tri-pattern, Class-A FET condenser design with -10dB pad and highpass filter controls; and the Model S "Vienna Edition" (\$595), a high-SPL-handling, fixed cardioid condenser with -18dB pad and HP filter switches, a 1.07-inch diaphragm and totally upgraded "JP Mod" Class-A discrete electronics. The Vienna takes up to 135dB SPL, which makes it useful for live record-



Blue Baby Bottle

ing and studio applications, and will be followed by the company's "Hamburg Edition" this fall.

AKG's ([www.akgusa.com](http://www.akgusa.com)) C 414 B-ULS/SE Special Stereo Set has a nickel finish like the original 1976-1986 C 414 EB, but pairs the classic CK12 capsules with modern UltraLinear Series electronics. The two-mic set with case, shock-mounts, stereo bar and windscreens is \$2,100.

New from Apex Electronics ([www.apexelectronics.com](http://www.apexelectronics.com)) is the Model 410 (\$249, including cat's cradle shock-mount, windsock and flight case). This cardioid-pattern condenser features switchable -6dB, 100Hz low-frequency cut-off and a 1-inch diameter capsule. Frequency response is 40 to 19k Hz, maximum SPL is 135 dB (1 kHz @ 0.5% THD), input sensitivity is -37 dB @ 1 kHz, and signal-to-noise ratio is better than 73 dB. A -10dB output pad switch is included.

Reviewed in last month's *Mix*, Audio-Technica's ([www.audio-technica.com](http://www.audio-technica.com)) \$599 AT3060 is a tube condenser mic with a large coupling transformer for enhanced low-frequency linearity. The 3060, which works on 48-volt DC phantom power and captures a dynamic range of 50 to 16k Hz,



Audio-Technica AT3060



# STUDIO MICS

features a shock-mounted tube assembly for dampening mechanically coupled vibrations and a precision-machined, nickel-plated brass body. Included are the AT8458 shock-mount and protective pouch.

The \$799 SCX-25 from Audix ([www.audixusa.com](http://www.audixusa.com)) is a large-diaphragm condenser incorporating a unique suspension system that's shock-mounted within a machined brass ring. Here, the capsule is completely isolated from the mic body and electronics. Frequency response is 20 to 20k Hz, dynamic range is 124 dB, and SPL handling is 138 dB; the mic's miniaturized preamp circuitry is housed in a svelte 4-inch body. A foam-lined wood carrying case and mic clip are standard accessories.

Behringer's ([www.behringer.com](http://www.behringer.com)) B-2 Pro Dual-Diaphragm Studio Condenser Microphone is an affordable (\$189.99) studio mic with a 1-inch, gold-sputtered, dual-diaphragm capsule and 20 to 20k Hz frequency response (with a slight boost in the presence range). Selectable omnidirectional, figure-8 and cardioid patterns, switchable highpass filter and a -10dB pad switch are offered on the B-2 Pro, along



Brauner Phantom C

with carry case, shock-mount and wind-screen. Switchable LF roll-off and input attenuation are also included on this satin-nickel-finished mic.

The latest studio condenser from Blue ([www.bluemic.com](http://www.bluemic.com)) is the distinctive silver and sparkly black-colored Baby Bottle. Billed as a smaller, more affordable version of the company's flagship multi-capsule Tube Bottle, the Baby Bottle is quite different. The Baby Bottle is not a tube mic; instead, it uses solid-state, Class-A discrete circuitry with a transformerless output. The Baby Bottle has a cardioid, 6-micron condenser capsule and retails at \$649; custom shock-mount and metal-mesh windscreen are optional.

Brauner's (dist. by Transamerica Audio Group, [www.transaudiogroup.com](http://www.transaudiogroup.com)) latest are the Phantom C (\$1,750) and Velvet Voice (\$2,800). The Phantom C is the company's first nontube (FET) large-diaphragm mic offering and retains the quality and look of the Brauner VM1. This fixed-cardioid pattern, phantom-powered mic has been re-tuned for vocal use where more proximity effect and less sibilance are required. The Phantom C sports 8dBa self-noise and 142dB max SPL, and includes carry case and shock-mount. The company's Velvet Voice, which offers cardioid polar response with selectable phase-invert, hard-ground, soft-ground or ground-lift controls, is another Brauner tube mic, also fine-tuned for vocal applications. Class-A amplifiers, custom-built Lundahl transformers and JAN tubes are included.

The second-generation Equitek<sup>2</sup> line of servo-condenser microphones from CAD Microphones ([www.cadmics.com](http://www.cadmics.com)) includes the new e100<sup>2</sup> (\$399 with case and shock-mount). Unlike most FET designs, the e100<sup>2</sup> does not use discrete circuitry, instead opting for high-speed op amps that are individually laser trimmed and employed to handle a large amount of negative feedback and reduce nonlinearity. Sharing the same side-address, su-



Neumann TLM 127

percoid electret capsule as the e200<sup>2</sup>, the e100<sup>2</sup> has a single capsule. A 10 to 18k Hz bandwidth, high-SPL capability (148dB SPL with pad), dual-cantilevered capsule shock isolators and a 20dB noncapacitive pad are included, as is an internal power system that supplies far more current than phantom power alone.

Carvin's ([www.carvin.com](http://www.carvin.com)) CM-87S—the company's latest studio condenser—is \$299.95, with oxygen-free, 30-foot cable and custom aluminum flight case. The mic features a cardioid pattern, gold-sputtered 6-micron element, FET electronics, a -10dB pad switch and a low-cut switch to remove rumbling, all suspended within a



Telefunken Ela-M 251

machined casing. Specs include a high-SPL rating of 145 dB (with -10dB pad).

DPA Microphones' ([www.dpamicrophones.com](http://www.dpamicrophones.com)) 4041-T, 4041-S and 4041-SP

# LARGE-DIAPHRAGM STUDIO MICS

(\$2,990/each) are the company's latest large-diaphragm omni condensers based on the 4041 body. The 4041-S and phantom-powered 4041-SP are solid-state designs that offer the 4041 line's



Audix SCX-25

maximum flexibility in preamp options when miking vocals, strings or other acoustic instruments with large dynamics. The SP low self-noise is typically 8 dB (A). The 4041-S uses the company's MMP4000-S solid-state preamp, and, like the output stage of the 4041-T's tube preamp, the transistor output stage is driven as a Class-A, unity-gain impedance converter. The 4041-T (130V) uses the MMP4000-T preamp and incorporates a pentode vacuum-tube driven as a cathode follower in a Class-A, unity-gain output stage.

The vintage-inspired \$699 GT Model 1b and \$399 GT Model 1b-FET from Groove Tubes (www.groovetubes.com, dist. by M-Audio) are part of a full redesign of the original GT mics, although the company's 1.1-inch, 3-micron "Disk" diaphragm design is still implemented in each. More recent GT releases are the MD1b-FET (\$399) and MD1b Tube (\$699), both revamped versions of the company's original MD1 condensers that debuted 11 years ago. The Tube now sports the larger 1.1-inch diaphragm and includes a JAN spec tube, as well as hard-mount and shock-mount, power supply and cable. The MD1b-FET is a Class-A reissued version of the MD1.

Josephson Engineering's (www.josephson.com) top-of-the-line Series Seven family of variable polar-pattern mics use the company's ultrathin-diaphragm design and a multiple capsule system.

The C700A (\$4,500 with Fiberglass case) comes with a dual-diaphragm element and a smaller omnidirectional capsule.

Fed to a mixer, both outputs allow engineers to select any directional pattern from omni to figure-8 at the console, or both signals can be recorded on different tracks and the pattern selection



CAD e100

done in mixdown. A stereo version (C700S; \$6,500) has two pressure-gradient capsules placed at right angles with an omni capsule in the middle so that any coincident-stereo pickup can be synthesized at the mixer.

Korby Audio Technologies' (www.korbyaudio.com) four-head mic system, the Model 10 (\$3,200 with one cap; \$6,000 with all four), is aptly referred to as The Convertible. The first available amplifier body in the series is the Model 10, which contains electronics based around a 5703 vacuum tube. Sold exclusively by Vintage King Audio, The Convertible is an interchangeable mic capsule system packaged in a powder-coated cylinder that's color-coded to designate model number and amplifier electronics. The capsule assembly units are housed in a sturdy, bright nickel plate and mesh-grille assembly. Four capsules—based on the Neumann U47, Elam 251, AKG C-12 and a custom-modified version of the Neumann U67—are currently available, with other models in development.

The long-popular L47MP from Lawson Microphones (www.lawsonmicrophones.com) recently received some significant upgrades. Among several enhancements in the new L47MP Mark II (\$1,995 factory direct) is the conversion to a dual-tube topology with a custom Lundahl audio transformer for lower noise and greater transparency. Also added is an externally switchable, cardioid-only function that is easily accessible without disassembling the mic. A cool, new blue LED inside the head indicates the L47MP Mark II is in Multipattern mode. Also new are an LF contour switch with a -6dB/octave roll-off starting at 100 Hz and a new -10dB pad. A black-platinum PVD finish is now available, and the power supply has a hard granite finish. Cardioid, omni, figure-8 and infinite intermediate patterns are selectable at the power supply.

The new MXL V69 Mogami Edition Tube Condenser Microphone (\$379) from Marshall Electronics (www.mxlmics.com) features a 12AT7 tube and comes with a deluxe flight case, versatile shock-mount, dedicated power supply, windscreen and Mogami wiring throughout, both internally and in the 7-pin and XLR microphone cables. A 25mm diaphragm, 20 to 20k Hz bandwidth, vintage cosmetics,



DPA 4041-SP

and 24-carat, gold-plated grille round out the V69.

Microtech Gefell (www.gefell-mics.com), now distributed in North America by C-Tec, offers its M990 (\$2,400) large-diaphragm, cardioid tube mic. The mic's low-noise tube design, large gold-evaporated M9 capsule and extended low-end response add punch and clarity. Housed on a "triangulated" pedestal that deflects sound refractions away from the capsule (helping reduce phase cancellation and comb-filtering), the M990 is housed in a slim-line tubular body with a dark bronze finish. Switching from 110V to 220V operation is as easy as rotating the unit's fuse housing.



Microtech Gefell M990

Made in Germany, MBHO's (www.mbho.de) \$1,499 MBNM 608 triple-patterned (omni, cardioid, figure-8) condenser uniquely couples its vintage "lollipop" dual-gold-sputtered capsule assembly to a modern FET body. The precision brass-backed diaphragm provides a 5 to 20k Hz bandwidth in Omni mode.

Nady's (www.nadywireless.com) TCM 1050 tube condenser mic (\$369.95) features a gold-sputtered, ultrathin, 1-inch mylar dual-diaphragm and a 12AT7 tube preamp. A dedicated power supply with balanced XLR out is standard, as are nine different polar patterns remotely selectable on the PS. Also included are an aluminum flight case, elastic spider shock-mount, foam windscreen, and 30-foot, 7-pin XLR cable.

New from Neumann (www.neumannusa.com) is the TLM 127 (price TBA), a new large-diaphragm, multipattern condenser mic with optional remote polar-pattern switching. The TLM 127 builds on the design specs of the legendary



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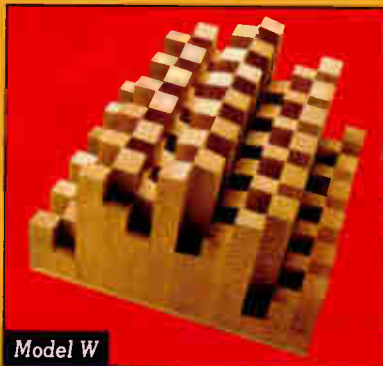
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Korby Model 10

supply option (available in 2004) lets users upgrade the TLM 127 to support a choice of five directional patterns, including hypercardioid, wide-angle cardioid and figure-8. Shipping for the past year is Neumann's Solution-D digital mic, which features a proprietary 28-bit A/D converter fed directly from the capsule (thus removing an analog electronics stage) and providing remote control of polar pattern, pre-attenuation, low-cut and pre-amplification. The mic connects directly to gear supporting the AES 42-2001 standard, or an available interface converts the format into a standard stereo AES/EBU signal.



Lawson L47MP  
Mark II

Distributed by A&F McKay Audio, the Oktava (www.oktava.net) MKL-2500 features a gold-sputtered, 33mm capsule and 6C315-P tube, offering enough third-harmonic distortion to brighten and add warmth to any sound source. All engineers can now benefit from the tube sound without paying huge prices. The MKL2500 works as an all-around mic with a very low noise floor.



RØDE NT1-A



Photo courtesy of Ed Dzubak, three-time Emmy winner and enthusiastic REALTRAPS customer.

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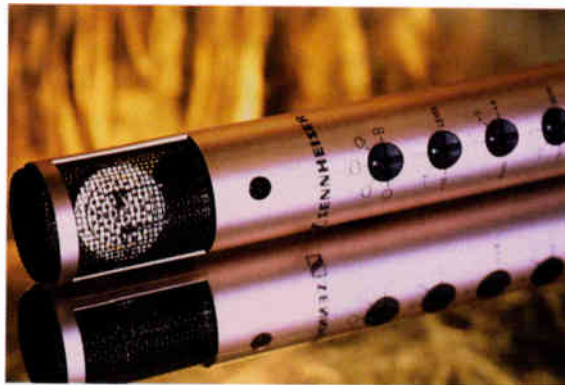
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## LARGE-DIAPHRAGM STUDIO MICS

The latest from Sweden's Pearl Microphone Laboratory (dist. by Independent Audio, [www.independentaudio.com](http://www.independentaudio.com)) is the CO22 studio condenser microphone. Finished in black chromium (with a red LED that indicates when phantom power



Sennheiser MKH 800

is active), this large-diaphragm omni boasts low self-noise and flat 40 to 25k Hz response, both on- and off-axis. The CO22 includes an aluminum case; shock-mount is optional.

Peavey's ([www.peavey.com](http://www.peavey.com)) Studio Pro M1 (\$299.99) and Studio Pro M2 (\$399.99) are recording mics with gold-plated membranes and low-noise ratings. The cardioid-only M1 has a switchable LF roll-off and -10dB pad. The Studio Pro M2 is a variable-pattern (omni, cardioid, figure-8) mic with gold-plated, double-membrane capsule. Both mics can handle up to 140dB SPL without distortion and a 30 to 20k Hz bandwidth. An optional \$75 shock-mount is available for both mics.

The satin-nickel-finished NT-1A (\$349) from RØDE Microphones ([www.rodemicrophones.com](http://www.rodemicrophones.com)) is an externally polarized, 1-inch diaphragm condenser using a JFET impedance converter with bipolar output. Featuring 20 to 20k Hz frequency response, 132dB dynamic range and 137dB max SPL, the new NT1-A "Anniversary Model" is a complete redesign of the popular RØDE NT1 studio mic. Surface-mounted electronics offer an impressive 5dBa self-noise spec.

The Samson ([www.samsontech.com](http://www.samsontech.com)) C01 condenser mic has a 19mm diaphragm, gold-plated XLR connector, LED phantom power indicator and a cardioid pattern. Retail is \$149.99; the optional SP01 shock-mount is \$39.95.

SE Electronics' ([www.seelectronics.com](http://www.seelectronics.com))

newest mics include the Z-5600 Studio Tube (\$699), Z-3300 (\$375) and SE 2200 Cardioid FET (\$199). The latter is a FET condenser mic featuring a 1-inch, gold-sputtered/6-micron diaphragm, 25 to 20k Hz response, -10dB pad and 100Hz low-cut filter. The Z-3300 adds omni and figure-8 polar patterns, extended frequency response and an additional 1.07-inch diaphragm to its FET Class-A design. The tube-based Z-5600 ups the ante with nine-way polar-pattern selection, a 12AX7 tube and upgraded specs. Cables, a suspension shock-mount and deluxe case round out the Z-5600 package.

Sennheiser's ([www.sennheiserusa.com](http://www.sennheiserusa.com)) MKH-800 (\$2,950) is a redesign of the company's MKH80 classic studio condenser. The new MKH800—boasting a frequency response up to 50 kHz, a dynamic range of 126 dB and a self-noise of only 10

dBa—uses a single-wideband transducer operating on the push-pull principle for low distortion, capturing an extended frequency range of 30 to 50k Hz.

The KSM27 (\$575 with rubber-isolated external shock-mount and velveteen pouch) from Shure ([www.shure.com](http://www.shure.com)) is a side-address condenser microphone with a cardioid polar pattern. The mic's low self-noise, switchable -15dB pad, three-position switchable LF filter and extended frequency response are tailored for vocal tracking and instrument recording

New from Soundlux ([www.soundlux.com](http://www.soundlux.com))



Soundlux ifet7

eluxmics.com) are the E47 (\$3,950) and ifet7 (\$2,100). The latter, a departure from the company's previous models built to re-create the sound of one vintage mic model, re-creates the essential sounds of two classic vintage FET mics: the fet47 and 87fet. Incorporating all of the standard features of these popular '60s microphones, the ifet7 features "V" (vocal) and "I" (instrument) modes that represent the two completely different sets of internal mic amplifiers used in attaining the fet47 or 87fet sound. The E47 is intended primarily for close-up male or female vocals, but also does well to capture drums. The E47's polar patterns are variable from omni through cardioid and figure-8 with fixed-cardioid option.

Sound Performance Labs' (www.spl-usa.com) Nugget studio condenser is built to company specs by Audio-Technica and based on A-T's popular 40 Series. The mic features a 1-inch diameter cardioid capsule, fully transformerless circuitry, high-SPL capacity, switchable 50Hz low-cut filter, 10dB pad and a distinctive gold finish. Retail is \$428, including shock-mount.

Studio Projects (www.pmiaudio.com) released its B1 (\$99.99), a new affordable mic with 1-inch, 3-micron, gold-sputtered large diaphragm, housed in a pressure-

gradient transducer capsule. The B1 features a frequency response of 20 to 20k Hz; a foam wind-screen, zippered bag and mic clip are included. The B3 (\$199.99) is a multipattern large-diaphragm condenser mic that adds three pattern positions (cardioid, omnidirectional and figure-8), pad switch and highpass filter cut-off to the B1's offerings.

Unveiled at last year's AES was Telefunken USA's (www.telefunkenusa.com) reissue of the classic tube Ela-M 251 studio mic. Each \$10,125 unit is meticulously hand-built in the USA to original German specs, with the same methods used to make the originals 40 years ago. Telefunken USA also offers replacement parts for all Ela-M and U47/48 mics, cables, power supplies and CK-12 capsules, and can restore most vintage Telefunken.

Rounding out this year's class of



Studio Projects B1

large-diaphragm studio microphones is the modular KR Series from T.H.E.Audio (Taylor Hohendahl Engineering, www.theaudio.com). The KA-04 body (\$398) is a modular preamp assembly that accepts a wide range of various application-oriented capsules, including the new KR-25A (\$568) and KR-33A (\$633). The latter, a 33mm-diameter capsule, offers slightly more sensitivity and maximum-SPL handling than the KR-25A. The newly redesigned KR Series also incorporates a new compound membrane, housing and mic mounting in what the company calls its most complete recording tool. ■

*Randy Alberts is an audio/music journalist, author and close-miked guitarist in search of the lost chord. Tascam: 30 Years of Recording Evolution is available from Hal Leonard Publishing.*

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IN  
THE  
STUDIO:

# RICKIE LEE JONES

By Maureen Droney

Over the course of her 20-year career, singer/songwriter Rickie Lee Jones has influenced innumerable other artists and acquired a passionate, almost reverential fan base. A unique vocalist with a restless and unclassifiable style, she paints pictures and tells stories against out-of-the-ordinary tracks that meld soul, jazz, folk, rock and spoken-word riffing in the style of the great Beat poets. Her eponymous first album spawned the hit singles "Chuck E.'s In Love" and "Young Blood," and garnered her both critical and commercial success. With her second release, the complex and bohemian *Pirates*, she made it known that she would be following her own path rather than chasing commercial success. Six more full-length studio albums followed, (along with an EP, two live records and a song on the soundtrack to *The King of Comedy*). On two of the studio albums, she brought her distinctive style to interpretations of songs—from jazz standards and pop to show tunes—composed by others, winning critical accolades for both the 1991 *Pop Pop* and *It's Like This* (2000).

Never one for half-measures, when Jones sets out to make a record, a lot of people sit up and take notice. This time around, the songs were all her own. Determining that the time was right, she set up shop at The Village in West L.A. for an intense bout of writing and recording. Camped out for months in Studio A, she pulled together songs that had been gestating for years and new written-in-the-studio cuts, then gathered a diverse group of musicians and proceeded to cast each song as the muse determined.

Jones is an instinctive and subtle songwriter who arranges her own songs; she is also a perfectionist who doesn't let go until she thinks a song is good enough. Unlike a lot of other artists, however, she has no doubt about when that is. Some of the songs on the album, set for a fall release and tentatively titled *The Evening of My Best Day*, are more overtly political than Jones' past work. "As with all of the records I have made," she comments, "the songs are about what's on my mind—my point of view at the time—so the general color or coat of this music is social commentary. Within that, it explores a lot of personal feelings and hopes and sorrows. All of it does eventually come back to the morality of the world we live in today and our choices at every moment. That's why this record is timely and sincere."

New Album Takes  
Songstress to  
Unprecedented Heights

All photos: Scott Miller







## Rickie Lee Jones

Songs with a political message are something new for Jones; for this project, they were a main impetus. "I always tried very hard to avoid saying political things, because it's so transient," she explains on a break from the last day of mixing at The Village's Studio D. "The greater work is to heal the heart. Heal the heart and I think people will go on their right path, whatever that is for them. That's been my take on my job. But in my own life, I couldn't be silent with the things that I see happening now: people destroying not only the fabric and integrity of our nation, but of the whole planet. I had to speak out. I did it with my music, and I hope the songs get heard.

"Some of these songs were started 15 years ago, and they just waited. They

were really good, but they wouldn't go any further. That was how this record started: I had four or five great parts of songs. And I don't know if it's the chicken or the egg, but once I decide to take on the recording process and insist that the songs arrive, they do. They arrive in abundance and tell whatever story that group of songs is going to present. It's not anything I can plan. It reveals itself, and it's almost always comprehensive and complete. Usually, it's a complete learning experience for me, also. The pieces of the puzzle come together and, when put together, reveal what they have to say. The listener can take this trip as a participant—as one of the characters—or as an observer. The pieces will reveal themselves for many years to come."

Guitarist David Kalish, who co-wrote and played with Jones on the 1981 *Pirates*, was onboard for the sessions as co-producer. He'd been working on a solo project of his own for Jones' label—Furniture for the People—when, liking what she heard, she asked him to help out on an album of her own.

"When we started, we really didn't intend for it to be the kind of project that it ended up as," Kalish recalls. "We certainly weren't planning on going into a major studio for a long period of time. Rickie

had a couple of things mapped out when we went in, but she really wrote the record as we progressed in the studio. It was an interesting process to watch her take the germ of an idea—like a very raw vocal or a little guitar riff—and develop it over time. She definitely has a unique way of creating," he says with a laugh. "There are so many steps along the way, and so many decisions that impact the next step. One of the interesting things is that she doesn't clue you in, which is sometimes a wonderful thing because you're constantly surprised. Of course, the other side of that is, some days you don't know where your feet are."

"I am a bit of a challenge to work with, because I'm so 'of the moment,'" Jones admits. "It's, 'Oh, I have an idea, let's go do that.' Maybe [the people I'm working with] were doing one thing, and now they've got to set up for something else. But for me, that's the nature of art. In a lot of recordings, people don't work that way. It's, 'This is what we're doing today, and the artist be damned.' I don't let that go down. I think the producer's job is to facilitate and to be ready for what happens, not to tell people what's going to happen."

Composing on guitar or piano, Jones generally went from ideas to song outlines in a few hours. That process was recorded, and some of it became master tracks. "There were never really demos," notes Kalish. "Because we used Pro Tools and had—with Jason Wormer—a really good Pro Tools guy, we were able to fix and clean up and actually use some of those raw tracks as the master tracks, which was great, because a lot of these songs are so much about the vibe. This record is not about a lot of playing or a lot of solos. Rickie is one of the great minimalists of our time, and it's about the vocal, the words and the vibe that she creates."

Jones is known for her eclectic—and demanding—taste in musicians. Past collaborators have run the gamut from Steely Dan's Walter Becker, jazz bassist Charlie Haden, and Scottish cult and critical faves the Blue Nile to musician/producer David Was. A common denominator, if there is one, is an ability to connect on some visceral level with the emotion of a song. Working at The Village, some unexpected and fruitful musical interactions took place, including three tracks (recorded, according to Jones, in



From left: guitarist/co-producer David Kalish, Rickie Lee Jones and keyboardist Neil Larsen

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## Analogue Partner



"I had been looking for mixers for about the last three years, trying to make the decision whether or not to go digital or try to look around for an analog console. The Media 51, especially the 60-input version, was exactly what I had been looking for."

Malcolm Harper  
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George Petit,  
Walkercording Ltd.,  
New York City

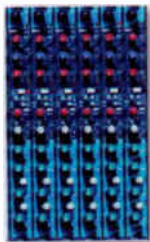


"The average project that walks in here is over 40 tracks. We do a lot of R&B and hip hop, and vocal layering is thick, and you've got sometimes three or four low-end instruments that you have to somehow blend in. So they have to bang."

Kevin Bomar  
South Coast Recorders, Texas

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## Rickie Lee Jones

one “most joyful day”) with guitarist Bill Frisell and his band—Tony Scherr and Kenny Wollesen—who were recording down the hall.

Another song, titled “Lapdog,” came together on a spur of the moment when upright bassist Michael Elizondo, who’d worked with Jones on the 1996 *Ghostly-head* tour, was also at The Village, recording with Ry Cooder. “We did ‘Lapdog’ with him live in the room, much to [the engineer’s] consternation,” says Jones wryly. “I knew that was how we were going to have to do it to make it happen. It caused some problems with fixing a couple of things, but, ultimately, it was worth it. That was a song I’ve tried to record many times in the [isolation] booth, and it didn’t work. It’s hard to do sexy music when you’re isolated in a booth. The really living stuff has to happen in the room, with people’s energy actually coming together.”

Keyboardist Greg Phillinganes, recording in Studio D with Keb’ Mo’, was also borrowed for some tracks. Other musicians included keyboardist Neil Larsen, contemporary gospel singer Eric Benét and singer/songwriter Ben Harper on backing vocals, master session drummer James Gadson, Pete Thomas (drummer with Elvis Costello), Richard Thompson and Badly Drawn Boy, punk bassist Mike Watt, and Los Lobos’ David Hidalgo and Cougar Estrada. “Every person that I called to do this record was thrilled to show up,” Kalish comments. “They all wanted to work with Rickie Lee, which made my job easy.”

“When it works, it works right away,” says Jones, describing how her tracking sessions come together. “If it doesn’t, you could play for three hours and it still wouldn’t work. Usually, you can tell right away. Someone gets it or they don’t, and if they don’t, showing it to them won’t make them feel it. That’s the sad part about tracking. You can tell immediately if it’s going to work or not, but then you’re still kind of obliged to try and make it work. The really great things



work immediately because you speak a common language.”

Engineer Mark Johnson recorded the tracking and overdub sessions, with assistance and additional engineering by Wormer. Vocals, according to Wormer, were recorded with a U47 microphone through a 1081 preamp (module 20!) onboard Studio A’s Neve 8048 console, direct to Pro Tools with no compression: a challenge working with such a dynamic singer. “She definitely didn’t want compression,” notes Wormer. “She’s got great ears, and at first, she’d even test us to make sure we weren’t trying to sneak any in. She’d surprise us by suddenly singing something really loud and bust us if she heard a compressor on her voice.” Over the span of the vocal-heavy project, an enormous number of tracks were recorded and then librated by date, so that Jones (whose memory of what she’s sung when is, reportedly, flawless) could access different vocal tracks when she needed them.

Mixing was also cast by song. Some mixes were done on Studio A’s Neve and some on the Neve 88R in Studio D, also at The Village. Mixing chores were divided among Johnson, Joe Chiccarelli and Mark Howard.

Making the record herself was an expensive way to go, but Jones found it had benefits. “The best part is not having a record label,” she says. “You would think I would feel bad—after 22 years of being a kind of quiet, behind-the-scenes staple in music—to find myself without a label. But what it did for me was free me from feeling indebted to anybody, in any way, to deliver a thing. Nowhere in the back of my mind was I wishing that I could make some kind of hit that people at the label would feel really good about. I mean, of course I want to sell 10 million records,” she adds, laughing. “But there’s nowhere in the album where I thought I was going to try to craft a hit for the A&R guy. Because I can’t, anyway.”

“I hope I can always be able to do this: to make my own record and then sell it to whoever likes it. Rather than being with someone who’s already bought you and is obliged to try to sell what you give them, when—for whatever reason—between the time they signed you and now they’re no longer interested. Yes, of course I want to make money, but what I most want is that someone sees this record as an amazing thing and is excited to put it out.”



Maureen Dronney is Mix’s Los Angeles editor.

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

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**Scott Burgess, Pro Audio Review**

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

**Felt, Songwriter Magazine**

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

**Mitch Gallagher, Editor EQ Magazine**

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

**Pete Weiss, Tape Op Magazine**



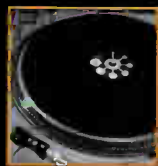
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# Wyclef Jean

## Former Fugees All-Star Stakes His Claim

“Producers are really...you just *know* that you're created to produce.” Subconsciously, Wyclef Jean knew from a very early age that music would play a very large role in his life. Born the son of a preacher in Croix-des-Bouquet, Haiti, Jean's family moved to the Marlborough projects in Brooklyn when he was nine years old. Soon, he found himself immersed in the musical side of his father's church: playing music, acting as choir director, creating arrangements for the choir and the church band, and recording and producing choir albums with his cousin Jerry Wonda. During his teenage years, he took up guitar and studied jazz in his high school's music department. He was hooked!

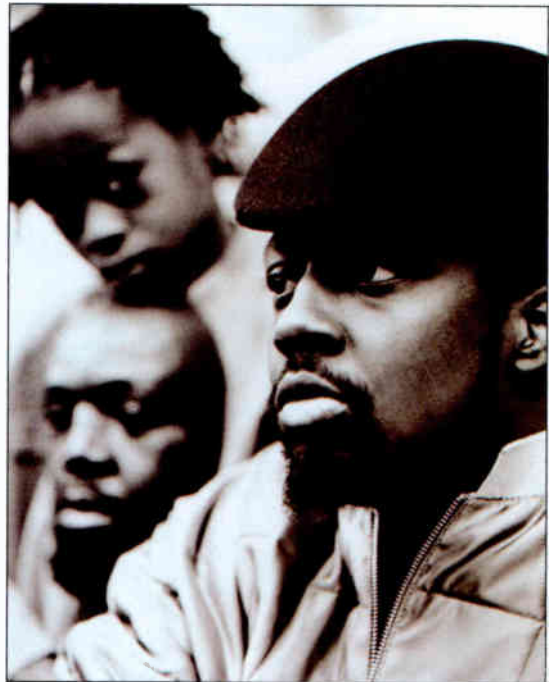
Jean (pronounced the French way) may still be best known for his work with the best-selling rap group, The Fugees, but a slew of multi-Platinum solo projects (including a Best Male R&B Vocal Performance Grammy nomination for “Gone Till November”) and working with numerous other artists led him away from the band and onto his own musical path. Fusing streetwise hip hop and rap with as many different styles of music as he could (most notably reggae), Jean's solo albums have rocketed up the charts and even landed him his own record label: Clef Records, a joint venture with Clive Davis' J Records. Bridging the gap between his conservative Caribbean upbringing and the wild environments of Brooklyn and New Jersey, Jean has been able to move effortlessly between different musical genres, signing and produc-

ing an eclectic roster including such unlikely artists as Mick Jagger, Kenny Rogers and Tom Jones. However, his greatest successes have come from producing and collaborating with Destiny's Child, Maya, Carlos Santana, Whitney Houston and Michael Jackson.

Like so many of his hip hop counterparts, Jean has taken personal control of nearly

every aspect of his career: producing/composing/arranging his own work and other artists in his studio with partner Wonda. What began as a project studio in Norton, N.J., the Booga Basement has expanded into a full-size recording space in midtown New York City, now dubbed Platinum Sound.

*Why were you interested in opening up your own studio and bringing it over from New Jersey, as opposed*



*to just working in Manhattan's commercial studios?*

It gets tiring knowing that you get a 12-hour block, and after 12 hours, you have to leave. You have to pay overtime. You never get used to a space because you keep changing spaces. And then when you do get used to a space, at the end of the year, you pay \$5 million for it. So as opposed to doing that, it was better to just have a place where we could just come to every day and work.

We had the Booga Basement [project studio] in Jersey. Actually, this was all Jerry's idea, because I was not for it.

*How come?*

Because that shit cost a lot of money. I was like, “Yo, we should take our time.” He's like, “Okay, cool. We'll buy the space first. Once we get the space, then we'll take our time.” Next thing you know, we have this space. We had one SSL board, and then some clients came in and they were like, “This is hot, but we heard that another studio's the only one with the Number One SSL board: a K.” I was like, “J, what the f\*\*\* is a K?” And he was like, “Yo. That's the hottest SSL.” I said, “Man, we gotta get that, because that's the Number One thing.” And we're trying to be one of the Number One studios in New York City, which we are.

It's very stressful [having your own studio], if you're going to do it right. When I think about the biggest studios in New York, they're owned by people that





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are not musicians or artists, and artists come in and spend their money there, and they'd rather do that, as opposed to getting the headache. So they pay someone else to get the headache. In this situation, we grew up with a studio [Booker Basement].

**Do you think that's happening a lot in hip hop? Artists who are just popping up and opening their own studios?**

Definitely. Puffy's got Daddy House. Everyone is starting in line. I think with everything that's going on in the world today—financially and the economics of society—it's very important to be self-sufficient with your business. I don't only think that you should have your own studio, but you should also have your own studio, your own mastering facility, your own post room so you can cut your own videos. Because when you're an artist, if you get a 10-year run—some are over 10 years—and you're successful, if you make over \$20 million, then you gotta figure the money that you dished out and you spent on videos and studio time and all that stuff, you were just better off investing \$4 or \$5 million. You would have been saving yourself a whole lot more money. That's why I encourage everybody to get self-employed.

**What kind of equipment were you looking for?**

Our dream was always to get an SSL. I would say everyone that I'm in the business with—whether it's Carlos Santana, Whitney, Michael Jackson, different people—everyone loves the sound of the SSL. We're getting in that form of business: to make sure you have not only what yourself as an artist is looking for, but what your clients are going to be looking for.

**What other pieces of equipment were you looking for when Platinum first opened?**

I like Neves. I love the pre's, EQs, compressors; I love the SSL compressors. Those were the things we were looking for. We never imagined that we would have two SSL boards.

**What was it about the SSL consoles that you liked?**

I think it's about the warmth of the console: We wanted an analog console. It gives you exactly the sound that you're looking for. If the sound of the console makes the music come out too clean, I think with a lot of hip hop, a lot of reggae, a lot of rock, just straight-up thrashing...I think the sound of the SSL is more hard-core to what you're looking for. And at the same time, you can reverse the console and do a music score on it. I think



When one equipment purchase leads to another: Inside the rapidly expanding Platinum Sound (New York City), Wyclef Jean (left) and partner/cousin Jerry Wonda finally catch a break to just sit and enjoy.

the magic of it is making it sound dark when you want and then turning it around and making it sound *epic*. I've worked with a lot of consoles and they're great. I'm not knocking them. But they ain't no SSL.

**You guys are going for a really warm, analog-type sound.**

Yeah, 'cause it's rebel music, baby!

I don't only think that you should have your own studio, but you should also have your own studio, your own mastering facility, your own post room so you can cut your own videos.

**Were there any special room treatments to make sure you kept that rebel sound?**

We brought in [designer] Frank Comentale. He did Chung King, Hit Factory, a lot of different studios. It was very important to bring him in and be a part of the whole design, because we love the way the room sounds at the Hit; we love the warmth. He was great. We also had Andy Grassi—one of our mix engineers—give his input regarding the wiring, design and room specs during construction, as well

as Scott Jackson to make the deals, to get the equipment and keep us running.

**So you and Jerry are both producers. Do you switch off production duties on a single project or are you both behind the board at the same time?**

The way we work, it's like we're brothers, you know? We're cousins. And we play everything. I would say Jerry's probably one of the top five best bass players I've ever heard in the world. So Jerry usually comes with the crazy bass and drums. Specializing in that real hard-core...

**Low end.**

Yeah. Definitely. I specialize in lyrics and melodies. I'm good with themes.

**So you bring everything to the table all at once.**

Yeah. That's how we do it. But it's funny, because Jerry taught me how to play bass. His brother taught me how to play guitar when we were little. So we switch off instruments. We play keyboard, piano. The way we learned all this was, when you're in the studio at a young age, you're not aware that there's a union where you can hire musicians. So you have all of this equipment and you just learn how to play it yourself. We're like, "We're not gonna get no drummer. We'll play the drums ourselves." That's how we learned it. But I would think the way that we produce is like Sly and Robbie, or Jimmy Jam and Terry Lewis; that sort of vibe. We vibe together.

What Wyclef and Jerry represent as producers is we're innovators. So when you get a Wyclef/Jerry Wonda record, don't

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Rob Arbittier

Producer / Composer, Noisy

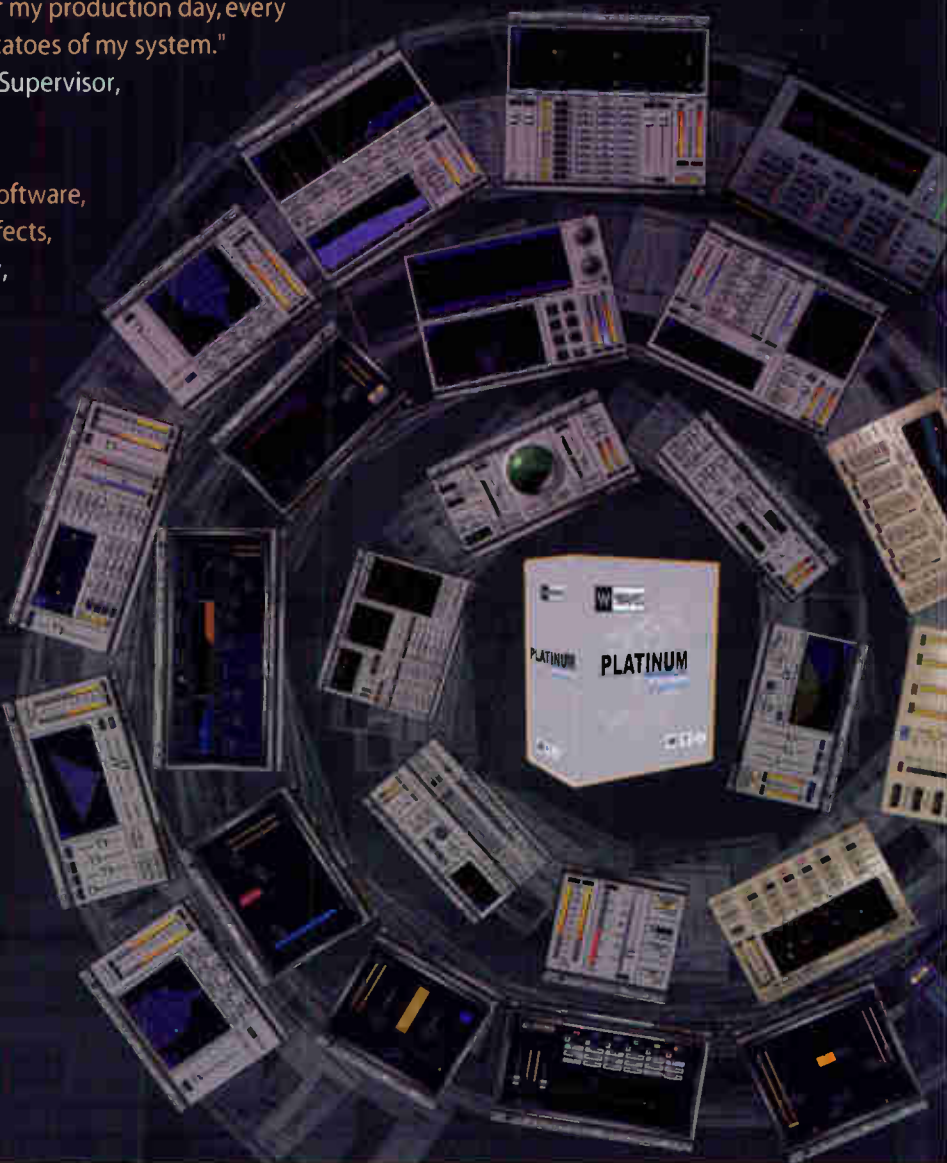
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count on it sounding like anything that you'll hear out there. You have two choices: You will either like it or not like it. But we can guarantee one thing: It's not going to sound like what's out there. We try to bring a lot of live musicianship to the music. A lot of grooves. We're Caribbean; we from *the islands*. Out of the music industry, I'd say we're the Caribbean producers of the world.

*Do you think being family brings an added bonus to working together? Kind of like "keeping it in the family"?*

They call us the "Haitian Sicilians," be-

cause we definitely family! Here's my brother, Sam, he's the lawyer; he handles that. Then there's Jerry's brother Renel; he handles the label stuff. We definitely keep it family-oriented.

*Do you and Jerry have a certain way of producing other artists? Or, is it similar to recording and producing your own releases?*

When we produce our stuff, we're cool. But when you're producing artists, you take the role of a psychiatrist—a musical psychiatrist. You have to work slowly with an artist to show them how to do it. It's

all about just doing the best music for the individual. That's what you're getting paid to do.

But our music is more rebel music. We do music for society, for humanity, to help and to heal. I don't do music so it's the Number One *Billboard* on a bullet all the time. We sold so many albums, and we gonna keep on selling, because that's just the way it is. We got the Platinum Sound formula.

*What's that formula?*

You gotta be born with it, baby. We walk with the lip, we talk with the slang. And we pretty. We pretty, baby. We move like Ali in his young days. We good with the jab, good with the stab.

*You guys have worked with artists who were just starting out. What was it like working with Destiny's Child and watching them explode on the music scene?*

We're fortunate enough to work with everybody when they're just getting started. And they come to us and say, "Clef, Jerry, could y'all give us a lift-off?" Working with Destiny's Child was incredible. We see the potential. In the line of work we are in, you can see who's gonna blow and who's not gonna blow. And what I loved about Beyonce and Kelly the most—when I worked with them in the studio—is their attitudes: humble, they laid back. And that's the attitude that determines how long you're really gonna last in this thing.

*How did you guys go ahead and produce them, especially because they're so vocal-oriented?*

It was definitely a unison thing. We were trying to find a style that would fit what we were trying to do: We had to come up with a song that would blow up.

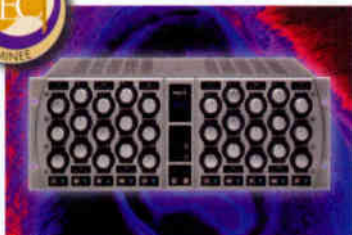
*A radio-friendly song.*

Yeah. So I had to make sure that the style was gonna fit. Beyonce sung the lead and they did backgrounds. That song was "No, No, No." The way we did their vocals was, individually, you stack harmony. "Okay, you go in there, do the alto note. Okay, that's great. Come back out. Do the soprano note." We recorded them on the SSL and used Neumann mics.

*What about any outboard gear, digital effects, synth programming?*

Well, that's my engineer. He's the master of effects, to the point where we like, "Yo, man, too much effects, dude. Keep my shit raw, man!" [Laughs] For outboard gear, I know we use a mix of classic and cutting-edge gear, including Eventide, AMS Neve, Lexicon, Avalon and Manley. *You're working in analog and digital. What do you like better?*

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PQ

Category: Signal Processing



MMC1

Category: Small Format Console

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It depends on what it is. I think for scoring, definitely digital. Reggae stuff, I like it analog.

*So was your approach to working with Destiny's Child the same as when you worked with Maya?*

No, it was a different approach for Maya. Nobody knew who she was. I got a call from Jimmy Iovine, and I was doing a record for Frye, and Jimmy was like, "Can you throw her on the hook?" At the time, she had a very soft voice, so my approach was definitely different with her. It was a real nice voice. I just made her feel comfortable and let her know that she can do it, like in *Waterboy*: "You can do it!" So she got in the booth and we started cutting her vocals. She was on a hook, so I had her sing it a few times and sampled back what we liked, and that was it. We used the SSL and had a 48-track. That was analog.

*What was it like working with Michael Jackson?*

He's cool with us. We got no beef with Mike. You mean, is he weird or something? *No, I mean, is he the King of Pop?*

Yeah. Without no doubt. He's definitely the King of Pop. People can talk about Michael Jackson as much as they want. But the minute Michael Jackson actually shows up and you see it's him, you're just like, "Oh shit, that's Michael Jackson!" You forget all that bullshit you said about him.

*So what is he like in the studio?*

He cool, he laid back. He talks to us. What I picked up on Michael Jackson—because I study people when I watch them—the way that he counts his rhythm with his feet and his neck at the same time is crazy.

*What do you mean?*

Well, you know you count with your feet—1,2,3,4—and that's one rhythm and then his neck is going in another rhythm. So he's hearing multiple things at once. And I don't know anybody who does that. Everyone usually moves in one pace.

*How did you end up doing "Maria, Maria" with Santana?*

Clive Davis sent us out there to work with him. He thought it would be a good combination. Basically, we wrote this song. And, once again, me and Jerry just sat down and started vibing it. I knew Carlos' background, so I wanted to do a song, "Maria, Maria," because of the movie *West Side Story*. It was cool being that he is Spanish. And we flew to Carlos Santana in San Francisco.

*I heard you are beginning to do some work in film scoring. Have you done anything recently?*

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Yeah, actually I have with [director] Jonathan Demme. I was scoring one of his documentaries, called *The Agronomist*, and he lost his studio. To the point where he said, "Do you guys have an Avid room? All I need is the Avid room and I won't go nowhere else." So then I went to Jer and was like, "Yo, we need some more room. We gotta get an editing suite in here." So, we did that. And then there's one of our movies—Independent Street movies—called *Shottas*. It's like a Jamaican-style *Reservoir Dogs*, coming out on DVD in April. The whole soundtrack and the DVD—the whole thing—we're doing it in our own studio. *How did you approach film scoring? Is it a different way of working for you from producing?*

We're from the Quincy Jones school. So it's more than just doing beats. When you score, it's more like you need some form of musical education to understand the point of view you're coming from. So if it's a scene and you're crying, I would probably attack that with strings: Strings bring forth emotions. When it comes to scoring, I'm like Alan Iverson on the basketball team. I'm not knocking no older composers, but it's like I can just see it and just do it. I don't really think about it. It shouldn't be that complicated. What you see is the emotion, and I think any complication takes away from what it really is.

*You are also the CEO of Clef Records. Any new artists you've recently signed?*

We got a lot of stuff coming out this year. We want to try to look out, because in the next seven years, we plan to just take over the whole industry. Clef Records is really eclectic. We have an artist by the name of Aisha from Texas. On Booga Basement, Jerry's label, we have City High. And right now, we're getting ready to sign a rock kid out in Wayne, New Jersey. Young blood; 20 years old. The last rocker out of Jersey was Bon Jovi, right? You haven't seen some new young blood. We also have an 18-year-old rapper that we signed. His name is Hollywood. We have a lot of different things. Just look out for the "R" logo, the Refugee Enterprise. That's what it's called now.

*Do you guys produce all of the artists you sign?*

We produce, and we have producers we work with. We have a kid named Teflon; he was signed to the Rough Riders. We also have another producer, Shay Taylor, and my little brother Sedek.

*Are there certain qualities that you*

*look for when you're bringing in new producers?*

Just whatever's the hot shit.

*Do you see any conflict between being the role of A&R, with developing and bringing on new artists, and being a creative producer?*

Yeah, you get conflicts all of the time. But you have to know how to play the chess game. We come with results, and we come with solutions. If you tell me this ain't gonna work because it won't play on black radio, for example, because it's not hard enough, then I think, "Well, 'Maria, Maria' played on black radio." We have records that can prove our theory makes sense if you just give it a try. If we didn't have any results, then the war would be on.

*In 2000, you pre-released "Diallo" off of The Eclectic album over the Internet. What are your thoughts on the rampant Internet file sharing?*

It hurts everything. It affects every artist. *Masquerade* was on the Net for like four months, five months before it came out. Right now, everyone's trying to see if they can come up with a code where they can prevent that from happening. I think the fans should definitely get music. A lot of times, they might look at artists and say, "They have millions of dollars, they don't have nothing to lose, so if we go and download a song, it's cool." The only thing I would say to a reader is, we work 24/7 so that we can make sure that we feed you some good music. But it's still work for us: That's what we do, that's our hustle. If you're going to get it, be courteous to us. Because probably when you're sleeping or getting up to go to school, that's when we're just leaving the studio, and we'll be gone for three hours and then come back and be working another 15 to 20 hours.

*So what lies in the future for you?*

I started on a series of my albums that will be coming out every six months. The idea is a continuation of where Bob Marley left off: rebel music. I picked up that whole vibe, and I'm moving toward the future with it: the vibe of Bob Marley, Jimi Hendrix, Curtis Mayfield, that type of thing. Because I'm a musician. I think that my duty is to put out music, so my next album is probably going to be the first all-melodic album. Look out for *Preacher's Son*. That's what it's called. You feel me?

*I feel you, Wyclef.*

*Sarah Benzuly is Mix's associate editor.*

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# 19TH ANNUAL TECHNICAL EXCELLENCE & CREATIVITY AWARDS

## 2003 VOTER'S GUIDE

Proceeds from the 19th Annual TEC Awards will be distributed to the following organizations:

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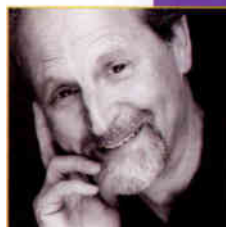
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The eligibility year is March 1, 2002 to April 1, 2003. Please note that the Creative Awards nominees are nominated by project. In each category the engineers, mixers, producers and production facilities will receive TEC Awards recognition. For Studio Design Project—please check our Web page at [www.mixfoundation.org](http://www.mixfoundation.org) for project photos and a description. Take time to read through each category before voting on the ballot. Please cast only one vote in each category.

## OUTSTANDING CREATIVE ACHIEVEMENTS

### A. STUDIO DESIGN PROJECT

*Includes Studio Architect, Acoustician and Studio Owner. Check [www.mixfoundation.org](http://www.mixfoundation.org) for studio photos and description.*

**Allaire Studios**, "The Great Hall," Shokan, NY  
Architect: Walters-Staryk Design Group  
Acoustician: John Storyk/George Augspurger  
Studio Owner: Randall Wallace

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Architect: Pilchner Schoustal International, Inc.  
Acoustician: Pilchner Schoustal International, Inc.  
Studio Owner: Gary Sloyer

**Hit Factory Studio 6**, New York City  
Acousticians: Troy Germano, Hit Factory/Dave Bell, Whitemark Ltd.  
Studio Owner: Troy Germano

**Mi Casa**, Hollywood  
Architect: Walters-Staryk Design Group  
Acousticians: John Storyk/Robert Margouleff  
Studio Owners: Robert Margouleff, Brant Biles

**NFL Films World Headquarters**, Mt. Laurel, NJ  
Architect: Robert G. Traub, AIA, Russ Berger Design Group  
Acoustician: Russ Berger, Russ Berger Design Group  
Studio Owner: NFL Films

### B. TELEVISION SOUND PRODUCTION

*Includes Supervising Sound Editor, Re-recording Mixer, Production Mixer and Audio Post Facility.*

**Alias**, ABC  
Supervising Sound Editor: Tam deGorter  
Re-recording Mixers: Robert Appere, Ed Carr  
Production Mixer: Douglas Axtell  
Audio Post Facility: Todd-AO Studios, Burbank, CA

**Austin City Limits**, PBS  
Supervising Sound Editor: David Hough  
Re-recording Mixer: David Hough  
Production Mixers: Sharon Cullen, David Hough  
Audio Post Facility: KLRU, Austin, TX

**Late Show With David Letterman**, CBS  
Supervising Sound Editors: Michael DeLugg, Jim Rose, Kevin Rogers, Harvey Goldber  
Re-recording Mixers: Michael DeLugg, Jim Rose, Kevin Rogers, Harvey Goldber, Pete Pellard, Tom Yang  
Production Mixers: Tom Herman, Larry Zinn, Gary Kiffel  
Audio Post Facility: Ed Sullivan Theater, NYC

**Six Feet Under**, HBO  
Supervising Sound Editors: Bob Newlan, Richard Taylor  
Re-recording Mixers: Harry Andranis, Chortie Essers, Elma Ponsdomenech, Joe Earle  
Audio Post Facility: Miles O' Fun, Burbank, CA

**24**, FOX  
Supervising Sound Editor: Bill Dotson  
Re-recording Mixers: Mike Olman, Ken Kobett  
Production Mixer: Bill Gocke  
Audio Post Facility: Soundstorm, Burbank, CA

### C. FILM SOUND PRODUCTION

*Includes Supervising Sound Editor, Sound Designer, Re-recording Mixer, Production Sound Mixer, Score Mixer and Audio Post Facility.*

**Chicago**  
Supervising Sound Editor: Maurice Schell  
Sound Designer: Maurice Schell  
Sound Editors: Eytan Mirsky, Richard Cirincione  
Re-recording Mixers: Michael Minkler, Dominic Travella  
Production Sound Mixer: David Lee  
Score Mixer: Dennis Sands  
Audio Post Facility: Sound One

**The Lord of the Rings: The Two Towers**  
Supervising Sound Editors: Mike Hopkins, Ethan van Der Ryn  
Sound Designers: David Farmer, Ethan van Der Ryn  
Re-recording Mixers: Chris Boyes, Michael Semanick  
Production Sound Mixer: Hammond Peek  
Score Mixers: Peter Cobbin, John Kurlander  
Audio Post Facility: The Film Unit-Wellington, New Zealand

**Minority Report**  
Supervising Sound Editors: Richard Hymns, Gary Rydstrom  
Sound Designer: Gary Rydstrom  
Re-recording Mixers: Gary Rydstrom, Andy Nelson  
Production Sound Mixer: Ronald Judkins  
Score Mixer: Shawn Murphy  
Audio Post Facility: Skywalker Sound, Fox

**Signs**  
Supervising Sound Editor: Richard King  
Sound Designer: Richard King  
Sound Editor: Richard King, Michael Mitchell  
Re-recording Mixers: Lee Dichter, Michael Semanick  
Production Sound Mixer: Todd Maitland  
Score Mixer: Shawn Murphy  
Audio Post Facility: Sound One

**Star Wars Episode II: Attack of the Clones**  
Supervising Sound Editors: Ben Burt, Matthew Wood  
Sound Designer: Ben Burt  
Re-recording Mixers: Gary Rydstrom, Michael Semanick, Rick Kline  
Production Sound Mixer: Paul "Salty" Brincat  
Score Mixer: Shawn Murphy  
Audio Post Facility: Skywalker Sound

### D. REMOTE PRODUCTION/RECORDING OR BROADCAST

*Includes Remote Engineer, Production Mixer, Music Mixer and Remote Facility.*

**An Evening With the Dixie Chicks, NBC**  
Remote Engineer: Gary Paczosa  
Production Mixer: J.D. Brill, Clair Brothers  
Music Mixer: Gary Paczosa  
Remote Facility: Le Mabile, Vista, CA

**45th Grammy Awards, CBS**  
Production Mixer: Ed Greene  
Music Mixers: John Harris, Jay Vicari, Randy Ezratty  
Remote Facility: Effanel Music, New York City

**The Rolling Stones Licks World Tour From Madison Square Garden, HBO**  
Remote Engineer: David Hewitt  
Production Mixer: Don Worsham  
Music Mixer: Ed Cherney  
Remote Facility: Remote Recording Services, Lahaska, PA

**Bruce Springsteen & the E Street Band, CBS**  
Remote Engineer: Albert Lecesse  
Production Mixer: Brendan O'Brien  
Music Mixer: John Cooper  
Remote Facility: Fleetwood Mabile, UK

**Standing in the Shadows of Motown**  
Remote Engineer: Kooster McAllister  
Production Mixer: Teddy Greenberg  
Music Mixer: Kooster McAllister  
Remote Facility: Record Plant Remote, Ringwood, NJ

### E. TOUR PRODUCTION

*Includes Tour Company, FOH Engineer and Monitor Engineer.*

**Peter Gabriel "Growing Up" Tour**  
Tour Company: AudioTek (ATK)/Firehouse Productions  
FOH Engineer: Jim Warren  
Monitor Engineer: Bryan Olsen

**Diana Krall "Look of Love" Tour**  
Tour Company: Rocky Mountain Sound  
FOH Engineer: Tony Romano  
Monitor Engineer: Tony Romano

**Paul McCartney "Back in the U.S." Tour**  
Tour Company: Showco  
FOH Engineer: Pablo Boothroyd  
Monitor Engineer: John Roden

**Bruce Springsteen "The Rising" Tour**  
Tour Company: Audio Analysts  
FOH Engineer: John Cooper  
Monitor Engineer: Manty Carlo and Troy Milner

**The Rolling Stones "The Licks" World Tour**  
Tour Company: db Sound  
FOH Engineer: Robbie McGrath  
Monitor Engineer: Chris Wade-Evans

### F. RECORD PRODUCTION/SINGLE OR TRACK

*Includes Recording Engineer, Mixing Engineer, Producer, Recording Studio, Mastering Engineer and Mastering Facility.*

**"A Thousand Miles," Be Not Nobody, Vanessa Carlton**, A&M Records  
Recording Engineers: Michael C. Ross, Tal Herzberg  
Mixing Engineer: Jack Joseph Puig  
Producer: Ron Fair  
Recording Studio: Record Plant, Hollywood  
Mastering Engineer: Eddy Schreyer  
Mastering Facility: Oasis Mastering, Studio City, CA

**"Complicated," Let Go, Avril Lavigne**, Arista  
Recording Engineer: The Matrix  
Mixing Engineer: Tom Lord-Alge  
Producer: The Matrix  
Recording Studio: Decoy Studios, Valley Village, CA  
Mastering Engineer: Leon Zervos  
Mastering Facility: Masterdisk, NYC

**"Hot in Herre," Nellyville, Nelly**, Universal Records  
Recording Engineer: Brian Garten  
Mixing Engineer: Rich Travali  
Producer: The Neptunes  
Recording Studio: Right Track Studios, The Hit Factory, NYC  
Mastering Engineer: Herb Powers  
Mastering Facility: The Hit Factory Mastering, NYC

**"Landslide," Home, Dixie Chicks**, Sony Entertainment  
Recording Engineer: Gary Paczosa  
Mixing Engineer: Gary Paczosa  
Producers: The Dixie Chicks, Lloyd Maines  
Recording Studio: Cedar Creek Recording, Austin, TX, Emerald Sound Studios, Nashville, TN  
Mastering Engineers: Daug Sax, Robert Hadley  
Mastering Facility: The Mastering Lab, Hollywood

**"Soak Up the Sun," C'mon, C'mon, Sheryl Crow**, A&M Records  
Recording Engineers: Trina Shoemaker, Dean Baskerville  
Mixing Engineer: Andy Wallace  
Producers: Sheryl Crow, Jeff Trott  
Recording Studios: Black Apple Studios, Portland, OR, Sunset Sound, Hollywood  
Mastering Engineer: Howie Weinberg  
Mastering Facility: Masterdisk, NYC

## G. RECORD PRODUCTION/ALBUM

*Includes Recording Engineer, Mixing Engineer, Producer, Recording Studio, Mastering Engineer and Mastering Facility.*

**C'mon, C'mon, Sheryl Crow, A&M Records**  
**Recording Engineer:** Trina Shoemaker  
**Mixing Engineers:** Andy Wallace, Jack Joseph Puig  
**Producer:** Sheryl Crow  
**Recording Studios:** Sunset Sound, Los Angeles, Clinton Recording, NYC, Avatar, NYC, Ocean Way, Nashville, Emerald Studios, Nashville, Black Apple Studios, Portland, Henson Studios, Los Angeles, Funny Bunny Studios, London, Sound Factory, Los Angeles, The Living Room, Los Angeles  
**Mastering Engineer:** Howie Weinberg  
**Mastering Facility:** Masterdisk, NYC

**Home, The Dixie Chicks, Sony Entertainment**  
**Recording Engineer:** Gary Paczosa  
**Mixing Engineer:** Gary Paczosa  
**Producers:** The Dixie Chick, Lloyd Maines  
**Recording Studios:** Cedar Creek Recording, Austin, TX, Emerald Sound Studios, Nashville, TN  
**Mastering Engineers:** Doug Sox, Robert Hadley  
**Mastering Facility:** The Mastering Lab, Hollywood, CA

**Live in Paris, Diana Krall**  
 A Universal Music Company  
**Recording Engineer:** Al Schmitt  
**Mixing Engineer:** Al Schmitt  
**Producer:** Tommy LiPuma  
**Recording Studios:** Paris Olympia, Avatar Studios, NYC, Capitol Studios, Los Angeles, RPM Studios, NYC  
**Mastering Engineers:** Doug Sox, Robert Hadley  
**Mastering Facility:** The Mastering Lab, Hollywood

**The Eminem Show, Eminem**  
 Aftermath Records  
**Recording Engineers:** Mauricio Iragorri, Steve King, Steve Boughman  
**Mixing Engineers:** Mauricio Iragorri, Steve King, Steve Boughman, Eminem, Dr. Dre  
**Producers:** Eminem, Dr. Dre, Jeff Bass  
**Recording Studios:** Encore Studios, Burbank, CA, 54 Sound, Marshall's House  
**Mastering Engineer:** Brian Gardner  
**Mastering Facility:** Bernie Grundman Mastering, Hollywood

**The Rising, Bruce Springsteen**  
 Columbia Records  
**Recording Engineer:** Nick Didia  
**Mixing Engineer:** Brendan O'Brien  
**Producer:** Brendan O'Brien  
**Recording Studio:** Southern Tracks Recording, Atlanta  
**Mastering Engineer:** Bob Ludwig  
**Mastering Facility:** Gateway Mastering & DVD, Portland, ME

## OUTSTANDING TECHNICAL ACHIEVEMENTS

### A. ANCILLARY EQUIPMENT

**AKG K271 Studio Headphones:** The successor to AKG's classic K240 studio headphones, the K271 Studio is a circumaural, closed-back design. It features 1.2-inch drivers with patented XXL Varimotion technology that creates diaphragms of varying thickness: thinner around the outside for improved LF tracking and a thicker center for accurate MF/HF response. Other improvements include a detachable cable with a secure mini-XLR connection.

**Little Labs IBP Analog Phase-Alignment Tool (rev 2.0):** Designed to help engineers effectively eliminate the undesirable hollow sound when combining out-of-phase and partially out-of-phase audio signals, IBP lets users put an audio signal in phase, when the mixing desk's Polarity button will not. Whether combining direct and miked signals, tom-tom mics, multiple split-guitar amps, top/bottom snare, or

solving the classic acoustic guitar/vocal mic phase problem, Little Labs' IBP analog phase-alignment tool puts audio signals in phase quickly and easily.

**Martinsound MultiMAX EXR:** The audio industry standard for Surround Monitor Control, MultiMAX EXR offers all of the features of the popular MultiMAX EX with all functions accessible on the bundled remote control. MultiMAX EXR has applications in any surround sound production environment, for post-production, television, film and music. Features include up to five 8-channel-wide audio inputs, speaker outputs for up to four systems, extensive downmix capabilities and speaker system calibration.

**SIA Software SmaartLive Version 5:** This dual-channel, FFT-based audio measurement software for Windows PCs has become the professional audio industry standard for real-time sound system measurement, optimization and control. SmaartLive software combines powerful audio frequency measurement, analysis and data-logging capability with a highly intuitive, user-friendly interface, and the ability to remotely control an extensive list of top-name equalizers and DSP processors.

**Tascam DS-M7.1 Surround Controller:** Designed for surround production suites equipped with a digital console, the DS-M7.1 adds multi-speaker monitoring control to any digital consoles with eight output buses. The DS-M7.1 duplicates the digital output buses of digital consoles and then routes the signal to both a stem recorder and your monitoring system. The DS-M7.1 supports surround formats from LCRS up to 7.1, with the ability to downmix from any surround format to any other.

**z-Sys z-256.256r Digital Detangler:** The z-256.256r Detangler Pro™ lets studios and post facilities seamlessly integrate/reconfigure their digital audio workplace, eliminating wire tangle and confusion—think of it as digital patchbay. Modular in increments of 32x32, the unit accommodates up to 256 stereo/2-channel inputs, routed in any combination to 256 stereo/2-channel outs. Asynchronous design enables sources or destinations at any bit rate/word length, up to 24-bit AES/EBU or S/PDIF format and sampling rates to 192 kHz and beyond.

### B. DIGITAL CONVERTERS

**Apogee Mini-Me:** Along with legendary Apogee conversion, this compact, portable, 2-channel, 24/96k A/D converter offers two high-quality mic/instrument preamps, USB connectivity, "PushIt" (Apogee's proprietary 3-stage compression for maximum digital level without overs) and UV22HR word length reduction. Other I/O options include AES/EBU, S/PDIF and two XLR/1/4-inch inputs. Mini-Me provides an excellent solution for audio professionals, musicians, and engineers who require uncompromised quality on location, on the road or in the studio.

**Benchmark Media DAC1:** This 2-channel, 24-bit/96kHz D/A converter features total jitter immunity and a 117dBa S/N ratio. The DAC1 has an auto-detecting input sample range of 28 to 96 kHz, and UltraLock™ technology provides totally jitter-free conversion at any sample rate and with any degree of input jitter. Digital inputs are AES, S/PDIF and Toslink; analog outs are balanced XLR and unbalanced RCA.

**Digital Audio Denmark ADDA 2408:** The ADDA 2408 is a professional, 8-channel, 96kHz A/D, D/A, and D/D sample-rate/format converter, with a built-in 8x2 monitor mixer and eight high-quality mic preamps with adjustable delay and analog gain adjustments in 3dB increments. All main functions can be remote controlled via RS-422. A variety of digital I/O expansion cards can be added to the unit including AES, TDIF, ADAT, Pro Tools Mix 24, and S/PDIF.

## Dolby DP564 Multichannel Audio

**Decoder:** Dolby's next-generation reference decoder for DVD authoring, post-production and DTV applications, the DP564 decodes and monitors Dolby® Digital, Dolby Surround and PCM (as well as Dolby Digital Surround EX™ and Dolby Surround Pro Logic® II). Features include AES and optical inputs, linear time-code output, Ethernet port for streaming and remote control, and Dolby Headphone processor. Its large display and front-panel controls allow for easy setup, metering and direct access to all monitor modes.

**ProSonus FireStation:** Incorporating Yamaha's mLAN FireWire protocol, FireStation accommodates hundreds of audio/MIDI channels on one network connection, compatible with many Mac/PC programs. Features: Eight analog I/O channels, 8-channel ADAT and S/PDIF I/O, and integrated 10-channel analog mixer. In addition, FireStation has two dual-servo preamps, a switchable "Tube" circuit, two 1/4-inch instrument inputs, control room and headphone outs, and BNC wordclock I/O. It's expandable to 48 I/O channels.

**RME ADI-648 MADI/ADAT Converter:** RME's ADI-648 offers format conversion from MADI/ADAT and vice-versa. MADI offers 64 channels of 24/48 audio and 32 channels of 24/96. Transmission is over a single coaxial (BNC) or fiber-optic line. Cable lengths can be more than 100 meters. Furthermore, the ADI-648 is a configurable, 8-channel, 16x16 Matrix Router. All outputs are divided into eight channel blocks and can be fed from any 8-channel input block on the ADAT and MADI side.

### C. AMPLIFIER TECHNOLOGY

**Carver Pro ZR Series:** Carver Professional's ultra-efficient ZR Series utilizes the Tripath™ IC to achieve as much as 81% efficiency in a lightweight package backed by a five-year warranty. Imagine the benefits of this high efficiency: The low current draw allows multiple amps to work from a single 20-amp circuit, with as much as a 45% electricity savings over typical Class-H amps.

**Crest Pro200 Series:** Crest Audio's Pro200 Series professional power amps offer its renowned sonic integrity and can handle exceptionally high power ratings (up to 4,500 watts bridged) in a compact, lightweight, 25-pound, 2RU package. The Pro200 Series amps also feature Automatic Clip Limiting (ACL) to protect connected drivers; IGM Impedance Sensing to accommodate varying impedance outputs; tunnel-cooled, high-efficiency heat sinks; and variable-speed DC fans to limit the operating temperature and extend amplifier life.

**Crown CTs Series 2-Channel Ethernet Digital Interface Amplifier:** Crown's CTs 2-channel amps offer new flexibility and value, with power levels and features chosen to perfectly integrate into fixed-install design requirements. For fast Ethernet communications, optional IQ-PIP modules connect CTs amplifiers to a system-wide audio network. Crown's "Single-Click" solution simplifies the installation by combining CobraNet™ digital audio, control and monitoring on the same 100Mb Ethernet network, operated by one simple use and a free software package, "IQwic."

**Hot House Model Six Hundred High-Resolution Control Room Amplifier:** Fully differential from input to output, and utilizing a split-dual toroidal power supply, this third-generation amp's radical new design results in the most transparent, lowest distortion, highest fidelity, yet most bullet-proof pro amp ever built. The elegantly simple, uncluttered design sidesteps sonically degrading traditional external thermal bias and protection circuits, affording the benefits of pure Class-A, zero-feedback operation without the drawbacks—reducing heat, eliminating crossover distortion and providing extreme output linearity with rock-solid stability.

**Martin Audio MA 4.2s:** Combining reliability and high-power output with sonic accuracy, the MA Series feature a high power-to-weight ratio in a light-weight, 2U package. For example, the MA4.2S delivers 2,300 watts stereo at 4 ohms and only weighs 22 pounds—more than 100 watts per pound. The MA Series include the MA1.3S (650W into 4 ohms stereo), MA1.6S (840W into 4 ohms stereo), MA2.8S (1,400W into 4 ohms stereo) and MA4.2S (2,300W into 4 ohms stereo).

**QSC PowerLight 6.0 II:** Fed by QSC's PowerWave™ switching power-supply technology, the PowerLight 6.0 II power amplifier features superior audio performance and outstanding thermal capacity. The PL6.0 II boasts selectable clip limiters for lowering distortion and speaker protection, plus a Standby mode for remote AC control. The amp's rear-panel DataPort facilitates integration into the QSCControl network audio system, as well as the inclusion of DSP modules such as the DSP-4 crossover/EQ/delay/attenuator/limiter.

#### D. MIC PREAMPLIFIER TECHNOLOGY

**Daking Mic Pre/EQ:** Patterned after the rare, highly valued EQ circuitry of Trident's A-range consoles, the Daking Mic Pre/EQ employs all-discrete transistor circuitry and transformer-balanced I/Os, plus an outboard power supply. Five well-chosen stepped frequencies and "out" choices per band are selectable with continuously variable boost/cut available at all frequencies. The Daking Mic Pre/EQ is essentially a reborn A-range without all of the repair and restoration required to fix the worn-out switches and capacitors.

**Digidesign PRE:** Featuring eight discrete, matched transistor hybrid mic-preamp circuits, PRE offers a pristine signal path designed specifically for the Pro Tools IHD environment. PRE accepts nearly any input signal, easily accommodating mic, line and direct instrument (DI) inputs on all eight channels. Comprehensive remote-controllable operation via the Pro Tools software interface or Digidesign control surfaces lets users place PRE anywhere in the studio. In addition, PRE also functions exceptionally well as a stand alone unit.

**Focusrite ISA 428 Prepack:** Combining eight channels of no-compromise 192kHz ADCs with Focusrite's classic ISA sound, the 428 features: four transformer-based mic preamps with switchable impedance (for optimum mic matching) direct instrument inputs comprehensive metering (VU and dBfs digital) analog insert points on every channel and ISA series highpass filters. Additionally, an optical Soft Limiter circuit provides absolute protection of the ADC with minimized distortion artifacts for the perfect direct path into any DAW, digital console or digital recorder.

**Grace Lunatoc V3:** This portable, DC-powered, 2-channel mic preamp with high-definition A/D converters is designed for demanding audio engineers requiring high-fidelity audio performance in a bombproof, compact package. Standard features include: 24-bit/192kHz A/D conversion, ANSR™ analog noise-shaping dither circuit, highpass filters and built-in MS decoding matrix. The Lunatoc V3 uses the same fast, musical trans-impedance amplifier architecture as the rest of the Grace Design line.

**Summit 2BA-221 Mic/Line Module:** This combination mic preamp/direct box features: variable (100 to 10k ohm) mic input impedance; a variable highpass filter; hi-Z and mic inputs available simultaneously with gain controls for each; separate solid state and 12AX7A/ECC83 tube outputs; TRS insert jack; polarity switch; 20dB pad; internal high-voltage power supply; and XLR and 1/4-inch I/O.

**Universal Audio 6176:** The 6176 combines UA's acclaimed 610 tube mic preamp with its legendary 1176LN compressor, creating the ultimate signal path. The mic preamp sections maintain the quality and character of the 2-610, while adding a pad switch

and high-tension power regulation for improved LF. Possibly the most loved compressor in history, the 1176LN's trademark lightning-quick attack and release times and the tone of its Class-A output amp have enhanced countless recordings during the past years.

#### E. MICROPHONE TECHNOLOGY/SOUND REINFORCEMENT

**AKG CS 2:** This multistation, modular conference system is expandable up to 200 mic stations. Each station has integrated speakers and headphone jacks and a gooseneck mic that's push-to-talk or voice-activated. Stations can be configured for installed or portable use and customized with two different goosenecks and five different mic capsules. Mic sensitivity, input priority and number of open mics can also be customized.

**Audio-Technica AE2500 Dual-Element Cardioid Kick Drum Microphone:** Designed for engineers searching for the ideal balance between the round tones of the shell and the attack of the beater, Audio-Technica developed the unique AE2500 kick drum mic. The AE2500's custom dual elements—condenser and dynamic—were positioned to be in perfect phase, something practically unachievable with two separate mics. Response to the AE2500 has been overwhelming, making it again clear that Audio-Technica's Artist Elite® Series truly responds to the needs of industry professionals.

**Audix D6:** The latest addition to Audix D Series, the D6 large-format dynamic kick drum mic has a cardioid pattern and a 30 to 16k Hz response. With its pre-emphasized 80Hz LF boost, the D6 will not disappoint anyone looking for a huge, clean, undistorted kick sound, and it sounds great on any size kick drum. With the D6, the D Series is now a complete solution for all professional drum-miking applications.

**Electro-Voice RE510:** This supercardioid handheld condenser features a smooth bandwidth, low distortion, wide dynamic range and LF boost switch under the ball screen for live vocals or studio use. The roll-off configuration compensates for proximity effect, while upper-mid frequencies offer clear and natural response. In Studio mode, the low-end response is lifted, creating a versatile instrument mic.

**Shure SM86:** This condenser vocal mic for pro live performance use is extremely rugged, withstanding the rigors of touring while delivering studio-quality sound, with a tailored response that reproduces vocals with clarity. Its cardioid pattern isolates the sound source while minimizing background noise. The built-in, 3-point shockmount cuts handling noise, and a two-stage pop filter reduces wind noise and breath pops. The SM86 is an excellent choice with both stage monitors and personal in-ear monitors.

**Sony ECM88:** Ideally suited for applications in broadcasting, theater and field production, the ECM88 miniature omnidirectional electret-condenser mic offers extremely low handling noise with unparalleled high sound quality—all in a water-resistant design. The ECM-88 has a Sony 4-pin connector to connect with wireless transmitters. A pigtail version (ECM-88PT) and a beige (ECM-88FPT) version are also available, as well as a DC power-supply unit containing a XLR 3-pin output connector.

#### F. MICROPHONE TECHNOLOGY/STUDIO

**AEA R84:** One of the most versatile studio mics available, the R84's natural sound sits well in the mix on vocals, acoustic instruments and guitar and boss cabinets. Optimized for close-miking, the R84 has a smooth 20kHz high end, an articulate midrange and 20Hz bass with a well-controlled proximity rise. Inspired by our classic high-output R44, the R84 is a large-ribbon geometry design capable of handling high SPL.

**Audio-Technica AT4040:** Combining technical precision with artistic inspiration, the AT4040 cardioid condenser features an advanced large-diaphragm specifically tensioned to provide smooth, natural sonic characteristics, with exceptionally low noise, wide dynamic range and high-SPL capability. Its low-noise circuitry is symmetrical and transformerless, resulting in exceptional transient response and clean output signals. With its consistent performance, optimal sensitivity and renowned 40 Series reliability, the AT4040 is a versatile tool for any studio's mic locker.

**BLUE Baby Bottle:** Part of BLUE Microphones' award-winning line of microphones, the Baby Bottle is a cardioid condenser mic featuring BLUE's unique capsule design, Class-A discrete electronics, and famous handcrafted quality. Ideal for recording vocals, percussion and acoustic instruments, the Baby Bottle comes with a mic clip, cherry wood box and velvet bag. The stunning pop/shockmount kit is optional.

**Brauner Phantom-C:** The Phantom-C is the first nontube (FET), large-diaphragm mic from German microphone builder, Dirk Brauner. Engineered for big, "up close and personal" lead vocals and voice-over applications, the Phantom-C delivers the characteristic transparency and highly detailed sound of Brauner's high-end tube microphones. The Phantom-C is a cardioid FET condenser with 8dBa self-noise, 28mV/Pa cardioid sensitivity and 142dB max SPL at 0.5% THD and includes carry case and shockmount.

**Neumann Solution-D:** Neumann developed the technology for the Solution-D digital microphone system from the ground up, resulting in a proprietary A/D conversion process, the widest dynamic range of any digital microphone available (>130 dB) and incorporating the recently minted AES 42-2001 digital microphone interface standard. A new capsule designed specifically for this mic exhibits an extended HF range and uniform polar pattern control, while presenting an ideal load to the digital converter.

**Telefunken Ela-M 251:** One of the greatest mics ever made, the Ela-M 251 needs no introduction, and Telefunken USA has brought it back into production. The approach? No compromises, built in the old-world tradition of meticulous hand assembly by skilled technicians in the USA. Where possible, original suppliers are used to source components, from the Mylar of the diaphragm to the output transformer. Other components were reverse-engineered to original Austrian specs. The result is the legendary Telefunken Ela-M 251.

#### G. WIRELESS TECHNOLOGY

**AKG WMS40 Diversity:** This fixed-frequency diversity UHF wireless system offers excellent performance at a modest price. Receivers include the SR4ODIV all-metal, half-rack model and the PR40 portable that's smaller than a cigarette pack. System transmitters include the HT40 handheld (with the DB80 Emotion capsule); the PT40 body pack; the GB40 Guitarbug instrument transmitter; the MP40 micropen integrated transmitter/lavalier mic; and the SO40, a snap-on unit for use with standard dynamic microphones.

**Audio-Technica Artist Elite 5000 Series:** The 5000 Series includes a full-track dual receiver and comes in 13 configurations, with choices of four handheld transmitters or the UniPak™ body pack. Link the 5000 Series to other system receivers and monitor/control system parameters using the included Windows-compatible software. Features such as true-diversity operation, dual-companion circuitry, advanced digital Tone Lock™ squealch and IntelliScan™ for automatically setting frequencies on linked receivers ensure the best sound quality and interference-free operation.

# Personal Monitor Mixing

16 Channels • 16 User Presets • Unlimited Expansion • Easy



**Carl Cadden-James - Angel Mountain Studios**

As Chief Engineer for a state-of-the-art music and production studio, Carl Cadden-James needs a cue system that is both flexible and expandable. "The A-16 is so easy to set up and use that it gives me more time to concentrate on creating a great-sounding recording."



**Andy Himmelwright - Calvary Temple**

"Since adding the A-16 system, we have lowered the stage volume substantially, and the performance is more musical. The A-16 monitor mixes sound great. And, the congregation really notices the improvement in audio fidelity."



**Jay Davidson - 76ers Houseband**

The 76ers Houseband rocks the NBA, having played at over 300 home games. "Using the system frees our engineer to concentrate on FOH sound. The fact that the A-16 delivers multiple discrete stereo mixes – all end user controllable – enables us to kick our performances up a notch or two!"

[www.AVIOM.com](http://www.AVIOM.com)



**AVIOM**<sup>TM</sup>  
To Each His Own

**Electro-Voice CDR-1000:** Designed for pro touring and large theater productions, the CDR-1000 RE-1 is a wireless UHF, dual receiver in a full-rack width package, with integrated internal power supply. Features include real-time PC monitoring/control via USB and 24 receivers can be integrated to operate from just two antennas and one distribution splitter. Various transmitters are available.

**Sennheiser SKM5000-N/KK105S:** The combination of award-winning Sennheiser wireless transmission and coveted Neumann vocal reproduction makes this wireless system unique in the vast world of microphones. The updated SKM5000-N transmitter is optimized for the wider dynamic range of the Neumann KK105-S capsule. This, together with a lower noise floor, allows for the transmission of studio-quality vocal sound even in the most demanding live performance or broadcast environments.

**Tolex SAFE-1000:** This Secure Audio Frequency Encryption (SAFE) UHF wireless system is designed to meet the needs of courtrooms, boardrooms, conference centers, government offices or other high-security locations requiring secure wireless communications. Features include Advanced ClearScan Auto Channel Select and 950-channel frequency agility, combined with second-generation encryption.

**Zaxcom Digital Wireless:** Zaxcom has opened a whole new world of performance to the television and film industry by introducing the first fully digital wireless microphone system. Its units use no compressing or data compression to achieve sound quality equivalent to a hard-wired microphone. There are now six transmitters to choose from, including the Spy II (measuring only 1.5x2.5 inches) and the Handheld Digital Wireless microphone for performance and stage use.

## H. SOUND REINFORCEMENT LOUDSPEAKER TECHNOLOGY

**dbx Driverack 260:** Designed to provide "everything between the mixer and the amplifiers," DriveRack<sup>®</sup> 260 offers a 2x6 routing matrix with full bandpass, crossover and EQ filtering. In addition, the 260 offers multiple DSP inserts with selectable processing and 2.7 seconds of delay. It also provides complete control, from the front-panel display and a PC GUI to optional wall panel controllers. With a full complement of processing and control features, DriveRack 260 is truly "the" system controller.

**Electro-Voice XLC:** The XLC compact line-array system has three components: The XLC 127 is a 3-way design with 12-inch LF, dual 6.5-inch mids on a 120° horizontal waveguide, and twin HF drivers combined via a new vertical plane wave generator to a 120° waveguide. The system can be triamped or biamped. The XLC 127+ main is similar to the XLC 127 with the exception of a different driver. The 18-inch-loaded XLC 118 sub provides solid bass extension.

**JBL VerTec VT4887:** JBL's VT4887, a compact loudspeaker for use in articulating line arrays, is a bi-amplified, three-way system fitted with JBL's Neodymium Differential Drive NDD™ components. At only 62 pounds, this lightweight, powerful array element is fully compatible with other VerTec™ systems. It has already been specified for premier applications like Peter Gabriel's USA tour (ATK), the Tony Awards at Radio City (ProMix), GM's USA dealer business conferences (OSA) and Walt Disney Concert Hall (Pro Sound).

**Lake Contour:** The Lake Contour digital loudspeaker processor provides a wealth of innovative features, including new methods of graphic and parametric equalization (introducing Ideal Graphic EQ and the Mesa Filter), linear phase brickwall crossovers and true-RMS limiting. Utilizing a touchscreen and wireless Ethernet connectivity, the Contour Controller provides centralized control to an unlimited number of Contour processors. Instant adjustments can be made to any processor (or group of processors) on the network, from any seat in the house.

**Meyer M2D:** The Meyer Sound M2D compact curvilinear array loudspeaker brings numerous advantages to mid-size venues that require tight vertical pattern control with long throw. Pioneered by Meyer Sound in the early 1980s, horizontal curvilinear arrays composed of trapezoidal cabinets have been an industry standard for decades. The M2D extends the concept to vertical (line) arrays, enabling flexibility to tailor vertical coverage by varying the number and splay of cabinets in the array while maintaining a constant 90° of horizontal coverage.

**Nexo Geo-T:** Designed for vertical or horizontal arrays, Geo-T is based on Nexo's T4805 and T2820 full-range, high-output loudspeakers and a new dual-18 Controlled Directivity Sub Bass in a scalable system that handles audiences from 1,000 to 100,000-plus. The full-range boxes both use 2-inch HF and 8-inch cone mid/lows, with a Hyperboloid Reflective Wavesource acoustical reflector for coherent coupling between multiple speakers, even those with different dispersion angles.

## I. STUDIO MONITOR TECHNOLOGY

**ADAM Audio S2.5A:** The ADAM S2.5-A is a two-way, active monitor utilizing unique state-of-the-art materials and technology to provide exceptional imaging and extraordinary sonic detail. The S2-A was primarily designed for high-end recording/monitoring environments in a near-field application where deeper bass is a primary concern; however, they are also an excellent choice for project studios. The S2.5-A is one of ADAM's most ideally suited models for use in a 5.1 surround system.

**Blue Sky ProDesk 2.1:** ProDesk™ is the first truly full-range monitoring system specifically designed for critical mixing and monitoring on the desktop. ProDesk brings the desktop user the same spectral performance as last year's TEC-nominated Sky System One, with the only compromise being less output. ProDesk is the logical evolution of Blue Sky's 2.1-integrated three-way concept and when used with Blue Sky's BMC controller, can also offer an extremely high-performance 5.1 solution for desktop applications.

**Dynaudio Acoustics AIR 20:** The AIR 20 offers transparency, consistent speaker performance and outstanding possibilities for optimizing performance in different acoustical environments. The AIR 20 is developed for both stereo and multichannel monitoring in demanding production environments. Combining technology from Dynaudio and TC Electronic, AIR 20 offers ultimate precision and sound. The possibility of rotating the mid-high module provides the flexibility for optimal placement in a wide range of applications.

**Genelec 7070A Active Multichannel Sub:** The 7070A active subwoofer is a powerful and precise monitoring tool for surround sound or traditional stereo systems. The 7070A features Genelec's new Laminar Spiral Enclosure™ technology. The gently curved, sheet-metal enclosure offers excellent structural stiffness of a very long reflex tube into a small space. With its 19Hz lower cut-off frequency, high-SPL output, ultralow distortion and versatile 6.1-channel bass management circuitry, the 7070A can be adapted to all low-frequency monitoring situations.

**Mackie HR626:** The 140-watt, THX PM3-certified HR626 features a high-frequency waveguide-loaded 1-inch dome tweeter with dual 6.7-inch low-frequency drivers that work in partnership with Mackie's signature rear-firing passive transducer to provide bass extension to 40 Hz. It's the first professional active studio monitor to employ the D'Appalito driver-alignment design, which provides outstanding bottom end coupled with pinpoint low-level accuracy of the midrange—the essential component for establishing vocal placement within a mix.

**Westlake Audio BBSM-6:** The BBSM-6 now houses dual 6.5-inch polypropylene woofers with dynamic damping, a 3.5-inch cone midrange and a 1-inch soft-dome tweeter in a symmetrically designed cabinet that eliminates the need for dedicated left/right units. The extremely well-damped cabinet measures 11x22x13 inches (HxWxD) and weighs in at a hefty 68 pounds. The system has a rated frequency response of 60Hz-20kHz, a sensitivity rating of 91dB at 2.83V input and power handling of 275W peak, 100W continuous.

## J. MUSICAL INSTRUMENT TECHNOLOGY

**Line 6 PODxt:** The PODxt delivers awesome guitar tone using a revolutionary DSP platform with 32 amplifier models, 22 cab models and several mic models for home/studio recording as well as live performance. PODxt also features over 45 models of sought-after stompbox and studio effects, including reverbs, compressors, choruses, flangers, delays, distortion, rotary and more.

**Moog Music Voyager:** The minimoog<sup>®</sup> Voyager™ is an analog performance synthesizer designed by the legendary Bob Moog. Its state-of-the-art design captures the unmatched, fat, warm Moog™ sound and brings it into the 21st Century. Playing the Voyager is a visceral experience, from its mind-bending sound to the fantastic-feeling knobs and switches to the fun of the 3-D touch-surface controller. Serious players worldwide are reveling in the luxury of the Voyager.

**Propellerhead Software Reason 2.0:** The update adds the Malström Wavetable Synthesizer, combining granular and wavetable synthesis, and offers a variety of filters and two modulators/LFOs. Also new in Reason 2.0 is the NNXT Advanced Sampler; enhanced sequencer features; the Orkester NNXT Sound Library (orchestral samples from single woodwinds to full string sections); and Windows XP and Mac OS X support.

**Roger Linn Design AdrenaLinn:** AdrenaLinn introduces Beat-Synched Effects: a variety of classic and new modulation effects—tremolo, flanging, random filtering and more, including programmable sequences of filtered tones or arpeggios—that play in perfect sync to an internal programmable drum machine or to MIDI. AdrenaLinn also includes superb guitar amp-modeling, classic filter effects like auto-wah and voice box, and the ability to design your own effects by freely connecting modulation sources to a variety of filter types.

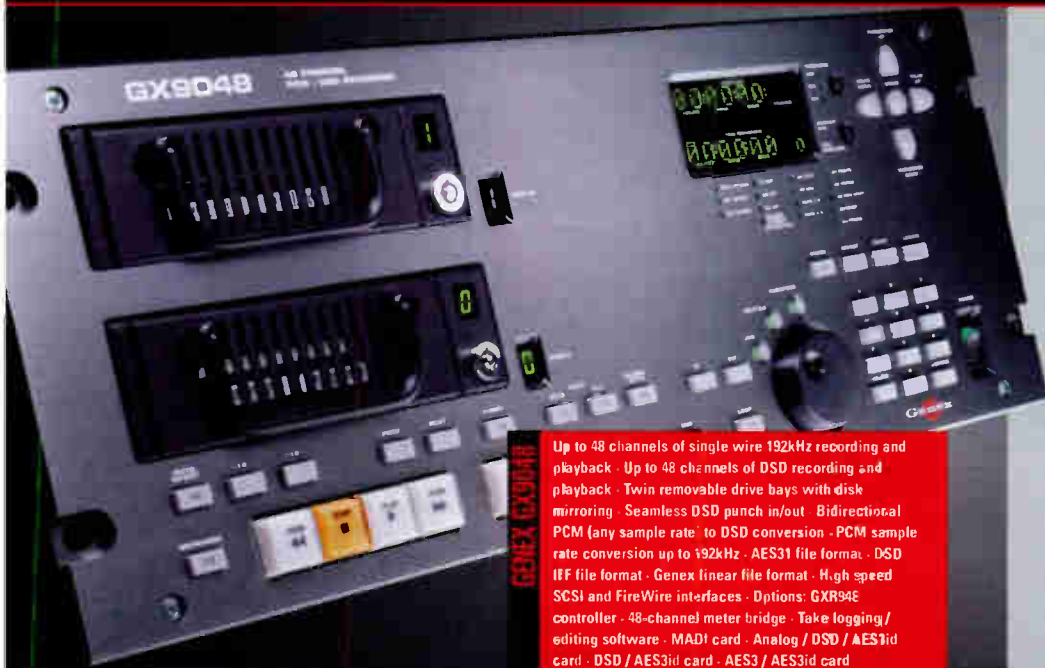
**Roland V-Synth:** The Roland V-Synth opens up a world of new sounds that are full of life and motion. Imagine a synth that combines multiple oscillator technologies with real-time control of a waveform's pitch, time and formant. Now add user sampling to create entirely new waveforms, powerful COSM filtering, a killer arpeggiator and a host of real-time controllers, including the revolutionary TimeTrip Pad. That's Roland V-Synth: a distinctive new instrument set to inspire those passionate about sound.

**Vienna Symphonic Library:** The Vienna Symphonic Library is the most ambitious sample library ever conceived, played by top musicians from Vienna's world-renowned orchestras. This massive, ever-expanding treasury of strings, brass, woodwinds and percussion was captured with pioneering recording technology in a specially constructed, ultraquiet sound stage. When paired with its exclusive Performance Tool, a suite of MIDI utilities developed by the Vienna Symphonic Library, the user can create fluid, realistically articulated passages with a realism never before possible.



# Up to 48 channels. 192kHz. DSD.

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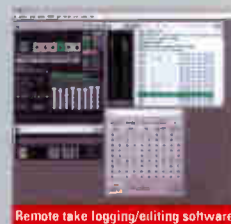


Up to 48 channels of single wire 192kHz recording and playback - Up to 48 channels of DSD recording and playback - Twin removable drive bays with disk mirroring - Seamless DSD punch in/out - Bidirectional PCM (any sample rate) to DSD conversion - PCM sample rate conversion up to 192kHz - AES31 file format - DSD IFF file format - Genex linear file format - High speed SCSI and FireWire interfaces - Options: GXR94E controller - 48-channel meter bridge - Take logging / editing software - MADI card - Analog / DSD / AES3id card - DSD / AES3id card - AES3 / AES3id card



8 channels of single wire 192kHz recording and playback - 8 channels of DSD recording and playback - Twin removable drive bays with disk mirroring - Seamless DSD punch in/out - Bidirectional PCM (any sample rate) to DSD conversion - PCM sample rate conversion up to 192kHz - AES31 file format - DSD IFF file format - Genex linear file format - High speed SCSI and FireWire interfaces - Options: Take logging / editing software - MADI card - Analog / DSD / AES3id card - DSD / AES3id card - AES3 / AES3id card

Once again, Genex sets the standard for digital audio recording. The new GX9000 and GX9048 are the first and only recorders to combine both single wire 24-bit / 192kHz PCM and DSD recording in a single unit. Data is written simultaneously to twin removable drives saving valuable post-session copy time, while recording in industry-standard AES31 and DSD IFF file formats enables instant interchange



with popular workstations. Seamless DSD punch in / out (another Genex first) delivers all the post production flexibility you're used to with conventional formats and both recorders feature bidirectional sample rate conversion between PCM and DSD. So no matter how you work now – or in the future – only one manufacturer gives you the best of both worlds. Genex.

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## K. SIGNAL PROCESSING TECHNOLOGY/HARDWARE

**Cedar DNS2000 for Pro Tools:** The DNS2000™ is a fully automated implementation of Cedar's TEC Award-nominated DNS technology, designed specifically for Pro Tools users. With near-zero latency and an intuitive user interface, the DNS2000 eliminates traffic noise, aircraft, air conditioning, wind, rain, tape hiss and general background noise from recordings and live transmissions. It helps remove motor noise from small covert recorders, eliminates electrical interference, compensates for unfavorable acoustic conditions and poor mic placement, and will even suppress excessive reverberation.

**Lexicon MPX 500:** This true-stereo, dual-channel processor with 24-bit internal processing, 24-bit AD/DA and S/PDIF I/O, and Lexicon's exclusive Lexichip™ offers 255 carefully crafted presets with legendary Lexicon reverbs, effects and dynamics. Four Edit knobs and parameter-adjustment graphics make it simple to dial in the desired sound. Other features include a large, graphic front-panel display, a built-in digital compressor, Tap Tempo and MIDI Learn mode.

**Manley SLAM!:** SLAM! stands for "Stereo Limiter And Micpre" and it pretty much describes what it will do to most VU meters. It'll get loud fast (hence the exclamation mark). Besides being an amazing pair of stereo FET and ELOP limiters, and Class-A tube mic preamps, it also has master's degrees in DI, A/D, D/A, VU and PPM, but that was too much for an acronym. The SLAM! represents the most elaborate and ambitious product ever from Manley.

**SPL PQ Mastering EQ 2050:** The dual-channel PQ features five bands of fully analog, discrete Class-A parametric EQ plus full recall and band/channel sync. Each band overlaps its neighbor by one octave and offers selectable proportional and constant Q. Up to five PQs can be synchronized and controlled with an optional remote-control unit. SPL's SUPRA op-amps with 120-volt internal operating voltage ensure outstanding dynamic range, headroom, bandwidth and audio purity. Users include Media Ventures, Arch Angel and Crystalphonic studios.

**Summit TLA-50 Tube-Leveling Amplifier:** The TLA-50 Tube Leveler offers Summit soft-knee leveling in a small, inexpensive package that provides tube warmth without affecting the signal's HF integrity and smooth, musical compression. The TLA-50's -10/+4dB inputs and outputs integrate into any audio environment, and it features 3-position attack/release switches, gain and gain-reduction controls, output and gain-reduction metering and stereo-link ability.

**TC Helicon VoiceWorks:** VoiceWorks has multi-voice harmonies, transparent pitch correction and fat automatic double-tracking, all so realistic you can solo them with confidence. VoiceWorks includes superb TC Electronic effects and its latest innovation, HarmonyHold™, which lets you freeze your backing harmonies while you sing over them. Add TC Helicon's quality mic preamp and TC Electronic compression, EQ, tap-tempo delay and reverbs and you have an amazing vocal channel with 100 user presets at your fingertips.

## L. SIGNAL PROCESSING TECHNOLOGY/SOFTWARE

**Antares Tube:** Whether you want to burnish your tracks to an angelic warmth or heat things up with some rich, devilish distortion, Antares' Tube plug-in provides the tools to create a wide range of modeled analog tube effects. Based on technology from Antares's multi-award-winning Microphone Modeler plug-in, Tube is easy to use and so DSP-efficient that even a modest native system supports dozens of tracks.

**BIAS SoundSoap:** SoundSoap dramatically reduces tape hiss, buzzing/hum, rumble and most other types of background noise. Although SoundSoap uses incredibly advanced technology, you don't need to be an audio expert. Just click the one-step Learn Noise button, and watch SoundSoap automatically clean your audio! Or, fine-tune SoundSoap's intuitive controls for even more control in just seconds. SoundSoap runs as a VST plug-in (Mac OS X/Win XP), DirectX plug-in (Win), or stand-alone (Mac OS X/Win XP).

**Cedar Audio Retouch:** In photography, "retouching" is the art of identifying and removing unwanted blemishes to produce a perfect image. Cedar Retouch™ brings this concept into the audio world. Unlike conventional restoration, Retouch lets users define the temporal and spectral extent of the sound you want to remove. For the first time, this makes it possible to identify and eliminate noises as varied as coughs, squeaky chairs, page turns, the creak of a piano pedal and even wrong notes.

**PSP DelayPack:** This collection of two effects plug-ins in VST, DirectX and RTAS formats offers Lexicon PSP 42 and PSP 84. Lexicon PSP 42 is a high-quality stereo delay/phrase sampler based on Lexicon's legendary PCM42 processor. Functionality and sound of the Lexicon PSP 42 have been approved by Lexicon. PSP 84 combines essential features of the Lexicon PSP 42 with independent channel settings, adjustable resonant filters and saturation algorithm, and a spring/plate reverb for denser output.

**TC Electronic Assimilator:** When recording, mixing or mastering, equalization is one of the more difficult tasks, especially when trying to match a certain sound. With Assimilator, this process is fast and instantaneous: The user interface provides two complete sets of curves and a Morph page. On the Morph page, you can morph between two complete curve sets by simply moving one fader. Assimilator applications range from film sound to mastering and, of course, creative use!

**Waves Platinum TDM:** The Waves Platinum Bundle is the most comprehensive selection of premiere-quality audio processors ever offered in a single package. The selection of 25 processors offers different processor types spanning essential daily tools, vintage and sweetening style, specialized mastering processors, sound design, "surgical" processors, technical session-savers and the newest highly acclaimed linear phase tools. For many users, Waves Platinum has become essential to their daily production process.

## M. RECORDING/STORAGE DEVICES

**Glyph Technologies Trip2:** Trip2, aka GT 308, is a hot-swappable, FireWire storage system designed to meet the needs of audio/video pros. A 3U enclosure, custom configurable with up to eight storage devices, Trip2 boasts huge capacity and speed. Inspired by the limitations of existing hybrid ATA-to-FireWire "hot-swap" products, Glyph designed an interface to deliver true FireWire hot-swapping. Studios and artists continually recognize Glyph as an innovator in optimizing technology for A/V production environments.

**iZ Technology RADAR 24 S-Nyquist:** The 2003 RADAR® 24 S-Nyquist is a professional multi-track recorder sporting 24 channels of 192kHz analog I/O (+24-dBu) and dual 120GB removable iZSci recording drives for over 19 hours of 24-track recording. Additional features include a combo DVD-RAM/DVD-R/CD-R drive, Ethernet, XGA output, professional remote, 24-channel meter bridge, 114GB additional storage, Word, Video, SMPTE, MTC, 9-pin, Soundmaster, MMC, RADAR Link, and two card slots for optional 24-channel AES, ADAT or TDFI digital I/O.

**Mackie SDR24/96:** The SDR24/96 is a nonlinear hard disk recorder with the processing power to record 24 simultaneous channels at 24-bit/48 kHz or 12 channels at 24-bit/96 kHz. An internal hard drive provides storage for up to 90 minutes of 24-track recording while an onboard drive bay accommodates Mackie's removable M-90 drives. Rear-channel I/O includes USB, 24 channels of analog via six DB-25 ports, ADAT optical, MIDI I/O for MMC and MTC, and SMPTE, as well as clock I/O.

**Rorke Galaxy 60:** This Fibre Channel storage array is designed for high-end digital audio/video, broadcast and streaming applications where disk speed and network bandwidth are critical to workflow. Engineered in a slim, 3U enclosure, Galaxy 60 is a pro 2-Gigabit Fibre Channel solution offering scalability and OEM compatibility.

**Studio Network Solutions A/V SAN Pro:** The A/V SAN Pro™ storage area network represents the pinnacle of superior performance and reliability demanded by world-class audio and video production facilities. Designed to maintain stability under the most extreme conditions, A/V SAN Pro optimizes workflow, accommodates the largest of installations and eliminates the need to physically move hard drives among workstations.

## N. WORKSTATION TECHNOLOGY

**Cakewalk Project 5:** A complete studio environment for electronic musicians, providing everything you need to experiment, create, and perform music using studio-quality instruments and effects, pattern-based sequencers and processors, and ACID™-compatible audio looping tools. Provides advanced capabilities for synth layering, real-time pattern genesis and triggering, and a seamless live-performance audio engine. Supported sample formats: AIF, Akai S5000/6000, Kurzweil, LM4, SF2, WAV. Open environment: ASIO, DX, DXi, MFX, ReWire client, VST, VSTi, WDM.

**Cedar Cambridge:** Cedar Cambridge™ is a modular, real-time, 8-channel, 96kHz audio restoration/mastering system incorporating the most powerful and most refined algorithms yet developed. It is capable of removing more noise—and more types of noise—than ever before, without damaging the desired audio or introducing unwanted side-effects and artifacts. It offers 64-bit floating-point processing throughout, and is fully automated, making it suitable for the most demanding mastering, broadcast, post and audio forensic requirements.

**Cube-Tec AudioCube 5:** This multichannel, 24-bit/96kHz (dual-wire 192kHz) integrated audio workstation is configurable with eight, 16 or 24 AES/EBU I/O channels. The AudioCube offers the most comprehensive selection of professional audio production tools ever assembled in a single platform. The integration of DVD-A authoring, CD and DSD/SACD mastering, restoration, quality-controlled automated archival, audio editing in a "self-contained" workstation provides unparalleled efficiency, throughput and quality control.

**Digidesign Digi 002:** Unrivaled in the industry, Digi 002™ combines the power of Pro Tools LE with hands-on control, FireWire convenience and 24-bit/96kHz quality. Borrowing technology from Digidesign's Control I24™, Digi 002's integrated control surface allows you to manually manipulate virtually every aspect of Pro Tools LE without compromise, complementing 18 channels of simultaneous analog and digital I/O. And in stand-alone mode, Digi 002 serves as a fully functional digital mixer, complete with EQ, dynamics, effects and snapshots.

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**Emagic Logic 6.0:** Logic Platinum elegantly combines composition, notation and audio production in one product. Features include superb sound quality with precise 32-bit signal processing, surround sound digital mixing (up to 7.1), sample-accurate automation and over 50 high-quality effect plug-ins. Logic also opens the door to expanding the Logic system with Pro Tools hardware, providing a highly integrated music production tool, supporting sample rates up to 192 kHz and a dynamic resolution of up to 24 bit.

**SADiE Series 5 DSD-2:** This entry-level model in SADiE's Series 5 DSD Mastering Editor range, the DSD-2 is capable of full editing and mastering of stereo 64fs DSD signals, and incorporates full authoring facilities for the Super Audio CD (SACD) format to produce both Scarlet Book cutting masters for SACD and Red Book masters for CD mastering. Integrity of the 64fs DSD signal is fully maintained, using the well-established editing interface of the SADiE 5 software.

### O. SOUND REINFORCEMENT CONSOLE TECHNOLOGY

**Cadac R-Type:** The R-Type live production console offers both FOH and monitor mixing facilities: Console modules can be located in any slot in its lightweight, monocoque-engineered, 24-slot frame, each of which can easily be moved by two people. These unique "plug anywhere" modules allow rental companies to easily redesign the console exactly to match each tour's specification and budget.

**DiGiCo D5 Live:** Designed from the ground up to deliver superb sonic purity and powerful, instantly accessible controllability, the D5 Live is a live music mixing system unlike any other. Comprising the D5 Live console itself, a local DiGiRack containing A/D converters and I/Os, a matching stage DiGiRack and 100 meters of fiber-optic cable, the D5 is a complete, self-contained system that does away with multicores, splitters, line drivers, dynamics processors and—optionally—an entire effects rack, as well.

**InnovaSon SY40:** Offering power and flexibility in a small and lightweight package, InnovaSon's Compact SY40 features up to 64 mic/line physical inputs, 12 stereo buses, up to 64 physical outputs, and includes dynamic processing and EQ on all I/O channels. With the intuitive Sensory<sup>®</sup> software interface, the SY40 brings fully automated studio technology to the reinforcement arena. The fully digital signal path includes the choice of analog or AES/EBU digital for all inputs/outputs.

**Midas Legend 3000:** Combining an extensive FOH feature set and reliability at unprecedented affordability, the Legend 3000 offers XL4 mic preamps, XL3 EQ and, as always at Midas, a no-compromise attitude to the desk's sonic integrity. Proven digital control of the analog audio is provided as standard, as are unique solutions for users who are mixing monitors from FOH. All this makes the Legend 3000 the most powerful desk in its class.

**Soundcraft MH3:** Available in 24 to 56 mono-channel frame sizes, all with an additional four stereo channels, the dual-mode MH3 features: eight group buses and 12 aux buses in FOH mode; 12 monitor buses (12 mono, or eight mono plus two stereo) in monitor mode; the same new mic amp and EQ designs as the popular MH4; eight VCA groups and eight mute groups with snapshot automation; true LCR panning and outputs; and an integral 12x4 matrix.

**Yamaha DM2000:** The DM2000 mixing system features 96 channels of superior dynamic control, noise-free 24-bit/96kHz audio, and a multitude of effects and outputs, utilizing DSP7 LSIs with 32-bit internal processing. The 22x8 (four stereo) matrix provides cue monitor mixes or zone-level control for sound reinforcement. The patching system enables the 24 buses to be assigned to any output connector. The system is complete with full automation of all console parameters and 24 touch-sensitive 100mm motorized faders.

### P. SMALL FORMAT CONSOLE TECHNOLOGY

**Allen & Heath Xone: V6:** The audiophile Xone: V6 has six dual-stereo channels, four configured as RIAA/line inputs, plus two line/line inputs featuring tube preamps. Each stereo channel features a precision Penny & Giles rotary fader. Discrete circuitry, which employs no op amps, ensures sonic purity throughout the main mix path. The monitor section includes mix/cue preview controls plus an intelligent, processor-controlled cue system. Twin VU meters, based on an original 1950s design, provide accurate mix-level monitoring.

**Dan Dugan Sound Design D-2:** The Model D-2 Automatic Mixing Controller is the first evolution of the famous Dugan live mic processing into the digital domain. This 8-channel processor patches into a console's insert points. A separate ergonomic control panel connects with a single cable. Dugan's patented algorithms eliminate missed cues on live mics without gating. The system maintains a natural ambience, doesn't chop off the beginnings of words, and doesn't cut off talkers who go off-mic.

**JLCooper CS-32 MiniDesk:** The CS-32 MiniDesk™ is the smallest full-featured control surface in the world. It provides fast access to commonly used functions in Pro Tools, Nuendo, Digital Performer, Ableton Live, Reason and most software programs. Its radically small size does not minimize its capabilities as a powerful controller with 32 channels of levels, mute, solo, track-arming and more, including tactile transport buttons, cursor keys and weighted jog/scrub wheel. Six rotary knobs and function keys provide total hands-on control.

**Mackie Control:** Mackie Control provides real-time control over your music in ways a keyboard and mouse combination never will. It features 100mm optical touch faders, a full-size backlit LCD, V-Pots for fast tweaking of effects and plug-ins, as well as customized shortcut navigation and editing for all major software including Cakewalk Sonar, Digidesign Pro Tools, MOTU Digital Performer, Steinberg Cubase SX/SL and Nuendo. Mackie Control is the first and last desktop controller you will ever need.

### SPL MMC1 Multichannel Mastering

**Console:** The discrete, all-analog MMC1 is the first full-featured, DVD-A- and SACD-compatible 8-channel mastering console for stereo and 5.1/6.1/7.1 surround. Features include comprehensive I/O and metering, a logic-controlled memory patchbay, custom-designed multichannel potentiometers and 32-position trim switches. SPL's SUPRA op amps with 120-volt internal operating voltage ensure outstanding dynamic range, headroom, bandwidth and audio purity. The first MMC1 in the U.S. was recently installed in Bob Ludwig's Gateway Mastering and DVD's newly refurbished Mastering A suite.

**Yamaha O2R96:** The O2R96 digital mixing console features 56 channels of 24-bit/96kHz audio, a complete range of stereo effects with 32-bit internal processing and full automation. The control surface and user interface allow analog-style, hands-on operation with 16 assignable user-defined keys. All 56 input channels feature analog mic preamps, independent compression and gating/ducking

processors, 4-band switchable parametric channel EQ and delay. Up to four individual effects processors may be used simultaneously.

### Q. LARGE FORMAT CONSOLE TECHNOLOGY

**AMS Neve Logic MMC:** Featuring the same technology as the award-winning DFC including 96 kHz operation, XSP DSP and MIO596 I/O, the Logic MMC is the logical choice for any facility wanting the power of the DFC in a smaller footprint. Facilities across the continents are already relying on the Logic MMC for post-production, film, DVD and music applications. Automation and operational compatibility with the world community of top-class studios make the Logic MMC a sound investment.

**Calrec Sigma 100:** This all-digital television production console is based on the architecture of Calrec's Alpha 100. All channels include 4-band EQ, separate filters, compressor/limiter/expander, surround/stereo panning and mix-minus outputs. Other features include four surround main outputs, 12 axes, 24 MT and eight groups, with 5.1 and stereo monitoring.

**Euphonix Max Air:** Max Air is a new digital audio mixing console specifically designed for on-air and live-to-tape broadcast production applications. The console is competitively priced for its rich digital feature set and advanced technology. The Max Air console is based on the proven technology and software of the Euphonix System 5; it shares the same DSP core and I/O as the System 5 and also includes much of the same processing and control software.

**Harrison TVD-SL:** Based on Harrison's top-end TVD digital broadcast console, the TVD-SL offers the same power, with twice (44 or 60) the motorized, touch-sensitive input faders. The streamlined layout allows for 33mm fader spacing while offering an 8-character channel display: A unique feature on a compact surface. Up to 21 optional high-resolution, 6.4-inch LCD monitors can display a station's video sources, eliminating the need for a costly "video wall."

**SSL XL 9000K Series:** The XL 9000K Series is SSL's first analog console that provides the benefits of a full 5.1 surround architecture and the increased bandwidth and resolution needed for DVD-Audio and SACD. The XL provides both outstanding audio quality and comprehensive multichannel surround capabilities in SSL's first new analog console since the introduction of the J Series in 1994. Key features include UltiPan™, automated surround panning, advanced photo-realistic Total Recall™, LCR panning on every channel and more.

**Studer Vista 7:** Incorporating rotary and push-button controls that protrude through a flat-screen display, Vista 7 offers a fast, nonfatiguing work surface where multiple channel strips can be instantly ganged or shifted for easy access. This 96kHz console is available in configurations from 20- to 70-channel faders; standard amenities include Autotouch Plus automation, machine control and virtual surround 5.1 panning with motorized joysticks.

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PHOTOS: STEVE LEJNINGS

## Charlie Hunter

FOH engineer/tour manager Steve Lary has worked on several of Charlie Hunter's tours. Over time, Hunter has morphed his ensemble from a simple duo to a trio and back to the original quintet. For the current tour, Lary and the crew are renting the majority of their equipment. "My console can be a Mackie 12-channel all the way up to a Midas XL200," Lary says.

"I'm fairly new to the jazz world," he continues. "The first thing I learned is that the ambient drum kit sound is where it's at. So the first thing I wanted was a couple of large-diaphragm overheads to get that sound. For the money, the Audio-Technica 40 Series was the

way I wanted to go. I have a [Beyerdynamic] M88 on the kick, a Shure 57 on snare and the A-T 4033s for overheads. Then, for guitar I use a [Sennheiser] MD 409, and everything else is whatever the house provides."

At each stop, Lary scours the available outboard processors for a handful of essential elements. For effects, his choices included Yamaha SPX 990s and selections from TC Electronic. "I run everything very dry," Lary says. "Charlie rarely even uses a monitor mix for himself. He's got two amps that give him his sound, and the band sets up extremely close. The audience can hear the banter onstage. It gives it a very intimate feel."



FOH engineer Steve Lary

## FixIt

Grammy Award™-winning engineer Larry Cumings started out mixing Tower of Power, but is best known for his 22 years of working with David Grisman. Cumings also handles the Strawberry Music Festival acoustic events, held over the Labor Day/Memorial Day weekends.



Larry Cumings

### How do you deal with fast-paced, multi-act festivals?

The personnel on the stage are critical. At Strawberry, Tony Williams does a fantastic job organizing and deciding which inputs go where. Especially in band-after-band festivals, you can pre-EQ and we have some general vocal settings that work. On instruments, say, a Martin dreadnaught acoustic, I start with a 200-cycle highpass—where you get all that boom—and then notch it with a narrow Q. Mic selection is also important. For years, I've toured with Neumann KM84s, but I'm blown away by Audix SCX-25s, in terms of high output, tight pattern and good sonic quality in one package. On bluegrass-type group vocals, it doesn't have much proximity effect and is perfect.

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## News

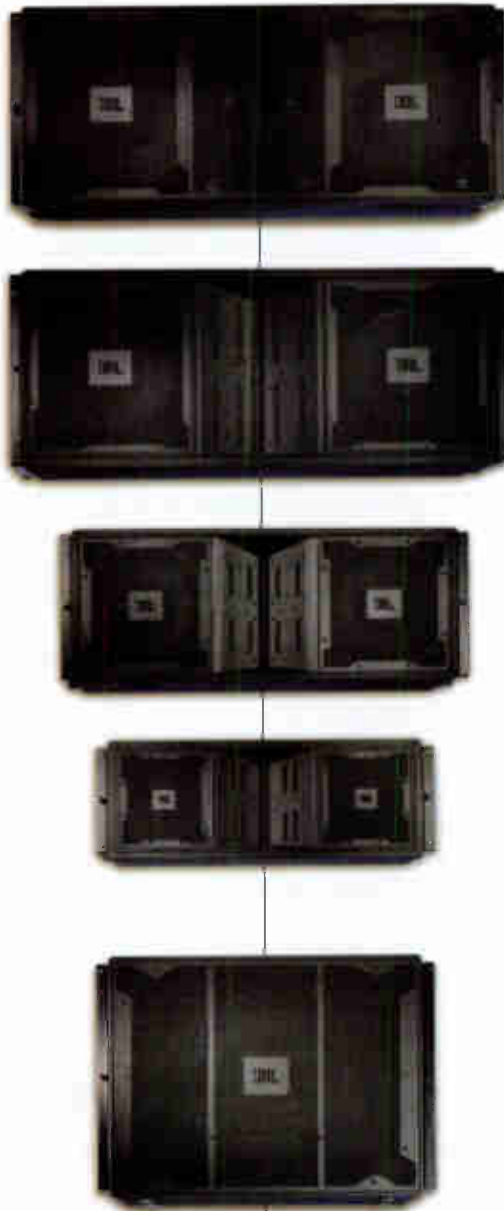


**The New Orleans Jazz Fest**, celebrating its 34th season, featured two Audient Aztec analog live sound mixing consoles at FOH for opening acts Lucinda

Williams and John Hiatt and The Goners, and headliner India.Arie...**The Cape May Jazz Fest** (Cape May, NJ) observed its annual tribute to the genre, using Sennheiser Evolution 604s, 609s and MD 421 microphones around various performance sites during the event...**Sennheiser** announced the launch of its **online repair service**. To return faulty equipment, track repair status and more, go to [www.sennheiserusa.com/service](http://www.sennheiserusa.com/service)...**Ford Audio-Video Systems Inc.** (Oklahoma City) celebrates its 30th anniversary of providing design, installation and service. For more information, visit [www.fordav.com](http://www.fordav.com)...**The Georgia World Congress Center** expansion included developing the 25,700-square-foot **Georgia Ballroom** and installing 10 Meyer monitor wedges with a dedicated Sabine GRQ3103 Multi-function Digital Signal Processor...Late-night comedy talk show **Jimmy Kimmell Live** uses APEX Argos and Hera sound level-limiting systems to regulate the noise level projected toward nearby Hollywood residences during nightly outdoor live musical performances...Responding to a need at the new Marcus Emergency Operations Center in Atlanta (part of the National Centers for Disease Control and Prevention), **Shure Inc.** (Evanston, IL) donated \$20,000 worth of audio equipment, including a premium UHF wireless dual-channel microphone system, lavalier and desktop communications mics, DFR11EQ digital feedback reducer and a programmable equalizer.



Ernie Andrews and Clark Terry (seated) at the Cape May Jazz Fest



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PHOTOS: STEVE BRINKS

## On the Road

### Dave Rat

Founder of Rat Sound, Dave Rat mixes FOH and supplies systems for the Red Hot Chili Peppers, whose *By the Way* tour began in April of last year.

#### *What are some challenges in working with the RHCP?*

The band soundchecks about once every six months. But the main challenge is maintaining a consistent sound, whether we're in Costa Rica, Japan or the U.S. Carrying the same consoles, electronics and drive gear hedges that in our favor.

#### *What's in your toy box on this tour?*

I have an Eventide H3500 dedicated to Anthony's [Kiedis] vocals, which I switch to using as a guitar effect at the end of the set. I run him into my Lexicon PCM60 and that's shared as a tom reverb. Other than a Klark Teknik DN-780 on snare and a Roland SD3000 on one song, that's it.

We've been using Audix OM7s on vocals. I use [Shure] SM98s on drums, except kick, which is an SM91 combined with an Audix D6. Bass has a clean DI, a dirty DI and an SM98. Guitar is 57 on the left rig, and a 57 and 88 on the right rig. Do you have any "must-have" gear? My Sound Technology RTA4000 to either agree or disagree with my ears. Between that, listening to the house and my Sony MDR-CD3000 headphones, I'm set.

#### *What do you do when you're off-duty?*

Snowboarding, skydiving, scuba, mountain biking, anything dangerous!



## Now Playing

### Sheryl Crow

FOH Engineer/Console: Bruce Knight/Midas XL4  
Monitor Engineer/Console: Geno Salerno/Yamaha PM-1D

P.A./Amps: Clair Bros. I-4 with Crown Amps  
Monitors: Ultimate Ears UE-5 in-ear buds, Shure PSM 600 and PSM 700 in-ear monitor systems, Garwood IEM systems, Future Sonics hardwired in-ear systems powered by Stewart amps, Clair Brothers Audio R-4s and 12am monitor wedge

Key Outboard Gear: Rupert Neve 9098 Mic Pre/EQ, BSS 901, Summit TLA 100 and DCL 200, Crane Song STC, dbx 160X and 903, Aphex 661, Eventide H4000 and H3000, Lexicon 480L, TC Electronic 2290, Yamaha REV5 and SPX-90, Aphex 661, API mic pre's

Selected Mics: Shure SM58, Beta 58A, Beta 98, Beta 52, Beta 91, SM57; Sennheiser 409; Audio-Technica 4033

### Train

Sound Company: Audio Analysts  
Production Manager: Brian Duffy

Tour Manager: Thomas O'Keefe  
FOH Engineer/Console: Jack Knoebber/Midas Heritage 3000

Monitor Engineer/Console: Bryan Beck/Soundcraft Series 5

P.A.: Local Stacks and Racks

Monitors: Shure PSM 700 In-Ear System, Audio Analysts A-3s (sidefills), Audio Analysts wedges

Key Outboard Gear: Manley Vox Box, dbx 160SL Blue Series Tube Compressor, Empirical Labs Fatso Jr.

Selected Mics: Audio-Technica 4050, 3060, AE2500, 3300, 3300RF with 5000 Series Transmitter



PHOTO: NEAL PRESTON



PHOTO: BRIAN J. DUFFY

MAX  
**ONLINE**  
EXTRAS

## How's Your Hearing?

For the growing number of Americans who face hearing loss, the House Ear Institute now offers a new online hearing test, HINT. Sig Soli, Ph.D. and head of the House Ear Institute, explains, "There is a range of signal-to-noise ratios in which people normally can understand speech. HINT-FS tests at the upper limit of that range, so a person with normal functional hearing will understand almost all of the sentences [in the test], while a person with abnormal hearing ability will not." To use the test, your



Check your hearing with regular visits to an audiologist and the House Ear Institute's online exam.

computer must have Microsoft Windows and be Active-X-enabled. For more information, go to [www.healthyconnections.com](http://www.healthyconnections.com) or [www.hei.org](http://www.hei.org).



# The digital system



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- > **stage DiGirack**  
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- > **local DiGirack**  
9U 19" rack mount, housing input and output connectors, diagnostic facility and two hot swappable PSU's
- > **100 metres of fibre optic cable**  
with connections on a drum
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World Radio History



# Lou Reed

Text by Robert Hanson  
Photos by Steve Jennings

Touring in support of his latest releases, *The Raven* and *NYC Man: The Collection*, Lou Reed pulled into San Francisco's Warfield theater in June. The set choices ranged from deconstructed versions of his late-'70s classics to the synth- and sample-inspired works of his more recent LPs. Reed was joined by Mike Rathke (who played various instruments), cellist Jane Scarpantoni, bassist Fernando Saunders and vocalist Antony Hegarty.



FOH engineer Frank Golchert mixes 24 inputs from a Yamaha DM2000 console. For vocal and guitar channels, Golchert employs six Avalon VT-737 preamps, which he uses for compression and EQ, as well. The only effects he uses are occasional reverbs and delays, which he accesses from the DM2000's internal effects unit. The crew uses the house P.A. at each venue.

"It's nice to have a digital board because you can do very specific alignments to bring instruments and microphones into phase," says Golchert. "We normally run the electric bass through an Avalon DI and then through another Avalon DI, and we mike the amp, as well. You can make a very good time adjustment between the DI signal and the signal from the microphone. You can hardly do that on an analog board."



Monitor engineer Dan Monaghan mixes a complement of standard wedge monitors from a Midas XL-250 console. Monaghan's stage inputs include a stereo pair from a Yamaha 01V digital mixer handling a submix of Rathke's array of synths and other instruments. All of the guitar signals are taken with a combination of Avalon DIs, Beyerdynamic M88s and Audio-Technica AT4050s. The traditional electric and Kydd upright electric basses are both taken DI and miked with an M88. Additional stage inputs include an Access Virus C synth and a Roland SPD-20 percussion pad. Monaghan's outboard gear comprises BSS FCS-960 EQs and a selection of dbx compressors.

"It's quite an eclectic mix of instruments," says Monaghan. "We have a cello onstage. The bass player also plays the Kydd bass and guitar, and he also plays the drum pads. The stage-right guitar also plays some synth guitar. There are multiple level changes in any given song. It's a very complicated show, considering the sparse number of musicians."

The stage monitors consist of D&B Audiotechnik M2 dual 12-inch enclosures driven by D&B amps. All of the vocal mics are Neumann KSM 105s.



Fernando Saunders



Mike Rathke

# THE FOO FIGHTERS

Keeping Intense Rock Sound Simple

By Candace Horgan



Not many performers have won a Grammy Award™ while playing for different bands, let alone playing different instruments in those bands, but Dave Grohl accomplished that feat when the Foo Fighters won the Best Rock Album Grammy in 2001 for *There is Nothing Left to Lose*. Grohl, guitarist and main vocalist of the Foo Fighters, had previously won a Grammy as drummer with Nirvana in 1996 for *MTV Unplugged in New York* in the Best Alternative Album category. The current incarnation of the Foo Fighters includes Grohl, guitarist Chris Shiflett, bassist Nate Mendel and drummer Taylor Hawkins. Their latest CD, *One By One*, has garnered rave reviews, and their spring tour has brought out enthusiastic crowds for the band's energetic live shows. The band's hard rock/punk sensibility is reflected in the mixing approach of FOH engineer Bryan Worthen.

"I have a lot of effects up here, but I don't use them," says Worthen. "It's just added noise. I like keeping things as simple as possible. The Foo Fighters sound amazing just the way they are. Why add noisy effects to that sound?"

Worthen has been doing sound for more than 12 years. He started in the business as a lighting engineer and moved to sound after hearing one too many great bands sound bad. "I figured I could do it better," he explains. "I work for Rat Sound out of their Tucson [Ariz.] branch, which is how I got the gig with the Foo Fighters. I've been doing Blink-182 for a while now, and many of Blink-182's crew is on this crew. Eric Fermin, production manager for both Blink-182 and the Foo Fighters, and Foo tour manager Gus Brandt trusted me enough," he says with a laugh.

Worthen uses a Midas XL4 console for mixing duties. He has been using Midas consoles for four years: "I like the way they sound and respond. The XL4 is straight up a rock console! I have 28 inputs going to the console. We record to a Glyph hard drive from the console via a stereo matrix every night, and we burn CDs of almost every show."

Among the effects that Worthen actually *does* use for the Foo Fighters is an SPX990 reverb on Grohl when he plays guitar and sings "Tired." Also, "I have a rack of 12 BSS compressors that I use quite a bit, and I have eight Drawmer gates. I use BSS EQs for the P.A., and I have a Klark Teknik parametric EQ that I use on the subs on the P.A. The gates are all on the drum inputs, and all of my compression is inserted on the subgroups. I run 10 subgroups total: kick and snare to one and two; all of my toms to three and four; bass to five and six; Chris' and Dave's guitars to seven and eight; and vocals to nine and 10. The other two compressors go on Dave's vocal and the spare vocal."

The band is using a Rat V-Dosc system on the current tour. For the show in Denver (at the smaller Fillmore Auditorium), the band scaled back their usual setup. "I have four V-Dosc and four dV-Dosc per side, six subs per side and four subs in the middle," Worthen says. "I also use two of the Rat centerfills, which are coaxial 10s with a 1-inch



PHOTOS BY STEVE JENNINGS

FOH engineer Bryan Worthen



and a 2-inch in each box. At a typical arena show, I'll fly 16 cabinets per side—12 V-Dosc and four dV-Dosc—a side hang with four V-Dosc and four dV-Dosc cabinets, plus 24 subs—10 per side and four in the middle—plus the two Rat centers. Power is via Crest amps. My two techs, Andy Turner and Roz Jones, will walk the room and tune it using Smaart Live. Tonight, we are running 102 dB A-weighted at FOH, which is 80 feet from the stage."

The monitor duties are handled by Ian Beveridge, a native of Edinburgh, Scotland. Beveridge handled monitors for Nirvana before hooking up with the Foo Fighters. "Besides the Foo Fighters, I've done monitors for Green Day, who I will do again after this tour, and Beck, Hole, Manic Street Preachers, The Lemonheads and a lot of other indie bands."

Beveridge is mixing on a Yamaha PM1D digital console. "This is my first tour using it, and it's worked out really well," he says. "It saves a lot of space onstage, and since it is programmable and recallable, you can mix all three bands on one console. All you need to do is recall the scene for your band. We are using this desk for the Foos, as well as openers Pete Yorn and Special Goodness. It sounds great. There is a Yamaha school you are supposed to go to; I just downloaded the software and used it at home. It has tons of features. For example, I might normally use 16 bands of EQ and a bunch of effects; all that is in the board. All I have up onstage is the desk and the amps. There are no cables to get screwed up. You wheel it in and turn it on. The actual desk area sets up in 20 minutes. Every



PHOTO BY MICHAEL WENTROB

Monitor engineer Ian Beveridge

channel has a gate, compressor, 6-band parametric EQ, notch filters and graphic EQ. We do in-ear mixes for Taylor and Nate, and that is handled by the board. Some might say it sounds digital, but it's a tool: It sounds like how you want it to sound."

Beveridge explains the in-ear mix for Hawkins and Mendel in this way: "Nate has a single three-way box there that is just for backup in case anything happens; he also has an in-ear stereo mix, and Taylor has an in-ear stereo mix, as well. We use Shure 700 Series transmitters and receivers. On the drum stool, there are two Tactile Audio Thumpers and a ButtKicker 2."

Grohl and Shiflett have a variety of wedges, some for music and some for vocals. "We use a Rat three-way wedge that is really great for music. I don't think it does vocals well, though, so we have a music mono system for Dave with two 2x15s with a 10-inch and a 2-inch in them. For Chris, I have one 2x15 with 10-inch and a 2-inch. On the outsides, for vocals, both Dave and Chris have two two-way wedges 1x15s with TAD 2-inch drivers with a Radian diaphragm, which I think sounds a lot better than the TAD diaphragm for the vocals. The sidefills are Rat Trap boxes, one high pack and two subs per side; the subs are the 18-inch P.A. subs. All of the crossovers are BSS."

As for his approach to mixing monitors, Beveridge explains, "Taylor has an FOH stereo mix in his in-ears, with toms panned from left to right. Everything is compressed and gated like it is at FOH. Dave's guitar is fairly central, while Chris is panned as Taylor sees it onstage: to stage right. Because he is next to Nate onstage, he only gets a little bass. There are two reverbs, a snare and hall reverb, and a gated reverb. It's an intense-sounding mix. You could record it and it would sound pretty respectable. Nate's mix is almost the same, except the guitars are panned hard left and hard right so that the bass appears in the middle of the guitars. There is a lot more bass in there. It makes it easy at festivals because you call up the same mix and change the pan. The really good thing about the Yamaha board is that for in-ears, you need a lot of EQ, and the Yamaha has tons of power for EQ. You can do whatever EQ you need, and since it is digital, there are no phase problems."

Because Mendel and Hawkins use

## Select Mic List

### DRUMS:

**Kick:** Audix D6, Audio-Technica 2-channel  
**Snare:** Shure KSM137 (top), Shure SM57 (bottom)

**Hi-Hat:** Shure KSM137

**Racks:** Shure SM98

**Roto tom/wood block:** Shure SM57

**Cymbals:** Shure KSM32 (right, overhead)

**BASS:** Two Avalon DIs

(one pre and one post)

**GUITAR:** Mesa Boogie cabinets, Shure KSM32 and SM57

**VOCAL:** Audio-Technica 4100s

both in-ears and wedges, Beveridge uses multiple feeds. "There are two kick drum feeds from different mics, and rather than blending the two, I use one for the in-ears and the other for the wedges, and I can EQ them differently as needed. That goes for the guitars, as well; I use one feed for the in-ear mix and one for the wedge mix. It's pretty consistent; normally, I set compressors above inputs so that if anything changes, it hits the compressor a little harder. If the guitar techs are turning it up, I can tell and it stops things from changing in my guys' ears. Dave gets a full-band mix in his three-way wedges. His vocal is split to two channels: one compressed and one uncompressed. The compressed one is compressed hard for the in-ear mixes and the sidefills so Chris doesn't get deafened by Dave's vocals. The uncompressed mix goes to the two-way wedge. Chris' mix is almost the same. Chris only has one music wedge because he has the sidefills near him. I can EQ the guitar and take a lot of the high end out for the wedge mix. Chris also has some bass and guitar and lots of drums. The sidefills are basically drums, Dave's guitar and Dave's voice. Chris' sidefill is a bit louder since his guitar is so loud; he gets his guitar from the cabinets behind him and the wedge in front of him, and he can take cues off of Dave's guitar from what he hears in the sidefills."

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*Candace Horgan is a freelance writer based out of Denver.*

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# Travel in the Post-9/11 World

It's the end of an era. Or at least the beginning of the end. Soon, the last Concorde will fly. Last year, major carriers lost \$16 billion and are flying with staff and schedules reduced even further from 2001 levels, despite billions in congressional handouts. The only major U.S. airlines making money are low-fare carriers like Southwest, JetBlue and AirTran. Almost sounds like the record business.

Numerous readers have asked for an update to last year's (February 2002) story on air travel for road warriors. While much remains the same, some rules have changed as the airlines respond to financial and security pressures.

## IT AIN'T HEAVY...

Until late last year, most North American airlines checked bags up to 70 pounds for free. The Big Six account for over three-quarters of the nation's traffic. Five of them—American, Continental, Delta, Northwest and United—have all lowered their checked-weight restriction to 50 pounds per piece, charging \$25 extra for bags below 70 pounds; in effect, a new tax of \$25 on items over 50 pounds. Though US Airways still allows 70-pound checked baggage for free, its partnership with United has created numerous "Code Share" flights in which United's weight restrictions apply. America West has also followed suit, but charges a whopping \$50 for going over the 50-pound limit.

Outside of the Big Six, most airlines—including many foreign carriers flying overseas—were still using the 70-pound rule at press time, with AirTran, Frontier, JetBlue and Southwest allowing *three* checked items, and ATA limiting those three bags to 140 pounds total. One notable exception is that Continental's first- and business-class passengers are still allowed three checked bags of up to 70 pounds for free, and its OnePass Elite members are still allowed two 70-pound checked items in economy. A little-known unofficial policy of many U.S. airlines is that if you can prove Elite status with any frequent-flier program, then you'll be granted it on another, if you ask. In addition to perks like early boarding and forward-most coach seats, some airports have time-saving express lanes through security for Elite-level members.

How much is 70 pounds? Besides a Samsonite Oyster and a carry-on mic case, my usual one-off kit is a 4U Technomad ProRack (21 pounds) that easily fits within airline-size restrictions. Its 6U rack still makes it by 2 inches, but it's easy to load it overweight. My rack normally holds a Midas XL42 mic pre (8 pounds), a BSS Compact Plus (11 pounds) and a TC Electronic M5000 (19 pounds) for a total of 59 pounds before I've put in cables. This year, I'll change to TC's new Reverb 4000 (6 pounds) to save 13 pounds.

## CARRY ON, MY WAYWARD SON

Carry-on limits still range from 45 linear inches on the Big Six—usually 22x14x9—to slightly larger on other domestic carriers. Many of the 15x10 templates on the X-ray machines in security screening that were installed pre-Y2K by United and others have been removed by the Transportation Security Administration (TSA). Carry-on weight is only specifically restricted with a few carriers, like American and US Air, at 40 pounds; in practice, carry-on bags are rarely weighed. Put your gold bars in your backpack, purse or roll-away.

Despite the airlines' size restrictions for carry-ons, musical instruments that reason-



MORE ADVICE


FOR THE

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PROFESSIONAL

By Mark Frink





*"The KSM44 has amazing presence on vocals. It's a great all-around condenser mic."*

-Eddie Kramer (Jimi Hendrix, Led Zeppelin, Kiss, the Beatles, ...)

*"I found the KSM44 to have an excellent natural quality with good presence and a nice open top end. This mic is so smooth in the midrange, even a banjo sounded good!"*

-Joe Chiccarelli (Beck, U2, Elton John, ...)

*"I tested the KSM44 on vocals, bass, guitar, and drums, and haven't stopped using it since. It's hard to describe, but there is an immediacy to the KSM44 that is very appealing - sort of like a dynamic mic, but more elegant."*

-Brad Wood (Smashing Pumpkins, Liz Phair, Better Than Ezra, ...)

***For a mic with such low self-noise, it sure creates a lot of buzz.***

*"The KSM44 is the quietest microphone I have ever used, and one of the best sounding too."*

-Tom Jung (Pro Audio Review, DMP Records, ...)

*"As I compared the KSM44 to a mic I consider to be an old favorite, my ear immediately chose the KSM44. Shure has a fantastic studio mic that I can use for critical recordings - it's going to become a standard, very fast."*

-Bil VornDick (Alison Krauss, Bela Fleck, Mark O'Connor, ...)

*"My first impressions of the KSM44 were warm, round, full - dare I say it? Fat!"*

-Bob Ross (Recording Magazine)

*"The KSM44 is a remarkable achievement. I am especially impressed with the versatility of this microphone and have yet to find its limits."*

-Steve Albini (Nirvana, Page and Plant, PJ Harvey, ...)

*"I was given the KSM44 prototype early-on, not knowing its intended purpose - so I tried it on everything. Guess what, it worked on everything!"*

-Chuck Ainlay (Trisha Yearwood, Mark Knopfler, George Strait, ...)

The KSM44 multi-pattern studio condenser microphone has become quite the conversation piece in studios around the world. Maybe that's because its incredibly low self-noise (7 dB) lets you record only what you want to hear. Or maybe it's the three polar patterns and the design of the externally biased dual-diaphragm cartridge. Once you experience it for yourself, you'll be talking, too. To discover what makes the KSM44 so buzzworthy, call 1-800-25-SHURE or visit [www.shure.com](http://www.shure.com).

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ably fit in an overhead compartment are allowed. This has been a bone of contention for many years, and recent attempts to settle this through requests from musicians' organizations resulted in a statement from the TSA late last year. It instructs airlines that musicians "who choose to carry on their instruments will still be permitted to carry one personal item and one bag" and that "no instruments are to be prohibited from carriage beyond the screening checkpoint due to their size." In other words, TSA will allow you past se-

curity, but whether the airline's agents will let a slightly oversize instrument on the plane is another story. A pleasant demeanor and a seat assignment at the back of the plane, where you're more likely to find overhead space, will help. Players carrying on instruments are advised to keep a copy of the AFM letter on them: [www.local1000.com/pdf/carryon.pdf](http://www.local1000.com/pdf/carryon.pdf).

**I GOT THE POWER**

In-flight laptop power is another promise that has only been partially fulfilled. Ini-

tially, some airlines installed 15-volt power supplies on cigarette-lighter sockets. A newer system, EmPower—a smaller connector with two pins a ¼-inch apart—is available on many late-model aircrafts. Travel adapters like Targus' Universal Auto Air and iGo's Juice provide power conditioning with an EmPower connector and a cigarette-lighter adapter that fits over it for \$100, while SmartDisk's solution is a \$40 EmPower-only cable for Apple PowerBooks.

While many planes have power at first-class seats, American has computer power in most rows, including economy, on all except its oldest jets, and is the only major with enough seat pitch to comfortably allow laptop use throughout coach. Delta is a distant second, providing EmPower connectors at all seats in its newer Boeings. Continental's 767 and 777 have it in the first six to eight rows of coach. US Air has it on all seats of its Airbus 319s and 320s, while Continental and United often have it in the first six coach rows of their Airbus equipment. On United, you'll only find power jacks on the newer Boeings. There's no guarantee that these outlets will actually be working when you do find them.

**CALL ME THE BREEZE**

On the ground, third-generation (3G) cell phones with Web services can provide faster-than-dial-up wireless connectivity by attaching a cable from a phone to a laptop. The marketing promise of 3G service has been that we'll one day have connectivity at 2 Mbps, rivaling DSL. Don't hold your breath. For now, the 1xRTT technology used in Sprint's Vision and Verizon's Express offer access at speeds of up to 144 Kbps, with plans to double that. AT&T, Cingular and Voicestream phones work on another standard; their 3G, called EDGE, provides a data connection that maxes out at 115 Kbps. Their next version will go up to 384 Kbps when it's rolled out later this year. Contracts with unlimited nights and weekends can make a great alternative to local dial-ups with a 3G phone. Older Web-enabled phones can still get 9- to 14Kbps connectivity, fast enough to send short e-mails with cell service.

Major airports now have excellent cell phone coverage. Web-enabled cell phones can access Internet info on Websites with special pages written for the Wireless Application Protocol (WAP), a simplified, text-based system that displays a few lines at a time, optimized for a phone's tiny screen.

Bob and Brant wish to thank the industry for their support and recognition in our 2003 TEC nomination in the Studio Design Project category.

We also want to thank our esteemed clients for their continued support - Artisan Home Entertainment, BET, **dts**, MGM, Miramax & New Line Home Entertainment.

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World Radio History

Naturally, numerous WAP resources exist for travelers. Travelocity's Flight Schedule section is a real gig-saver; if your flight is suddenly canceled or delayed, it will immediately show all flights to your destination city. I've bookmarked the WAP sites for the Big Six plus Alaska, America West and Quantas to provide all of my airline info. FedEx offers WAP package tracking, and Zagal has WAP restaurant listings. Other favorites include *The Boston Globe* and *L.A. Times*, astrology, NFL, ESPN and The Weather Channel. It's important to

know when Mercury is going retrograde on a travel day. While you're at it, take 10 minutes to program your Top 10 airline reservation numbers into your cell phone.

#### HEY, HEY—WHAT DO YOU KNOW?

Allow extra time at Denver, Las Vegas, Miami and New York's JFK terminals. Their baggage cutoff is 45 minutes before departure, instead of the usual 30. The new bag-to-passenger-matching security measures can keep you from your flight if your bags are late. They also reduce your ability to

standby for an earlier flight, especially if you've already checked your luggage.

The earliest flights have the best on-time performance, an important detail to note when making a connection, but especially so when checked bags must make the transfer with you. When early flights are canceled or delayed, there's also a better chance of getting rebooked. On the other hand, most airlines operate their first flights simultaneously, so early morning also brings the greatest security gridlock.

This year, JetBlue cancelled only one in 500 flights, while United cancelled one in 33; ATA and Alaska are nearly as bad. The rest of the Big Six, plus America West, Southwest and AirTran, cancel around one in 100 flights. Alaska has the best record for mishandled luggage, with only one in 500 passengers. Most of the others average around one in 200 to 300, but regional airlines average one in 100. The rate of getting bumped is down to one in 600 this year from one in 450 last year, and the odds are slightly higher with Delta and Southwest. With few no-shows, JetBlue doesn't overbook but tends to have full planes.

Check in early. Pack light. Have your ID ready. Carry water and reading material. Relative humidity in an aircraft cabin is 20%, so the air traveler's rule of thumb is to drink eight ounces of water for each hour of flying. Get a seat assignment as soon as possible as unassigned passengers are bumped first. Get a forward seat any time you're making a connection: 20 rows of slow-exiting passengers in front of you can make all the difference in catching a tight connection when you're late. Check out seating by aircraft type at [www.seatguru.com](http://www.seatguru.com).

The most important thing to remember about air travel is to never lose your cool. Loud, irate passengers have fewer chances of getting their problems solved, and most airlines have codes that they insert into your record to alert other agents to your behavior. If you do not get your issue handled appropriately, then patiently restate your situation to a supervisor.

Airline travel will not return to pre-9/11. And although the Great Search for Pointy Objects continues, TSA now allows coffee, nail clippers and tweezers through security. ■

Mix sound reinforcement editor Mark Frink is collecting a list of favorite airport restaurants. Send your suggestions to [flyinglunch@markfrink.com](mailto:flyinglunch@markfrink.com).



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- Mike Pappas, Broadcast Audio Engineer, ABC Sports

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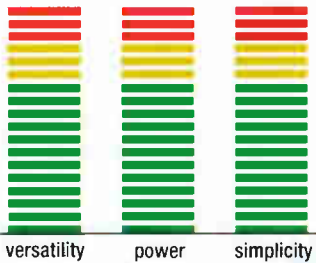
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# New Sound Reinforcement Products



## RADIAL J-PAK

Radial Engineering ([www.radialeng.com](http://www.radialeng.com)) announces the J-Pak, which allows up to eight Radial JDI or J48 direct boxes to be mounted in a standard two-rack-space chassis. The DIs can be mixed or matched—depending on user requirements—based on preferences for either the JDI (passive with Jensen transformer) or J48 (active, high-rail voltage, phantom-powered) units.

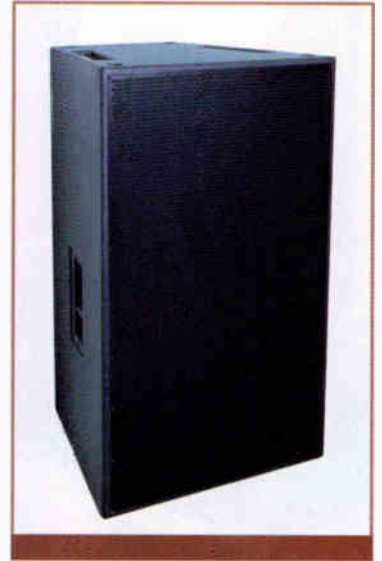
## LINEARX LEAP 5.0 SOFTWARE

The industry standard for enclosure/crossover design, LEAP™ 5.0, from LinearX Systems ([www.linearx.com](http://www.linearx.com)), now consists of two separate applications: EnclosureShop™ and CrossoverShop™. EnclosureShop handles the transducer-modeling/enclosure design featuring diffraction analysis, structural enclosure analysis, nonlinear acoustic simulation, far/near/chamber-pressure analysis, 360° (H/V) polar-field simulation, infinite/finite volume domains, full/half/quarter/eighth-space domains and OpenGL® 3-D graphics and editing. CrossoverShop provides tools to create dividing topologies based on measured response data, offering analog passive/active and digital filter FIR and IIR design/analysis, mixed domain analog/digital designs, impedance/SPL/group delay optimization, graphical schematic entry/editing and more.



## TCS LOUDSPEAKERS

Intended for use in large performance venues to small music clubs and installations, the Touring Concert Systems by Carvin ([www.tcsaudio.com](http://www.tcsaudio.com)) are available in two- and three-way designs. TCS' no-compromise approach to bi- and tri-ampable systems combines high-quality drivers with heavily braced enclosures constructed of ¾- and 1.5-inch cross-grain, laminated Baltic birch plywood with flyable hardware. Systems include slant monitors, trapezoidal mains and optional subwoofers, all with a five-year warranty against manufacturer's defects.



## CAMCO TECTON AMPS

Distributed by Nexco in the U.S., the new Tecton Series of power amplifiers from CAMCO ([www.camcoaudio.com](http://www.camcoaudio.com)) features high-efficiency/low-weight switch-mode power supplies. Designed to offer the same high-performance and low dynamic distortion as CAMCO's successful Vortex amps, but in a more accessible price bracket, the Tecton Series features 10 models, ranging from 2x300 watts (at 4 ohms) to 2x1,950 watts (at 4 ohms), and all feature three parallel-mono, bridged-mono and stereo modes. Other features include selectable input sensitivity, clip limiting, subsonic filter, LED status indicators, DC Protection and an optional remote control.

## PEAVEY COLOR CUE MIC CABLES

Color Cue cables from Peavey ([www.peavey.com](http://www.peavey.com)) include a lighted band on the female XLR to easily ID mics in dark performance spaces. Available in a standard 20-foot length with red, green, blue, yellow, white, magenta, purple and orange-colored lenses, Color Cues are phantom-powered (no batteries) and work with any dynamic or condenser mic. Retail: \$43.99.

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## MIX PAYS TRIBUTE TO THE INNOVATIVE

This August, please join us at [mixonline.com](http://mixonline.com), as we recognize the leaders of the pro audio industry. Mix looks back at the breakthrough technologies that have shaped the history of the TEC Awards: Esteemed editor George Petersen will profile significant developments in each TEC category with historical articles and photos.

The site will also link to exciting TEC-related features : 2003 Voters' Guide, Les Paul Award Winners, Hall of Fame Inductees, Creative Winners, and 2002 in Review.



TECHNOLOGIES AND PRODUCTS THAT HAVE SHAPED AUDIO HISTORY

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# ...Just Hum a Few Bars

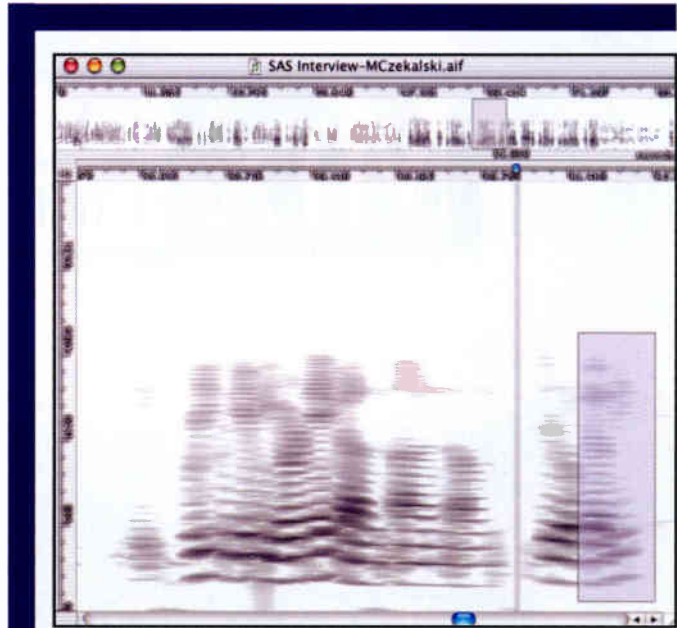
## And We Can All Listen In

By now, you've probably come across some appliance or service that recognizes human speech: your cell phone, perhaps, or the customer service call-in line at your credit card company. What you may not have realized is that a related technology is at work, instigated by "The Man," and put in place to listen in on radio and TV transmissions solely to recognize songs and performances. Why would anyone set up these little music spies? What's going on with this technology?

There are several different machines that recognize audio, whether it is speech or music. By and large, they all share one thing in common: These machines "listen to" and process a sample of any material that they later recognize or match. This is an application of heuristics, learning from practical experience. Several specialized audio recognizers of human speech are available from IBM, MacSpeech and ScanSoft, and I can tell you from seemingly endless hours of "practical experience" that machine recognition of continuous or natural speech is one of the toughest problems in computing.

In contrast, music recognition is a good bit easier, as any particular performance, once it's recorded, is "etched in stone," so to speak. The spectral makeup, timing and amplitude variations are fixed, and only global gain changes, noise and distortion are added when the performance is reproduced. That fact has spawned several vendors to sell recognition tools and services: One of these is Comparisons Corporation, makers of the findsounds.com service. Findsounds.com lets you type in descriptors and its engine will return site URLs that host sounds that match your needs. This can be useful for multimedia producers and musicians who are hunting for that perfect effect or sample. Another heuristic audio search product is SoundFisher, a cross-platform, database-management system featuring content-based recognition, matching and retrieval.

A more interesting and difficult application of music-recognition technology deals with digital-rights management and per-

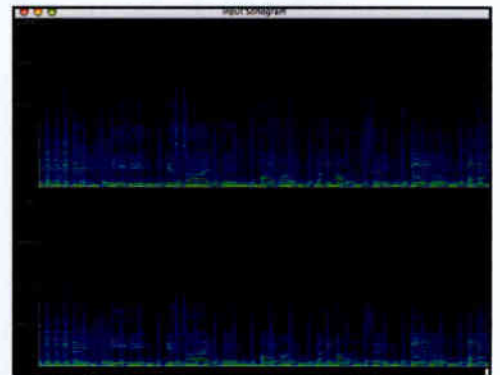


*A frequency spectrogram of speech*

## Pedant in a Box Spectrogram

A spectrogram is a visualization technique for acoustic events or audio material. Spectrograms provide a time vs. frequency and amplitude plot and can be real or out of real time. Nowadays, most spectrograms map frequency to a predefined color table to visually clarify the plot. Forensic investigators, audio restorers and speech pathologists routinely employ spectrograms in their work.

The following two spectrograms are from SoundHack and Frequency, the poor man's Retouch. The color plot from SoundHack shows a stereo folk-rock .AIFF file. Notice the tempo appears as almost a grid of vertical beats, while the monochrome Frequency screenshot displays my voice. The selected utterance is the word "SCSI." For both, the X axis is time from left to right, while the Y axis is frequency.



*A soundtrack color spectrogram of a stereo folk-rock song*

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formance metrics. This is where those machine spies come in. Two companies, Audible Magic and Relatable, are using their audio feature-identification smarts to monitor network traffic, especially P2P activity, recordings on optical and magnetic media and radio broadcasts. Audible Magic, in particular, has acquired quite a few companies, including SoundFisher's developer, in an effort to be the one-stop shop to control content in modern media's chaotic world.

Both Relatable and Audible Magic have products that "sniff" IP packets and "listen" to the audio being carried within file transfers. They've tried to go beyond mere identification to actually block illegal files, but so far, it hasn't worked as planned. The computational and network resources to recognize, validate and block illegal music-carrying packets in real time are still some ways away.

A third company, the solution provider formerly known as Cantamatrix, is now part of Gracenote, those CDDDB guys. For those of you who don't get out much, CDDDB is the largest commercial database of CD metadata, which many MP3 player applications rely on to provide disc and song titles. According to Gracenote, its "information services are used by leading media players including AOL's Winamp, Apple's iTunes and RealNetworks' RealOne Player." Leading CE manufacturers, including Pioneer, Philips and Sony, incorporate Gracenote's CDDDB technology into their latest generation of home, mobile and portable music products.

In addition to the commercial products I've already mentioned, there are several Open Source or freely downloadable software whatsitz that also do the heuristics dance. One is MusicBrainz's Tagger, a Win application that "allows you to automatically look up the tracks in your music collection and then write clean metadata tags [ID3 tags or Vorbis comment fields] to your files. As you tag the files in your collection that MusicBrainz didn't recognize, you submit the acoustic fingerprints [TRM IDs] of your files back to the server. Submitting acoustic fingerprints will allow MusicBrainz to automatically identify these tracks in the future so that other people using the Tagger can benefit." TRM IDs are profiles typically generated by Relatable's TRM audio fingerprinting technology. A version of TRM's audio feature extraction client was used by the MusicBrainz project.

Another no-cost machine is SWMUMDIS, a "universal tool to develop and

explore audio representations that process the ridges" of a preprocessed spectrogram. SWMUMDIS is a demonstration of research principals and not a product, even by Open Source standards, but it does serve as a point of reference for further development by pointy-headed programmers.

Other music-recognition uses include automatic quality assessment and visualization of parameters such as spectral content, which makes rapid identification of sections easier for editing. Another utility application is quality control. The International Telecommunication Union (ITU) created the PEAQ (Perceptual Evaluation of Audio Quality) standard for objective machine evaluation of perceptually coded audio, of which the MP3 codec is a widespread example. Basically, PEAQ software "listens" to incoming audio, makes an evaluation based on a model of human hearing and that subjective factor we refer to as "quality," and then rates the audio in real time. This is invaluable for broadcasters, replicators and anyone who needs a way to monitor their "product" while never tiring or growing bored with the program material. PEAQ's quality assessment is based on a group of trained human listeners whose talents were baked into software. PEAQ-based products are available as software-only and hardware implementations.

These days, the audio data-sniffing field is crowded enough that participants are vying for mind share by claiming the fastest recognition time—"I can name that tune in a dozen notes!" "Hah! I laugh at your algorithms! I can name that tune in half as many!"—and so it goes until, at some point, the programs will be able to name that tune with just one note, and then we can all retire and let the computers do our work. The world of machine intelligence and audio recognition may someday provide a truly useful product to, say, automatically assemble a soundtrack for your life. But until then, audio recognition remains a useful tool primarily for bean counters and intellectual-property cops. Just remember that, even in space, something can hear your Strato-caster scream. ■

*O'Mas' computer auto-assembled this column while he was preparing a delicately toasted cheese sandwich. All that time, he and his PowerBook were under the influence of Morcheeba's latest, Charango, and the wide-ranging styles of new Brit-pop kids, Delays.*

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*Sorry, Danelle Glenn,  
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## Tools of the Trade



### APPLE POWER MAC G5

Just as you'd expect from Apple, the G5 is beyond next-generation. The Apple/IBM-co-designed processor operates at 64 bits, offering 16GB per sec throughput (dual-processor systems) and allows the use of up to 8 GB of RAM. The unit maintains backward-compatibility with current 32-bit code, such as Mac OS X, OS 9 classic environment and existing applications running native at processor speed, which means it will run existing software. The system can be configured with three PCI slots capable of either 64-bit or 32-bit operation and can include PCI-X expansion technology supporting 3.3-volt signaling and 33MHz and 66MHz PCI cards. I/O is impressive, including optical S/PDIF in and out, two USB ports, two FireWire ports (400 and 800) and one 10/100/1,000 BASE-T Ethernet port. There is an extra FireWire 400 and USB 2.0 connector on the front of the computer, allowing quick and easy hookup of hard drives and other peripherals without having to crawl behind the unit. To keep things cool, the G5 is sectioned internally into four independently controlled thermal zones. Seven of the nine (!) fans are designed to spin at a low speed for minimum acoustic output. The result is that the new unit runs three

times quieter than its predecessor, the G4. Prices start at \$1,999. See more at [www.apple.com](http://www.apple.com).

### M-AUDIO SOUND + LOOP LIBRARIES

With the creative production engineer/music-maker in mind, M-Audio ([www.m-audio.com](http://www.m-audio.com)) has shipped a new 14-volume collection of sample CDs. The Sound + Loop Library consists of hip hop, dance, pop, Latin, R&B, rap, drum 'n' bass, techno and world

beat sample styles, among others. Each CD delivers more than 400 MB of samples in .AIFF, .WAV, REX2 and ACIDized .WAV formats.

### PRESONUS HP4 HEADPHONE-DISTRIBUTION AMP

PreSonus ([www.presonus.com](http://www.presonus.com)) has released the HP4, a ½-rackspace headphone-distribution box for \$129.95. The unit can be ganged with other HP4s, and claims a -98dB noise floor with a wide frequency response. It features four discrete headphone outputs on the front panel, accepts ¼-inch TRS balanced or unbalanced inputs, and has dedicated volume controls and a Mono button.

### ARGOSY SPIRE HS SERIES RACK ENCLOSURES

Argosy ([www.argosyconsole.com](http://www.argosyconsole.com)) unveiled a new line of hardwood stand-

alone rack enclosures that are available in mahogany or black ash. The Spire HS Series top and side panels are made from thick 1¼-inch hardwood and are available in 14- or 28-space bays. Single, double, triple and quad-bay configurations are standard and can include a wide variety of accessories, including front door kits, shelf kits and a dolly system.

### GEFEN 4X1 DVI/ADC SWITCHER

Modern production environments can easily become multiplatform computer environments, making monitoring a nightmare. That's where Gefen's extend-it 4x1 DVI/ADC Switcher enters to clear up the picture. It connects four DVI sources to two ADC and/or DVI displays. DVI sources can include any computer equipped with a DVI port. Any DVI- or ADC-equipped display can be used with the Switcher, including Apple's 23-inch Cinema HD Display. The unit is rackmountable, and comes with an infrared remote control. Suggested retail price: \$849. Available online at [www.gefen.com](http://www.gefen.com).

### BIG FISH AUDIO METHODS OF MAYHEM II

Disproving the theory that there's no such thing as an ugly baby, the newly born *Methods of Mayhem II: Damage Control* CD library ([www.bigfishaudio.com](http://www.bigfishaudio.com)) has hit the streets. The evil twin CDs contain numerous disturbing guitar and bass riffs, drum sounds, soundscapes, background noises, squeals, squeaks and more. The set retails for \$99, and comes in audio, .WAV and REX formats.



### DIGITAL MUSIC DOCTOR SONAR SWIFT & DEEP

For those who want to swiftly and deeply advance their recording/editing skills, the Digital Music Doctor ([www.digitalmusicdoctor.com](http://www.digitalmusicdoctor.com)) released a new tutorial CD-ROM aimed at Cakewalk Sonar users. The CD targets novice through experienced users, and contains more than 70 minutes of video. The tutorial is broken into nine modules: three on setup; three on MIDI recording/editing; and three covering recording, editing, mixing and loop construction. The CD is priced at \$29.95, and is available online.

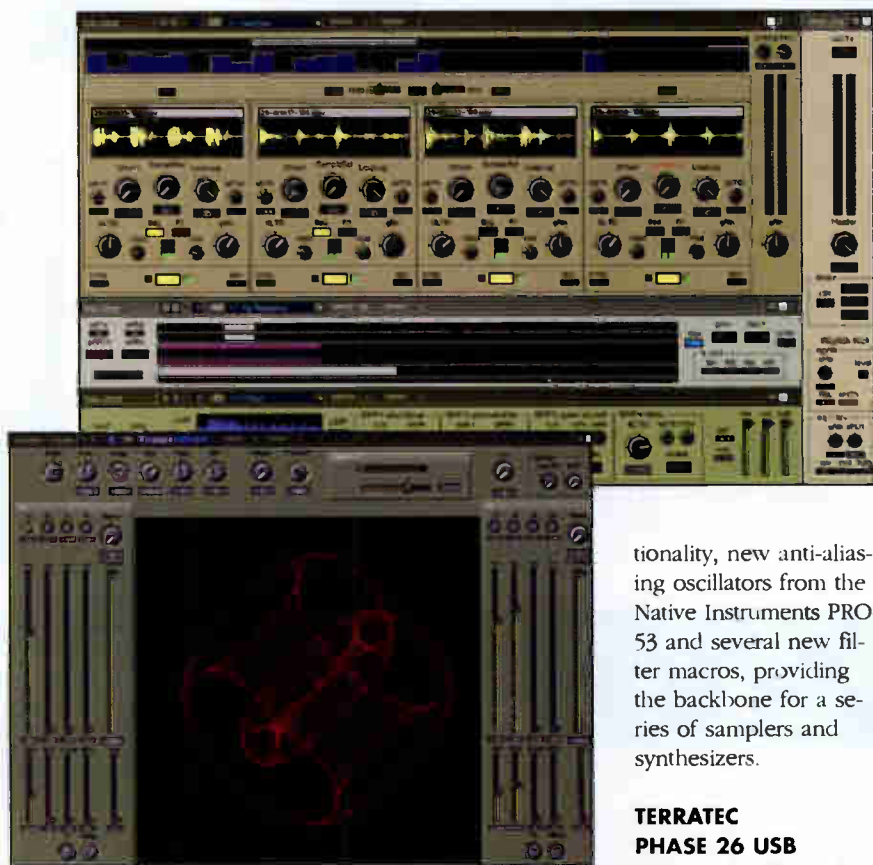
### CLEARSONIC ISOFLOOR

This modular floor decoupling system is designed to reduce sound and vibration transfer by approximately 6 dB. Using the supplied Velcro strips, several of the 2x2-foot IF2 and/or 1x1-foot IF1 baffles can be quickly assembled into a custom and quiet flooring platform. Units can be stacked and topped with carpet or other flooring products, increasing their effectiveness. Visit [www.clearsonic.com](http://www.clearsonic.com) for more details.



### SIGMA OCTASTREAM DIGITAL AUDIO PRODUCTS

Digitally challenged broadcasters will be interested in the recently unveiled OctaStream ([www.sigmaelectronics.com](http://www.sigmaelectronics.com)) family of AES digital audio signal-management products. Designed to cost-effectively address 8-channel audio and the integration of AES and multichannel digital audio into a DTV stream, OctaStream provides unique so-



tionality, new anti-aliasing oscillators from the Native Instruments PRO-53 and several new filter macros, providing the backbone for a series of samplers and synthesizers.

### TERRATEC PHASE 26 USB

Aimed at laptop production, this cross-platform, external, audio USB interface operates at up to 24-bit/96 kHz and sports both optical and coaxial S/PDIF connections. I/O includes two analog inputs, six outputs, a MIDI interface, mic input and an amplified headphone output. An unexpected plus is the addition of a phono preamp, allowing a turntable to be connected to the interface. The unit boasts low latency and comes with drivers for Windows XP and Mac OS X. See more at [www.terratec.com](http://www.terratec.com).

### APPLIED ACOUSTICS SYSTEMS TASSMAN FOR RTAS

Applied Acoustics Systems ([www.applied-acoustics.com](http://www.applied-acoustics.com)) announced the release of the RTAS version of the Tassman Sound Synthesis Studio for Pro Tools. Based on AAS' physical-modeling technology, the Tassman is a modular sound-synthesis studio. Included with the software are 50 instruments and over 1,000 presets. Supported platforms include Windows 95/98/2000/XP and Mac OS X and OS 9; drivers include ASIO, DirectX, WDM, Sound Manager and Core Audio. Price: \$449 (download).

lutions to the timing, mixing and synchronizing challenges inherent in delivering digital audio. The line consists of the DA5320 Mixer and Subframe Router, the DA5315 Variable-Delay Compensator, the DA5325

Sample-Rate Converter and the SG5605 Audio Reference Generator.

### NATIVE INSTRUMENTS REAKTOR SESSION AND REAKTOR 4

Reaktor Session and Reaktor 4 were unveiled by Native Instruments ([www.nativeinstruments.com](http://www.nativeinstruments.com)), boasting a new look and compatibility with OS X. Reaktor Session gives unlimited access to Reaktor instruments, samplers, effects and live tools. It includes synthesizers and resynthesizers, samplers and beat loopers, groove and drum machines, surround and innovative effects. Reaktor Session also provides access to the ever-growing online library on the Native Instruments Website. Reaktor 4 includes new modules, enhanced func-



**MOTU 828MKII FIREWIRE INTERFACE**  
MOTU ([www.motu.com](http://www.motu.com)) released the 828mkII, a single-rackspace FireWire audio interface for Macintosh and Windows computers. The new unit operates at 24-bit/96 kHz, and is meant to replace the original 828 at the same price (\$795). It offers many improvements including more I/O, 8-bus monitor mixing, stand-alone operation, SMPTE timecode and MIDI I/O.

**IZOTOPE TRASH**

The phrase "One man's trash is another man's treasure" is definitely true in the case of iZotope's Trash ([www.izotope.com](http://www.izotope.com)),

a 64-bit effects system provided in the form of a DirectX plug-in. Trash provides over 85 box, cabinet and speaker models, ranging from amp classics to stacks to experimental designs. Features include 45 overdrive and distortion models, 12AX7 tubes, 6L6 tubes, transistors, fuzz, rectifiers and more. Other effects include multiband distortion, sweeping filters and emulations of classic delays that can be used as guitar or general recording effects. System requirements are Pentium

II 450 or greater running Windows 98SE/ME/2000/XP and a DirectX host application. Price: \$199. Head to iZotope's Website to check out the Trash Cookbook, featuring "recipes" for guitar, drum, keyboard and bass presets. A demo version of Trash is also available on the site.



# UPGRADES AND UPDATES

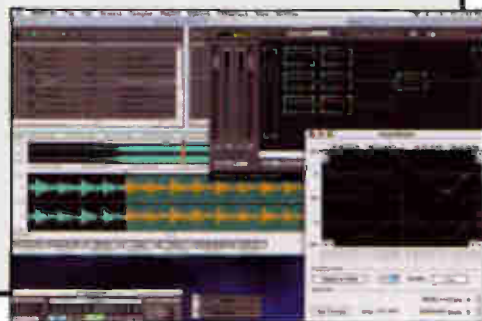


HHB announced **substantial upgrades** to its DVD-R product line. Currently only available in Europe, the 1x-4x disc will soon be available in the USA. In addition, the all-new HHB DVD-R4.7GB-G general-type disc claims important performance and operational advantages over conventional DVD-R media. See more at [www.hhbusa.com](http://www.hhbusa.com)...Mackie ([www.mackie.com](http://www.mackie.com)) announced that **ABP Tools TH-S Version 2.1** supports the **Mackie Control Extender** and **Baby HUI** desktop control surfaces. The Mackie controllers can now act as playlist manager/playback controllers for the Mac-based live broadcast program. For more info on the ABP Tools TH-S program, visit [www.apbtools.com](http://www.apbtools.com)...E-mu has released **V. 2.0** software for its **XL-7** and **MP-7 Command Stations**, as well as the Proteus 2500 Command Module. The new operating system offers nine

new performance features, and is immediately available for a free download at [www.emu.com](http://www.emu.com)...Lynx Studio Technology has **OS X** drivers for the LynxTWO and L22 192kHz PCI inter-

face reference audio cards available from its Website, [www.lynxstudio.com](http://www.lynxstudio.com)...AMS Neve recently announced the availability of Cedar's Dehiss process for its **AudioFile SC** platform. Dehiss joins Cedar's Declick and Decrackle, which were ported earlier for the Audio-File platform. For pricing and more details, visit [www.ams-neve.com](http://www.ams-neve.com)...Allen & Heath announced the release of **V. 3.1** of its **iDR System Manager** software. New features include draggable curves for the EQ and dynamics sections, crossover slopes in the output PEQ, and a new cut-and-paste system that allows information to appear on the toolbar. The update is free online at [www.allen-heath.com](http://www.allen-heath.com)...Roland's **M-1000** digital line mixer is now **OS X-compatible**. For more details, visit [www.rolandus.com](http://www.rolandus.com)...Emagic's **Logic Platinum 6.1** is now available for a

free download at [www.emagic.de](http://www.emagic.de). The newest incarnation of Logic allows it to be used within Pro Tools under OS X. It also provides the full functionality of Emagic's optional ESB TDM and PTHD extensions in Mac OS X...Prosoniq's **Orange Vocoder** has been **upgraded** to **V. 2.0**, providing compatibility with Pro Tools 5.3 and higher and OS X and giving it the ability to receive MIDI. See more at [www.digidesign.com](http://www.digidesign.com)...Latest in a flurry of software updates, **TC Works** has just **shipped Spark XL 2.8**. The newest version adds the promised Apple Audio Units support announced in the recent 2.7 upgrade. Other new features provide for user-assignable key commands and support for long file names. Owners of V. 2.7 can download 2.8 for free from [www.tcelectronic.com](http://www.tcelectronic.com) ■





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# TC Electronic Reverb 4000

## Honey, I Shrunk the 6000

Producers and recording engineers recognize that only a handful of digital reverbs are worthy of the title "main reverb." These are all great-sounding units that can adapt to any source, from strings and vocals to hard-sounding drums and percussion. Despite the TC Electronic Reverb 4000's diminutive physical size (its aluminum and steel chassis is just 1U and 8½ inches deep), it belongs in that rarified class because it is a single-DSP engine version of TC's flag-

and use front-panel interface.

The user interface design is very intuitive and immediate; in general, push a button, enter a short menu screen and adjust parameters with the large encoder wheel. The front-panel display is tiny and has LEDs for L/R input-level meters, overload, sample rate, MIDI programming and Preset Editing mode. The 56x128-dot graphic LCD shows which preset is running, as well as submenus for Recall, Store, Utility and Wizard functions.

feature: When Bypass is pushed, you have the choice (in the I/O menu) of hearing the reverb tail continue or not. Finally, the Utility menu is for MIDI parameter setup, memory copying and card formatting.

### TC ALGORITHMS

The Reverb 4000 uses only algorithms developed by TC Electronic, and each preset's unique set of parameters is fully adjustable. The manual provides good explanations, so you can edit with confidence and pur-



ship System 6000. After using the Reverb 4000 during a month-long album-mixing project, I found it consistently proved itself on every song as a first-class, no-compromise main reverb.

Strictly a digital reverb (no phasers, flangers, chorus, delays, pitch-related effects, EQ or dynamics), the 4000 comes with 150 stereo presets pulled from TC's 6000, M5000 and M3000 units, along with classic reverb emulations such as EMT 140 plates, EMT 250 and AMS NonLin. There are 100 additional memory locations for user-modified presets and another 100 can be held on a PCMCIA card (front-panel slot). The unit comes with editor software on a CD-ROM that, via a USB connection, turns any PC (Mac in late 2003) into a virtual version of the TC ICON remote controller: a hardware unit controlling the System 6000 and DB-8. Although using the 4000 with the ICON in the studio is great with every section and parameter quickly accessible on beautifully designed pages, the Reverb 4000 functions the same as a stand-alone unit, with all salient parameters available on the easy-to-learn

### TC TECHNICAL AND MENU

The Reverb 4000 uses 24-bit AD/DA converters running at 44.1 or 48 kHz, 88.2 or 96 kHz in double-rate mode. Both A/D and D/A converters run at 6.144 MHz using delta-sigma conversion at 48/96 kHz. In addition to balanced XLR inputs and outputs, there are AES/EBU and S/PDIF digital I/O connections, as well as Toslink/ADAT Lightpipe sockets and a Word Clock/Sync Input RCA connector.

The I/O menu lets you select between digital or analog I/O, clock source, analog and digital level trim (24-bit transparent at 0 dB), ADAT routing and output dither. Peak analog levels default to ±18 dBu (12 dB of headroom) and are adjustable from -11 dBu to ±21 dBu. There are no hardware front-panel input/output level or wet/dry mix pots. Wet/dry mixing takes place internally, and the Reverb 4000's internal signal path uses 48-bit double-precision processing. I tried the unit using both the analog and digital I/O and could not tell any sonic difference in the reverb sound or the dry-source audio.

Live sound mixers will like the Kill Dry

pose. Algorithms include VSS-4, a true stereo reverb that, according to TC, is based on "source-related reflections from multiple angles...comparable to real-world mono or stereo sources positioned in an authentic or virtual space"; VSS-3, a multi-purpose algorithm from the M3000 with many adjustable parameters in the early reflection, reverb diffusion and modulation sections; NonLin-2, an effect reverb with adjustable attack, hold and release; DVR-2 (the EMT 250 emulator), a generic reverb; Reverb 4, a very adjustable room ambience; VSS-4TS, another true-stereo reverb that utilizes two linked reverbs; and Ambiator, which provides many simulated acoustic environments. The latter, along with NonLin-2, are mostly used in the Effects bank presets.

### SELECTION, ORGANIZING AND THE WIZARD

Memory locations are arranged in four contiguous banks: halls, rooms, plates and effects. Without using the ICON software, scrolling through presets is a little tedious with the wheel, as there is no direct-access



keypad to access a specific preset. You can skip through banks with the Up/Down buttons and then scroll to the preset. Thoughtfully, TC has added the Recall Wizard feature, a kind of search engine or filter to find factory-recommended reverb presets. Search engine results are determined by the preset's origin (where it originally came from), size (micro, small, medium, large or extra-large acoustical spaces) and source (what the reverb is going to be on). In addition to new users of the 4000, this is the perfect feature for anyone who wants some type of ambience treatment but doesn't know which preset to start with (or just wants to explore). Search results can be selected with the wheel or listed on the ICON's main screen.

### MODIFYING AND STORING

Modifying presets is very simple: Three dedicated front-panel knob controllers adjust the three most important parameters of any preset, usually (except for NonLin-2 and Ambiator) pre-delay time, decay time and a high-frequency parameter, such as roll-off, coloration or decay. Once a preset is recalled, the Up/Down keys move you through successive and lesser-important trios of parameters that are also adjustable by the same three knobs. Along with the selected preset, these three parameters remain current and running; they are always visible at the

bottom of the display even when you browse to have a look at other presets. There is a helpful flashing Recall/Enter reminder in the display when you are not looking at the currently running reverb's parameter menu. If you get lost in the wilderness of parameters, push the Home button and you are automatically backed out to the root page; i.e., the initial page that comes up when you first selected the preset. Using the ICON after selecting a preset, you'll get a row of six virtual-parameter sliders: the previously mentioned first three and the next lower level's three.

Once you've selected and tweaked a preset to your needs, you can rename it and store it. I liked that the 4000 defaults to the next free user-memory location and stores it using the original preset's name if you don't rename it yourself. You can store at any time if you want to try different parameter settings of the same preset and A/B between them. Toggling between presets has a momentary lapse of one to two seconds when loading a new preset. I could not find a way to compare my parameter changes to the original factory settings other than to store both versions in two user-memory locations and switch between them.

### VIRTUAL ICON CONTROLLER SOFTWARE EDITOR

I installed the included ICON software editor in my 800MHz Celeron PC. Installation

went fine, although at a later date, I had to reinstall the software for some strange Microsoft XP Pro reason, I think. When you connect the USB cable to the 4000, the software detects it and loads all presets and set-up data. The ICON pages filled up (vertically) my 768x1028 flat-panel computer monitor with the virtual sliders and buttons, which are visible from across the room under any lighting. ICON can control up to eight TC Reverb 4000 units on the USB bus.

### LET'S GET MIXING

When mixing inside of Pro Tools, using an external reverb saves loads of DSP resources. I connected the 4000 to my Apogee AD8000 interface using both stereo send and return paths. To take full advantage of the 4000's true-stereo reverbs, it is important to send in stereo, even from mono sources. My biggest problem was deciding which preset to use. I found the VSS-4TS true-stereo reverb algorithm wonderful for a realistic drum room sound, and the AMS NonLin-2 effect put the lead vocal track in a "sonic picture frame" on a faster-paced song. The EMT 140 Long preset was a good track reverb for an old-school rock ballad, while Chorus Hall and Crystal Hall presets worked well as an overall main diffuse reverb on vocals and acoustic guitars. My favorite preset, Dual Backyard, is a true-stereo preset that uses two reverbs linked together (each reverb's parameters can be locked together) and works best if you use a pan pot on your stereo-effect send. I would match that pan pot to the track fader's pan position. I used this preset on an entire track with each instrument placed across on a virtual stage.

The TC Reverb 4000 sells for \$2,999 MSRP and sits well in the ranks of professional digital reverbs where smooth, lush and highly detailed reverberation is a must. I found that the 4000's reverbs were very wide stereophonically, noise-free, transparent and easily heard in the mix. The unit's small LCD and lack of a direct-entry keypad make the ICON software editor necessary for serious programming and preset management. I would suggest a less-expensive "blank front-panel" version (ICON software required) as a more cost-effective way to enjoy the 4000's superb sound.

TC Electronic, 805/373-1828, [www.tc-electronic.com](http://www.tc-electronic.com). ■

*Barry Rudolph is an L.A.-based recording engineer. Visit his Website at [www.barryrudolph.com](http://www.barryrudolph.com).*

## Specifications

**Digital I/O Formats:** AES/EBU and S/PDIF 24-bit, EIAJ Optical (Toslink), ADAT Lightpipe

**AD/DA Conversion:** 6.144 MHz delta sigma @ 48/96 kHz

**Output Dither:** switchable HPF/TPDF dither 8- to 20-bit, independent output

**Word Clock Input:** RCA phono, 75 ohms

**Sample Rates:** 32/44.1/48/88.2/96 kHz

**Processing Delay:** 0.2 ms @ 48 kHz, 0.1 ms @ 96 kHz (A to A; 1.37 ms @ 48 kHz, 0.68 ms @ 96 kHz)

**Frequency Response:** DC to 23.9 kHz  $\pm 0.01$  dB @ 48 kHz (digital I/O); DC to 47.9 kHz  $\pm 0.01$  dB @ 96 kHz (digital I/O)

**Input Impedance:** 20k ohms (electronically balanced)

**Output Impedance:** 100 ohms (electronically balanced)

**Max Input Level:** +22 dBu

**Min Input Level:** -10 dBu for 0 dBFS

**Max Output Level:** +22 dBu

**Sensitivity:** @ 12dB headroom: -22 dBu to +10 dBu

**Dynamic Range:** greater than 103 dB (unweighted)

**THD:** -95 dB

**Frequency Response:** 10-20k Hz  $\pm 0.2$  dB @ 48k Hz; 10-45k Hz  $\pm 0.1$  dB @ 96 kHz

**Crosstalk:** less than -80 dB; typically, 100 dB @ 1 kHz

**ICON Editor Software Requirements:** USB connection; Pentium PC using Windows 2000/XP (Mac OS 9.2/X late 2003)

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- (2) Who the major players are in each product category, and where their technologies are headed
- (3) Market trends for flatscreen technologies, including unit sales and dollar value
- (4) Interfacing issues with flatscreen TVs and monitors, including networked (IP) signal distribution and control
- (5) Real-world experiences with flatscreen display installations in key market segments

For more information about PRIMEDIA's FlatScreen Focus 2003 conference program, contact Peter Johnson at 225-673-9400 or via email at [pjohnson@lobasservices.com](mailto:pjohnson@lobasservices.com). For exhibit and showcase information contact: Jeff Victor at 312-840-8444 or via email at [jvictor@primediabusiness.com](mailto:jvictor@primediabusiness.com).

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World Radio History

# Native Instruments Vokator

## Virtual Vocoder/Processor/Synth/Sampler

Today, improved technology has resulted in much more powerful vocoders than their disco/new wave-era counterparts ever hoped to be. Modern digital vocoding relies on the Fast Fourier Transform, and only recently have consumer computers had the horsepower to accomplish this analysis in real time, enabling high-quality live vocoding. Priced at \$299, Native Instruments' Vokator PC/Mac software is a quantum leap forward in this regard. Computer-based, real-time vocoding has been around for a while, but Vokator is an order of greater magnitude in terms of quality and power, particularly for live use.

### VOCODING AND PLENTY MORE

Vokator is more than just a vocoder: It includes a nice, virtual, subtractive analog synthesizer and a sample playback unit that includes "granular synthesis features." It allows flexible signal routing and mixing that's not seen in other vocoders. In Vokator, "A" is the microphone input and "B" is the other input that is traditionally used for a synth or guitar. The A\*B mode is the traditional vocoder setup, but a B\*A mode is brought up by simply pressing a button; no repatching is required. Mix mode allows mixing and panning of A\*B and B\*A modes simultaneously, but severely taxes the CPU. There is an A+B mode that simply passes both inputs unvocoded to the final mixing stage, and dynamics and "spectral" processing can be applied to each input distinctly. Group mode simulates a traditional analog band-pass vocoder by combining user-specified frequency bands into envelope control for user-specified bands in the other channel.

With Vokator's I/O, live vocoding with both signals provided externally is a snap. On the other hand, input A can be driven by an internal file-playback unit, which the GUI refers to as "tape playback." Likewise, the B input can be fed with Vokator's full-featured onboard synth or sampler. The powerful synth has tremendously flexible modulation routing and continuously variable modulation between its four available waveforms.

The signals can be routed directly to the outputs, providing a hard bypass of the vocoder engine. Otherwise, both A and B inputs can be routed through their own signal chain, consisting of dynamics processing, delay, FFT and "spectral effects," which is NI's proprietary special effects processing.

This processor offers some truly wild mathematical signal twisting, especially with programs named Jello Mold, Time Sponge, Foam, Lime Twist and Horse Tail. At this stage, the signal has not yet even reached the vocoder, which is the next stop. After vocoding, there is another compression stage. Finally, the output is visually represented by the amplitude vs. frequency Spectral Output display, which also presents the Breakpoint Editor. This allows drawing a curve that visually represents the vocoder's spectral output, essentially a graphic equalizer. Resynthesis via inverse FFT is the last stage prior to the final mix.

Vokator provides MIDI sync, so most parameters can be locked with an external sequencer, yielding some interesting results. Vokator also includes a simple multiple-step, analog-style internal sequencer. The synth section includes chord memory (great for live vocoding) and an arpeggiator. You can morph from one synth patch to another, resulting in some astonishing effects with voice, percussion and other instruments. Nice features like these help put Vokator ahead of other computer vocoders.

### OVERHEAD UNDER THE HOOD

Vokator has issues with computer overhead: It's a CPU hog. My G4/400 couldn't handle it. Even after allocating over 700 MB of RAM to Vokator, my Mac choked and sputtered. My 1.533GHz Athlon easily handled the application. NI recommends a G4/733 with 512 MB of RAM for



More than just a vocoder, Vokator includes a subtractive analog synth and a flexible sample playback unit.

Mac users; for Windows, you'll want a Pentium III or 4; Celeron, Athlon or Duron running at 1.2 GHz or faster; and at least 256 MB of RAM optimized for your computer. VST, MAS, Audio Units, DXi II, ASIO, Soundmanager and Core Audio interfaces are supported.

There are workarounds that will help with respect to the CPU challenges. Spectral resolution used internally by Vokator is adjustable from 1,024 bands down to 512, 256 and 128. When live vocoding is desired, lower spectral resolution is probably an inescapable requirement to avoid choking the CPU. CPU clog can also be reduced by lowering the sampling rate, which ranges from 11 kHz to 48 kHz.

Bottom line: Vokator emerges as the leader in host-based vocoding in the industry. It's arguably the most advanced vocoder of any kind available today, especially at \$299. Unfortunately, Vokator will beat your CPU like a rented mule, but if your screaming speed machine can spare the clock cycles, Vokator will not disappoint.

Native Instruments, 323/467-5260, [www.native-instruments.com](http://www.native-instruments.com).

*John McJunkin is the principal of Avalon Audio Services in Phoenix.*

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# Chandler Limited LTD-1

## Replicating and Expanding the 1073 EQ/Mic Pre

The Chandler Limited LTD-1 is so close to the original 1073 Neve module that it's almost scary. With its expanded equalizer choices and front-panel DI jack, the LTD-1 is a faithful upgrade of the 1073 from the swinging '60s and *not* someone's idea of what a "new and improved" version of the famed Neve channel should sound like. The LTD-1 sounds and performs exactly like an original or perfectly restored 1073 Neve module.

Like all of Chandler's line, the LTD-1 is hand-built in the U.S. to near-military specs, using the same layout and wiring

the 1073 by four choices. The choices are 270, 390, 560, 820 Hz, 1.2k, 1.8k, 2.7k, 3.9k, 5.6k and 8.2 kHz. The LF EQ and highpass filters are the same as the original: 220, 110, 60 and 35Hz EQ points and 300, 160, 80 and 50Hz, -18dB/octave filter positions. There is 16 dB of boost/cut available for each of the equalizer sections, but unlike the 1073, the LTD-1's boost/cut settings (in 2dB increments) are silk-screened on the front panel. I would prefer a detented center 0dB position that was straight up at the "noon" position rather than pointing downward at "6 p.m."

voices using only the mic pre with equalizers switched out. With both units set to equal gain, there was no difference in level, sound quality or noise.

For the equalizer A/B, I switched both modules over to the line input set to the 0dB position. I mixed the output (L+R) of a CD player and fed it to both modules. With EQ switches out on both units, the sound and level were identical. With the EQ switched in and with no boost or cut, I did notice a slightly lower output level from the Chandler compared to this particular 1073 set the same way. I also noticed a slight decrease in low frequencies



paths of the original Neve channel strips. The cabinet is a nickel-plated steel frame. All pots, transformers and circuit board edge connectors mount to an internal subframe assembly. The unit uses exact replicas of Neve's five original PC boards, even with the same part numbers. All transformers and inductors are the English St. Ives that are used in the original modules, along with Neve-specified BC Series transistors and blue Phillips caps.

### ENHANCED FEATURES

The EQ design is borrowed from consoles that the BBC custom-ordered from Neve, Calrec and Audix, and the unit's nine aluminum knobs have baby-blue centers similar to those used on Neve broadcast modules. The LTD-1 has eight additional frequency choices over the 1073's 11 and is easier to use, as the controls are spread out over the full single-rackspace front panel; no need for those space-saving, but fiddly, concentric pots.

The HF shelving equalizer has 16, 12, 6.8, 4.7 and 3.3kHz positions, while the original 1073 has 12kHz shelf only. The mid section overlaps the HF and betters

The 100k-ohm-impedance, 1/2-inch direct input uses a locking Neutrik connector on the front panel and a switch to toggle between it and the rear balanced-mic input XLR connector. Other switches include 48-volt phantom, EQ in/out and a Reverse switch. All four switches are mounted sideways, with Neve-style, vintage-looking buttons. I'd like to see all of these buttons backlit when in use, along with a power light/switch.

The 22-position mic/line input-sensitivity switch selects, in 5dB steps, gain for either the mic or line inputs. Again, just like the 1073, line-level gain is adjustable between -20 dB and +10 dB, and mic gain starts at 20 dB and goes to 80 dB. A separate Clarostat pot sets final output level.

### IN SESSION

The LTD-1 is powered by the PSU-1 power supply, which will run up to four Chandler products. For my bench A/B, I used a resistive microphone splitter and connected the studio's Neumann M149 to both the LTD-1 and a refurbished Neve 1073 module from Brent Averill Enterprises. I compared both speaking and singing

from the Chandler in this mode. Other than that, the sound and tone of the modules were identical.

I recorded vocals, bass guitar direct and snare (as part of a drum kit) using the LTD-1, and it performed exactly as the other pristine 1073 modules I had on hand: loads of thick, Class-A tone. The DI worked exactly as the Averill unit had. Again, I can't report that the LTD-1 sounded "better," except when I needed more EQ frequencies. The enhanced equalizer makes a big difference when recording certain problem sources, like boxy-sounding snare drums. I normally patch an outboard EQ for these problems, but this time, the LTD-1 came to the rescue.

The LTD-1 is an extremely useful, versatile and worthwhile unit, providing that great Neve sound but with a lot more EQ options. Retail is \$2,100; the outboard PSU-1 is \$100.

Chandler Limited, 319/352-2587, [www.chandlerlimited.com](http://www.chandlerlimited.com). ■

*Barry Rudolph is an L.A.-based recording engineer. Visit his Website at [www.barryrudolph.com](http://www.barryrudolph.com).*



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S E R I E S

World Radio History

# Schoeps CMC 6 xt Mic Body

## The Colette Modular System Goes High Bandwidth

The new CMC 6 xt mic body from Schoeps is the latest update to the Colette modular mic system. The body, which can be powered by either 48-volt or 12V power supplies, can be joined to any of the axially addressed Colette capsules (nine in all) to achieve a frequency response beyond 40 kHz. The matte-gray unit used for the test looked like the standard CMC 6 except for the "xt" (extended) printed at the base near the connector. I paired the xt with the MK 41 universal supercardioid capsule.

### THE TEST

In the past, I've used other extended-range mics such as the Sennheiser MKH-800 and several from Earthworks with good results, so I was interested to try the xt. I had the perfect opportunity to test the mic on a CD project that would involve recording a variety of acoustic instruments at varying sampling rates.

I first used the xt on an acoustic guitar. After having great results in the past with the standard CMC 6, I expected at least the same from the xt and got it. What's easy to like about the xt is the smooth, silky top end and its size; because it's so light and tiny, it's very easy to maneuver into tight spots. It was a winner in this application and became the first-call guitar mic for the rest of the session. I found myself wishing for a pair to try in stereo.

Next, I had various bluegrass players come in for overdubs and used the mic on upright bass, fiddle, mandolin and banjo. For the upright, I used two mics: one cardioid large-diaphragm near the floor, pointing up at the bridge, and the xt up closer to the players' right hand to capture more of the string noise and attack. The combination sounded fantastic and allowed me to mix the lower and upper mics to taste. The detail that the xt afforded at the top was perfect and gave just the right balance that I was looking for. The xt is no wimp on the low end, either. When I isolated the xt, I had a very usable upright track, although I had to

add some EQ at 100 Hz or so because of the mic's placement.

The mandolin sounded great, as well, and when mixed, it cut through the rest of the instruments without sounding harsh; ditto for banjo. Transient response was very good on an instrument that is loud and can tend to be annoyingly harsh. The fiddle was interesting in that I had to mike it closer than I would have liked to because the player was inexperienced and played quietly. The room had some ambient noise that I didn't want to be a factor, so I close-miked this usually scratchy-sounding instrument. The xt did a standup job, giving me plenty to work with later on when I had to add some EQ to warm it up.

An unexpected but revealing use of the mic came when I had to record a small children's choir. I first put up an expensive, self-powered, large-diaphragm vocal mic to do the job and quickly discovered that the kids were overloading the mic (the power of youth!). Unfortunately, the mic had no pad, so I had to make a quick decision, not wanting to lose my short-attention-spanned artists. The xt happened to be up on a stand so I quickly plugged it in and sent it through a Millennia STT-1 mic preamp.

The results were very good and much better than I had expected. It took plenty of level and gave me a track that did not need EQ'ing during the mix.

### CONCLUSION

Frankly, without close A/B'ing with the standard CMC 6, I'd find it hard to discern if I was getting the extended response promised by Schoeps. But



I did have one interesting thing happen that made me an xt believer: On a solo guitar piece, I was working with an acoustic guitar that I had recorded previously on a number of occasions so I was familiar with the instrument. During the session, I put up the xt, got the sound and started recording the track. During playback, I noticed that the harmonics were especially clear, present and bright. I asked the artist if she had changed her strings and she said no, these were old. *Bing!* I found that very interesting and telling, especially because that track was recorded at 48k. In addition, aside from the sonic beauty that the xt captures, it's especially nice to be able to choose exactly the capsule that you want. At \$610 (body only), it's a good deal. I'm sold.

Distributed by Redding Audio, 203/270-1808, [www.schoeps.de](http://www.schoeps.de).

Kevin Becka is a technical editor at Mix.

## Test Signal Chain

**Interconnect:** Hosa Pro mic cable  
**Mic Preamp(s):** Millennia STT-1, Daking 52270B, Focusrite ISA 428  
**Multitrack:** Pro Tools|HD  
**Power Amp:** Crown Com-Tech 400  
**Speaker Cables:** DiMarzio M-Path  
**Speakers:** Westlake Lc 5.75

The room is approximately 13x25 feet with a peaked wooden ceiling, carpeted floor and textured stucco walls with plenty of natural diffusion.

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# The Alan Lomax Archives

## Digging Deeper Into Audio's Past

Not all humans are seduced by new technology. For some, maintaining a connection to loves past—such as turn-of-the-century cylinders and discs—makes sonic time travel possible. Seventy years ago, Alan Lomax went folk-song-hunting, dragging a disc recorder (quite literally) into the field. Rounder Records is slated to release the 90th master of the Alan Lomax Collection as part of an ongoing series that spans six decades. That's a lotta transfers!

Depending on the era, the media sources for Lomax's material vary from aluminum disc in the early '30s, acetate (on glass, metal or paper-based discs until World War II) and then post war, from paper- and plastic-backed tape to vinyl (if the original source was no longer available). Generally, the discs are stored (and transferred) at the Library of Congress, while the tapes reside at the Lomax Library Archives in Manhattan. Tape transfers are either done in-house or at The Magic Shop by Steve Rosenthal. Matt Barton, the archivist at the Lomax Archives, took copious notes on condition, timing or any problems that were noticed during the transfer.

Discs were transferred in stereo to allow more options during the cleanup process; for example, one groove wall may be cleaner than the other. Generally speaking, summing two disc channels to mono greatly reduces turntable rumble and can improve the signal-to-noise by 6 dB. But especially when considering the playback equipment used during the first-half of the 20th century, wear variations in the left and right groove wall can be so dramatic that it forces the engineer to choose one over the other.

To investigate some restoration methodologies, I spoke with Larry Appelbaum, Brad McCoy and Mike Donaldson at the Library of Congress' recording lab. With all of the available resources, they each view the process more like a recording engineer choosing a microphone than like scientists—even though their work is at times more like archaeology—especially when a challenging disc comes along. In that case, having stylus options can help to maximize the signal while minimizing the interference, made all the more challenging by listening “flat,” with no playback equalization. Sometimes, the process yields two or three transfers of the same material, with everyone hoping that one responds best to the least amount of processing.

“Many of the early Lomax recordings were made on a blank aluminum disc,” Donaldson explains. “Whether it was the fault of the machine or the operator, the grooves were, in some cases, extremely



Alan Lomax at the New York Archive, circa 1990

shallow. The discs are not cut, as an acetate disc is, but embossed; at least that is what I was told many years ago. These discs are susceptible to corrosion from moisture in the air or salt from fingertips, so many of them—from being handled over the years and from storage conditions before air-conditioning—have a bit of surface corrosion that sounds like a swish as the disc plays. Amazingly enough, an aluminum disc in mint shape can be hauntingly quiet.”

With restoration projects, cleanliness is essential. “Unless a disc has deteriorated in such a way as to possibly risk further damage by cleaning, a Keith Monks record-cleaning machine is used to remove surface and groove dirt,” states McCoy. “A cleaning fluid is first applied and then vacuum-removed, followed by an application of de-ionized water.

“There is no rule regarding stylus optimization, except to have a selection to choose from and time to evaluate them,” McCoy advises. However, even if the discs are clean, other problems can arise. “It can be hard to find a stylus that stays in a shallow groove,” adds Donaldson. “Sometimes, a microgroove stylus worked [0.5/0.7/1.0 mil]; otherwise, a 2.2mil truncated stylus was used. These are part of a whole series of styli

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hiccupping the playback. Everything must work all the time. The A/V SAN™ from Studio Network Solutions gives me the confidence to focus on the creative flow and not worry about the technology."

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Alan Lomax recording at the Palma Festival, Mallorca, Spain, June 1952.

PHOTO: COURTESY OF THE ALAN LOMAX ARCHIVE

made for us by Stanton. The earlier playback setup included a Stanton 500 cartridge, a Technics SL-1015 turntable and a Stanton 310 preamp set to flat equalization passing through a Neve console."

Resolution is determined by the customer's needs. "For the past few years, we've been making 24-bit transfers for Matt Barton," says Appelbaum. "[Barton] either brings his equipment down or we use our own Tascam DA-45HR DAT recorders. When it comes to file creation and digital preservation, our current standard is [at least] 96 kHz/24-bit." But the analog side is also under scrutiny. "We're constantly upgrading our transfer equipment," says Appelbaum. "For example, we are currently using the Simon Yorke turntable [with Vibraplane] and a KAB Souvenir MK12 phono preamp."

### FINDING THE SOURCE

After loading into a Sonic Solutions workstation, project mastering engineer Phil Klum's first task is to edit the entire project by closing gaps, cutting out unwanted chatter, pulling split pieces of a performance together and removing mic hits. In some cases, it's necessary to recreate something that has been damaged or cut in some way from the source, such as a guitar chord, a missed sung phrase or even a spoken-word section that may be badly masked by damaged media. In the beginning, Klum recalls, any one of these processes took an entire afternoon, but these days, the team can complete

the task within three hours.

With the editing complete, Klum then determines what type of sonic restoration, if any, would be best for any given sound source. In the beginning, Sonic Solution's No Noise program was the primary solution. But after nearly 100 projects, Klum has taken many different paths, from varying types of EQ (analog and digital), using complex notch filtering, manual de-clicking, and alternative de-noising and broadband de-hissing techniques.

After any restorative processing—which, by the way, can take many hours just to test pieces, retry different algorithm settings, etc.—it's time to get to the other mastering chores, such as level, EQ, dynamics (if necessary) and the fine-tuning of edits, fades, etc. Klum comments that level adjustment is not only from track to track, but also *within* tracks, as he often encounters a song that sounds like the record level was radically raised or lowered, almost as though a knob was quickly moved during the recording. Other sections may have up/down level variations in increasing or decreasing amounts, as if the recordings were faded out and then back in, but at quicker speeds than you'd think a fade could be handled. He views such challenges as a sculptor smoothing a sculptor's rough edges.

When the project has advanced to the first reference level, Klum cuts refs for the entire team to evaluate and makes any necessary changes before cutting the master, which, in seven years, has gone from PCM-1630 (in the beginning) to Exabyte to PMCD. Exabyte refers to the DDP for-

mat used as a master medium to ship to the manufacturing plants. It was considered to have very few errors per tape. PMCD (pre-mastered CD) is a format owned by Sonic and Sony. Exclusive to Sonic, a PMCD can only be written on a Sonic DAW: PQ codes are burned into the lead-out of the blank disc. But that was then; many plants now accept CD-R masters as a matter of fact.

It may sound obvious but it's true: There's a fine line between removing unwanted noise and going overboard. Lowering the noise floor or a set of noises beyond a certain point can reveal other noises that may be untouchable. So, again, the goal is a happy middle ground.

"From the beginning, our concern was to preserve the original sources and their integrity by making it as easy as possible to hear what was originally recorded and documented by Alan Lomax, without going to extremes with regard to removing noise, sonic anomalies, etc.," says Klum, summing up the team's philosophy. "The amounts of EQ and other processing have been employed only to 'bring out' what we feel was there originally. Whatever the anomaly, on tape or disc, our goal has always been to go just far enough so that the listener can appreciate—without altering—all of the work Mr. Lomax compiled."

For more information about (and to hear samples from) the Alan Lomax Collection, go to [www.rounder.com/series/lomax\\_alan](http://www.rounder.com/series/lomax_alan) or [www.alan-lomax.com](http://www.alan-lomax.com). ■

For more fun, visit Eddie's Website at [www.tangible-technology.com](http://www.tangible-technology.com).



Alan Lomax (right) listening to playback with banjo player Wade Ward, Galax, Va., August 31, 1959.

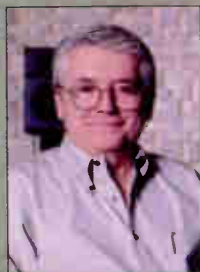
PHOTO: SIMPLY COLLIER. COURTESY OF THE ALAN LOMAX ARCHIVE

DALE

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## Spencer Joins Dale Pro Audio as COO



Pro audio industry veteran Courtney Spencer has joined Dale Pro Audio as chief operating officer. Prior to his appointment at Dale, Spencer served as vice president and general manager of professional

audio for Sony Electronics.

"We are very fortunate to have the opportunity to add Courtney to our team," said Dale Pro Audio CEO Michael Lager. "He has had a distinguished career in pro audio, and brings a wealth of knowledge and experience."

Spencer had been working with Dale as an independent consultant over the last year and a half, and played a key role in improving the overall management strategy of the company.

"In his new role," added Lager, "Courtney will assume overall day-to-day management of the company, and will play a vital role in leading Dale into what we see as a very promising future."

"Dale has experienced significant evolutionary change in the last year or so," said Spencer. "We have revamped and re-launched the web site, added some outstanding veteran sales people, added new product lines including full-line Pro Tools, and rolled out several marketing initiatives including the launch of Dale E-News just a year ago. I am honored to join this team, and look forward to helping build the company to new levels of success."

## THE DALE THINK TANK

Expert Analysis, News & Opinion

Summer 2003

Issue #4



Tim Finnegan

### Tim Finnegan on...

The prevalence of computer-based digital recording and the maturity of software-based plug-ins.

## Pedal Meets the Metal:

Dale and Digidesign Team Up on Pro Tools

When Dale Pro Audio's unique brand of in-depth industry knowledge combines with some of the most sought-after pro audio technology available today, the result can only be one thing: exactly what the customer needs. This is certainly true with the recent announcement that Dale Pro Audio has joined the ranks of the Authorized Digidesign Dealer community, offering the full line of Pro ToolsHD TDM systems in addition to Digidesign control surfaces and Focusrite hardware.

Dale's Pro Tools inventory includes the entire Pro ToolsHD family: Core and extended systems (Pro ToolsHD 1, 2 and 3) and expansion options, 192 I/O and 96 I/O audio interfaces, and MIDI I/O, PRE and SYNC I/O peripherals units. In addition, they also carry Controll24 (pictured) and ProControl control surfaces as well as the full line of acclaimed Focusrite signal processing devices. With Pro ToolsHD as a foundation, Dale is able to offer cohesive customized pro audio and post solutions suitable for everyone from home studio owners to permanent and mobile full-service professional facilities.

A family-owned business for nearly fifty years, Dale's commitment to complementing a broad spectrum of professional products with deep experience and superior customer service makes them an ideal source for Pro Tools systems. Dale's specialists in broadcast, recording studios, project and home studios, and contracting/installed sound,

comprise one of the most experienced pro audio sales groups in the industry.

Dale's sales team includes several people with extensive Pro Tools experience including Tim Finnegan, a recent addition to the Dale staff, and most recently the general manager of Sam Ash Professional in New York City. Alex Guerra, another relatively new member of Dale's sales team, was instrumentally involved in Pro Tools configuration and training at Sam Ash Professional and later at VCA in NYC. James Bentley, Dale's customer

service representative is an experienced Pro Tools user, and Dave Roman, Dale's applications engineer, is

a broad-based expert in digital and computer-based recording and mixing systems.

Dale's veteran broadcast sales team - Mike Descoteau and Joe Prout, supported by sales manager Mike Bogen, all experts in broadcast television audio systems - work with Dale's Pro Tools experts to bring their unparalleled knowledge and experience to customers in the broadcast, cable and television production markets.

"Pro Tools has achieved remarkably wide acceptance by users in virtually all audio content creation segments from music production to radio, television and film post", explains Bogen. "The addition of full-line Pro Tools gives us the opportunity to offer a truly comprehensive product line to our customers, and we will provide it with exceptional customer service and expertise."



## Plug-ins... It's All Inside!



tim@daleproaudio.com

**THINK  
TANK**

Tim Finnegan

The process of audio production has changed. The equipment needed to outfit a 24 track studio has traditionally cost at least a hundred thousand dollars, and often LOTS more! Powerful pro capabilities can now be obtained for less than that, and often LOTS

less! With the prevalence of computer-based digital recording systems of various types, many audio and software manufacturers have been filling the need for more tools to use with these systems. Software-based plug-ins have certainly matured and found acceptance in this new world of audio production. The result has meant amazing capabilities for much less money than their rack-mounted counterparts cost, and all performing their audio magic hidden neatly behind the computer's display monitor!

While all facets of the audio production industry make heavy use of all types of plug-ins, here is where some have

found particular homes:

Music production studios make use of pitch and harmony processors to correct and add vocals (Serato Pitch 'n Time, Wave Mechanics UltraTools Bundle w/Speed, SoundBlender, PurePitch, and Pitch Doctor). Microphone modelers allow the approximation of mics you might not have handy (Antares Microphone Modeler). The same goes for plug-ins that create various electric guitar sounds by combining almost any combination of amplifier heads and speaker cabinets (Line Six Amp Farm, iK Multimedia AmpliTube). Delays, reverbs, EQ's, and dynamics processors from companies like Eventide, TC Electronic, Sony, Focusrite, and many others bring the best of their famous sonic characteristics to your audio workstation environment.

Broadcast and post production facilities rely on sound library management plug-ins (Soundminer, Gallery's Mtools), surround processors (Dolby Surround Tools, Waves 360 Surround Tools Bundle), and ADR programs (Synchro Arts VocAlign Project) to speed up and automate their work flow.

The DJ industry has embraced these products as well. Software-based synthesizers (Access Virus Indigo, Prosoniq Orange Vocoder), and other plug-ins that

allow for actual "scratching" of samples (Serato Scratch) in the computer have broadened their creativity.

Mastering and restoration engineers now have access to Sonic Solutions NoNoise as a plug-in for Pro Tools. Talk about a reduction in price! That's one to look into. And of course the entire product line from Waves is renowned for its diversity and capabilities.

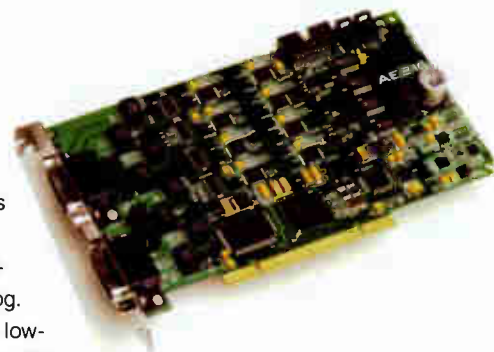
While audio manufacturers continue to develop new and great hardware processors, certainly it can (and will!) be debated how these plug-ins sound as compared to hardware processors. Few people would disagree that they do an amazing job. Aside from sounding wonderful, consider the benefits of every parameter being automated with the mix, recalled and edited any time you want. No need to lug around racks of heavy outboard gear if your DAW is portable. It's all inside!

The remaining challenge is probably making your way through choosing which plug-ins are right for what you need. Dale Pro Audio can help keep you up to date and aware of which are most appropriate for your applications. We can help you narrow down your choices and show you how they work. Give us a call!

## Lynx AES16: "Jitter Killer on Steroids"

Designed for integrating digital consoles, multichannel A/D and D/A converters, hard disk recorders, digital audio workstations and other digital audio equipment, Lynx's new AES16 192 kHz Multichannel AES/EBU Interface is a versatile digital problem solver. The AES16 is a half-size PCI card that provides 16 channels of 24 bit AES/EBU digital audio at 192 kHz sample rate in both single-wire and dual-wire AES modes. It includes a powerful hardware-based 32-channel digital mixer which is controlled by a feature-rich software application. The AES16 is compatible with Windows and Macintosh operating systems. The AES16 is the first product to incorporate SynchroLock, a proprietary Lynx technology that allows the AES16 to produce very low jitter digital audio from severely degraded signals. This insures bit-perfect digital transmission and translates into very low distortion in signals converted to analog.

"Think of SynchroLock as a jitter killer on steroids. By coupling statistical analysis with low-noise clock generation techniques, SynchroLock is able to extract a very clean clock from AES signals affected by long cable lengths and other noise sources," stated Bob Bauman, company cofounder and SynchroLock inventor. "This level of jitter tolerance is hugely beneficial in multichannel studio and live installations." The AES16 also acts as a format converter. Its on-board LStream expansion port accepts the optional Lynx LS-ADAT 16 channel ADAT LStream card. The ADAT Lightpipe signals from this card can be easily routed with the AES/EBU I/O on the AES16."





## Quality Field Recording

The Marantz Professional PMD670 now provides recording solutions for quality field recording and long-term event recording all in one unit. The PMD670 is a compact flash recorder that can handle various levels of MP3 or MP2 encoding or uncompressed 48K DAT quality recording with no moving parts. After a recording is completed, connect a USB cable to the unit and it will appear as an external drive on your computer. You can then select the recorded file and transfer the audio into your computer in minutes instead of real time which will save hours in the studio!

Common applications for uncompressed .wav recording are: field recording for reporters, audio recording for video, Foley/sound effects, and live con-



cert recording. The Compressed MP3 recording modes allow up to 75 hours of continuous recording on a 1 gig compact flash card.

A popular application for this mode is to record an entire day-long event or conference without changing the media. Users can store it on a computer using CDR, and then archive, transcribe and post the information on the web. The Marantz Professional PMD670 has a retail price of \$899.

## dbx Professional Products Used on Four Out of the Five Top Grossing 2002 Tours



dbx Professional Products recently announced that key dbx products have played an integral part in four out of the five top-grossing tours of the previous year. The top touring acts included Paul McCartney and the Rolling Stones and grossed a staggering \$330 million plus in ticket sales alone.

Paul McCartney tops the list with more than \$107 million in ticket sales with dbx DriveRack, Blue Series and vintage 903 series product used in the front-of-house and monitor rigs. The Rolling Stones filled the number two position with almost \$88 million in sales, using dbx DriveRack, 160SLs and 160 Compressors for front-of-house and monitor applica-

tions. Cher's latest tour came in third with over \$73 million and used dbx 160A Compressors in the monitor rig. The fourth highest grossing act was the Billy Joel and Elton John tour with over \$65 million in ticket sales, which used dbx 160 Compressors for both the front-of-house and monitor rigs.

For the Paul McCartney Driving tour, FOH engineer Paul "Pab" Boothroyd was quoted as saying: "I use dbx on everything I do and it's all over the place here. Every now and then, you come across a piece of gear that makes a big difference to your job, and the 160SL Blue Compressor was one of those for me."

McCartney monitor engineer John Roden put the DriveRack 442s through an extensive sound test before his final decision was made. "I'm using a dbx DriveRack for my outboard EQ which is new for me, and it's certainly something I'll be asking for in the future," stated Roden.

## What About Stereo?

How many times have you come back from a field recording job and thought about stereo capture? Probably the issues that have kept you from it are lack of convenience, sound that doesn't compare to your best shotguns, and perhaps cost. Although there have been several different options available, none have considered all these problems at once. Sure, there's the amazing-sounding Neumann RSM 191, but it's not cheap. And there are inexpensive options, but most don't sound good. And even Sennheiser lets you set up a piggy-backed figure 8 mic, and it's a great-sounding system, but it's not so easy to set up and use in the field.

All that has changed now with the introduction of the Sennheiser MKH418-S MS stereo shotgun mic. It is the same physical dimensions of their benchmark MKH416 short shotgun, so it can be used with all the same accessories. It sounds great, and it's easy to use. The output connector is a standard 5-pin XLR male plug, with each capsule output available separately. This is a big bonus when the goal is to capture MS stereo in raw format for mixing later in post. Especially with film, this is a super feature because it's hard to tell how "wide" the sound will need to be to match picture.

And since there are a number of different sources for XLR5F to XLR5M, and also XLR5F to 2xXLR3M, your cabling and connector options are widely available. In addition, there are a number of third party sources for MS matrix devices if need be. For the ultimate in sound quality, the rack-mounted True Systems P2 Analog mic preamp is a fine choice. For something more portable, the Sound Devices MP2 works as a mic preamp, a matrix box, a power supply and a monitoring system (with the addition of headphones, of course). All from battery power!



# Summer Meltdown Clearance Sale

We combed the attic and scoured the basement to come up with a Killer Clearance Sale. This chart contains super special pricing on a lot of popular products. Quantities are limited to stock on hand. All items are subject to previous sale. Some items are new, some are in sealed boxes. Others are either returned products, repairs, or demos. We've done our best to describe each item fairly, but all items are sold as is. We'll be happy to provide more information. Give us a call at 1-212 475-1124 or 1-800 345-DALE.

MANUFACTURER	MODEL/ DESCRIPTION	QTY.	SELL	MANUFACTURER	MODEL/ DESCRIPTION	QTY.	SELL
360 SYSTEMS	D2730 DIGICART II (DEMO)	1	\$2,000.00		TT-1510 TURNTABLE	2	\$88.00
AKAI	Z4 SAMPLER (DEMO)	2	\$1,050.00	OPCODE	STUDIO 3-MIDI INTERFACE	1	\$50.00
	Z8 SAMPLER (DEMO)	1	\$1,400.00	PANASONIC	VARIOUS CARDS FOR DA7 MIXER	12	\$100.00
ALESIS	AM11 MICROPHONE	3	\$250.00	QSC	CX302 POWER AMP (OPEN)	1	\$450.00
	AM 40 TUBE MICROPHONE	1	\$550.00	RANE	GE27 GRAPHIC EQUALIZER	1	\$300.00
	ML-9600 MASTERLINK (OLD MODEL)	1	\$800.00	ROLAND	MC505 GROOVE BOX (OPEN)	2	\$875.00
APHEX	1D7 MIC PREAMP DEMO	1	\$225.00		SP808EX E-MIX STUDIO (OPEN)	2	\$1,100.00
ART	PROCHANNEL MIC PRE/COMPR./EQ	1	\$400.00	SENNHEISER	EVOLUTION 100 WIRELESS LAV SYST (DEMO)	1	\$300.00
	TUBEMP TUBE MIC PREAMP	3	\$75.00	SHURE	LX-4 CS WIRELESS (RECEIVER ONLY)	1	\$100.00
	TUBEPAC PREAMP/CDMPRESSOR	1	\$185.00		RS25L MICROPHONES	36	\$18.00
BEHRINGER	DENOISER SNR2000	1	\$80.00		SC4 WIRELESS (RECEIVER ONLY)	1	\$250.00
	DX500 DJ MIXER	1	\$150.00	SONIC FOUNDRY	PLAYWRITE 480 CD BURNER	1	\$100.00
	HA4400 4-CH STEREO HEADPHONE AMP	1	\$85.00	SONY	C800 MIC ONLY (NO PS)	1	\$2,000.00
	KR2000 2-CH EXPANDER	1	\$80.00		CDRW33 CD RECORDER (DEMO)	3	\$448.00
	DDX3218 32 INPUT MIXER	1	\$998.00		DMX-R100 CONS. W/4 AES CARD (DEMO)	1	\$12,000.00
	DSP1024P DIGITAL VIRTUALIZER	1	\$115.00		MXDD40 MINIDISC RECORDER	1	\$240.00
	MIC2200 ULTRAGAIN PRO	3	\$88.00		WRR850 WIRELESS RECEIVER	1	\$200.00
CAD	VSM1 MICROPHONE (DEMO)	2	\$600.00		RM-D800 REMOTE CONTROL	1	\$200.00
CREST	CA2 POWER AMP	1	\$375.00		MDS-B2P MD PLAYER	1	\$500.00
CROWN	CT210 POWER AMP (REPAIR)	1	\$500.00		TCRW565 DUAL CASSETTE DECK	1	\$175.00
	CE2000 (RETURN)	1	\$488.00	SOUNDCRAFT	SPIRIT MB MIXER	3	\$575.00
	MA1200 POWER AMP (RETURN)	1	\$885.00	STANTON	SK 2 SCRATCH MIXER (DEMO)	1	\$265.00
	MAG02 POWER AMP (RETURN)	1	\$875.00	STEINBERG	CUBASE VST WINDOWS	1	\$270.00
DAS	DS8 8 SPEAKER W/ HORN (REPACK)	2	\$185.00	STUDIO PROJECTS	C-1 CONDENSER MIC	2	\$165.00
DBX	Z66XL COMPRESSOR/GATE (DEMO)	1	\$140.00	SURGE-X	SX-115R POWER CONDITIONER	1	\$185.00
DENVON	DN-C550R CDRW RECORDER (B-STOCK)	1	\$500.00	SYMETRIX	422 AGC LEVELLER	1	\$385.00
	DVM1800P DVD CHANGER (OPEN BOX)	1	\$410.00		301 COMP/LIMITER (DISC)	1	\$110.00
	DN2600F (OPEN BOX)	1	\$800.00	TANNOY	ARENA SPEAKER	1	\$75.00
DOD	SR606 6-CH LINE MIXER/ DA (RETURN)	3	\$175.00		CMS6 6 CEILING SPEAKER	1	\$200.00
ELECTRIX	PDC0111 WARP FACTORY	3	\$85.00		CPA5 SPEAKER	2	\$225.00
FOCUSRITE	P2 PLATINUM TONE FACTORY (DEMO)	1	\$485.00		REVEAL MONITOR	4	125 EA
	RED 4 PREAMP (DEMO)	1	\$2,500.00		SYSTEM800 PASSIVE MONITOR	1	\$500.00
FOSTEX	VF16 16-TR DIG.MIXER/ HD RECORDER	1	\$750.00		SYSTEM800A ACTIVE MONITOR	1	\$1,000.00
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JOE MEEK	C2 COMPRESSOR (DISPLAY)	1	\$225.00		F300W MOUNTABLE SPEAKER SYSTEM	2	\$150.00
	SC2.2 STEREO COMP (DEMO)	1	\$488.00	TUBE TECH	MEC 1A MIC PRE/COMP/EQ	1	\$2,795.00
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MACKIE	SINGLE HR824 STUDIO MONITOR	1	\$575.00	YAMAHA	AS108 SPEAKER (DEMO)	2	\$198.00
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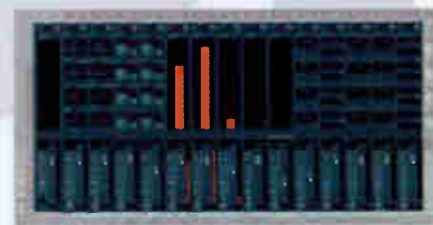
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# STEELY DAN

*Everything Must Go*

It seems like only yesterday that we gazed through the glass at *Two Against Nature*, the landmark comeback album for Steely Dan. Now, *danmeisters* Donald Fagen and Walter Becker—the enigmatic showbiz kids who consistently broke all the rules to create some of the coolest mainstream cult-pop on the planet—continue their ongoing tradition with the band's latest release, *Everything Must Go*.

The album was recorded in a matter of months—an astonishing feat for a band previously known for releasing albums that took years to complete—yet *Everything Must Go* is strengthened by the experience. For this release, the Dan actually cut live, basic tracks with a real band rather than with sonic-assembly techniques, using dozens of session players and scrupulously replaced sounds. And for a band hailed for their forays into cutting-edge technologies, *Everything Must Go* is in many ways a return to their roots, with tight, hook-laden songs recorded with the warmth of tape and a vibe that evokes the best of Steely Dan's earlier works.

by George Petersen

*Everything Must Go* includes a number of elegant touches. Becker returns to play bass with the band and steps up with overdubbed guitar solos on five of the nine tracks. And for the first time since his brilliant—but critically ignored—*11 Tracks of Whack* solo album (1994), we actually hear Becker sing, marking his SD vocal debut on “Slang of Ages,” with its très cool “Spill the Wine”-style groove.

*Everything Must Go* is a stronger album than the Dan’s quadra-Grammy Award-winning *Two Against Nature*. The production is more relaxed and natural-sounding; overall, the songs are better crafted, creating a more consistent package. And like other Becker/Fagen creations, *Everything Must Go* doesn’t immediately grab one by the throat, but after a couple of plays, the infectious hooks on tunes such as “God-Whacker,” “Pixeleen,” “Things I Miss the Most” and the two single pulls (“The Last Mall” and “Blues Beach”) are firmly locked into the listener’s consciousness.

Thanks to the magic of \$1.49/song downloads, the singles were made available a month before the album’s official release, and thousands of eager SD fans responded to the call. This, of course, was followed by a deluge of Internet postings by fans who endlessly debated the meanings (and/or actual wordings) of the lyrics. Speaking of the release, *Everything Must Go* simultaneously came out on CD-Audio, DVD-Video, DVD-Audio and in a European limited release on 12-inch vinyl.

In his January 2003 *Mix* interview, *Everything Must Go* engineer Elliot Scheiner spoke briefly about the project, but for more details, we talked to Becker and Fagen, who offered their insights into the new release.

**What was your overall direction for *Everything Must Go*?**

**Fagen:** We were trying to stretch our apocalyptic aspect a little further than it’s been for a while. This is a good time for that, with us being in the early 21st century and all that.

**The Nightfly focused on the past. This one’s focused on the future.**

**Fagen:** In a certain way. This is the security century, which brings up a whole host of fears. Fears and desires...

**Haven’t those been recurring Steely Dan themes?**

**Fagen:** It has, but somehow, this time it seems to have crystallized in 2003. It feels

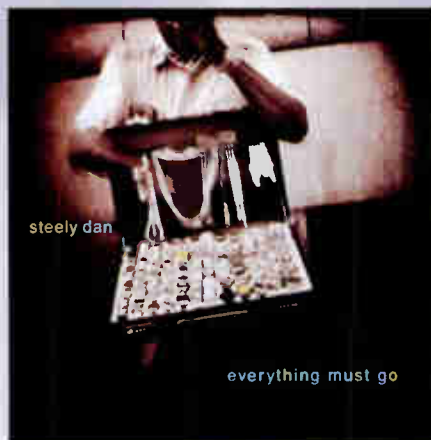
like the century’s chasing us, like having a hellhound on your trail.

**Well, hopefully we’re not all heading into “The Last Mall.”**

**Fagen:** Hopefully not, but these are the fears that need to be expressed. People are usually afraid to say what’s on their mind. *Everything Must Go* sounds like a return to the classic Steely Dan sound of old. For example, “Blues Beach” has kind of a “My Old School” vibe.

**Becker:** I hadn’t thought of that before, but I can see why you’d say that.

**Fagen:** It has kind of a frat house feel...



**Becker:** ...a rollicking, major-key, playful cadence and feel to it.

**Where did you record the album?**

**Becker:** We tracked at Sear Sound in New York, did most of the overdubs at Skyline Studios in New York, and other overdubs were done at my place in Hawaii and at Sear. We mixed at Presence Studios in [Westport] Connecticut.

**Did Elliot Scheiner do all of the tracking and mixing?**

**Fagen:** He did *only* tracking and mixing. **Becker:** We had other engineers—Roger Nichols, T.J. Doherty and Dave Russell—who work at my studio in Maui.

**Fagen:** You know, there was a George Russell, an Irish poet who went by the pretentious pen name AE...

**Becker:** Is that true?

**Fagen:** Yes, and there was also the great jazz composer George Russell, who also wrote the Lydian theory of chromatic tonal organization.

**The tracking was with a live band in one room?**

**Becker:** The basics for each track were cut in one day with the band.

**Fagen:** All of our guys actually sat in a room together and played, like an old-

fashioned band.

**That’s an amazingly advanced concept!**

**Becker:** We thought so.

**Fagen:** It’s also the technique of the future. “There’s no time like the future to get something done,” as Robert Heinlein once said. **And rightly so! But who’s in the band this time?**

**Fagen:** On drums, it was Keith Carlock. Hugh McCracken and John Herrington played electric guitars, Walter played electric bass. I played electric or acoustic piano, Ted Baker played keyboards, too.

**Becker:** On one occasion, when Ted was out of the country, jazz musician Bill Charlap came in as the second piano player.

**After years of working in digital, *Everything Must Go* marks your return back to analog.**

**Becker:** We went *forward* to analog!

**Fagen:** Analog is the medium of the future!

**Becker:** We ended up using analog because we started working at Sear Sound and we loved the studio so much and they only had analog machines there.

**Fagen:** Walter Sear, the studio owner, is deeply into gear you might call “retro,” but since it never really went out, how could it be retro?

**After putting the basics down, did you go to a workstation environment for overdubs and editing?**

**Becker:** We then went to Sony PCM-3348HR...

**Fagen:** [sings blues] I went down to the workstation. I walked down to the workstation!

**Becker:** With an occasional foray into a workstation. Most of the time, we...

**Fagen:** [continues to sing the blues] And met my Jesus there...

**Becker:** And met my digital Jesus there.

**Fagen:** This connects to some of that “GodWhacker” material.

**Becker:** This is a sort of theological...

**Existentialism?**

**Fagen:** *Essentialism*, really...

**Becker:** So where were we?

**I was asking about workstations.**

**Becker:** We did all of the work recording overdubs on the Sony machine.

**Elliot is a big Nuendo fan. Were the workstation parts done in that or Pro Tools?**

**Becker:** We’ve worked in Pro Tools in the past, and I had never worked in Nuendo. And although Elliot kept telling us how great Nuendo was, there were Pro Tools systems everywhere, so we did some work in Pro Tools.

# STEELY DAN

*So did the analog recording account for Everything Must Go's smoother sound?*

Becker: It's partly analog, partly fortuitous and partly Elliot. He's got taste, and what he does is very distinctive.

*What format did you mix to?*

Becker: We came out of the Neve [at Presence] and went to analog tape and also to an Alesis Masterlink, fed by some high-res outboard converters.

*Did you record 15 or 20 songs or just nine?*

Becker: We had two good tracks left over, along with some partial songs and false starts...

Fagen: One was too slow and draggy. The other was too fast.

*How is that you guys manage to keep such a consistent sound using so many musicians in different studios during the years?*

Becker: By now, the new musicians have heard all of our old records and they fall right into it.

*Part of that consistency comes from the horn parts and arrangements. Who did them?*

Fagen: I do them, but Walter helps, as well. I used to listen to a lot of Oliver Nelson records in the '60s, and I like Thad Jones' arrangements, but really it's home-made. I never really studied horn arranging, so I just make it up.

*So you go into the studio with all of the finished charts written up?*

Fagen: Pretty much; sometimes, we do a little rewriting in the studio, but I write them out in advance, with the voicing and general layout.

*Does that also apply to backup vocals and harmonies?*

Becker: A lot of those are just done all at once. We figure them out on the piano in the studio. We usually use close-voicing, like everybody else in the rock 'n' roll world, but as the chords are more interesting, we get some interesting dissonances.

*On Everything Must Go, Walter's back to playing bass. It's kind of a return to the old Steely Dan days.*

Becker: Yeah. It was a real flashback and I'd almost forgotten how much fun it was to play the bass and what a great job it is to play bass in a band full of great players. Actually, the reason I stopped was

back in the L.A. days in the '70s, the players were getting a little too hot for me. I remember sitting in a room playing with Jim Gordon and Michael Omartian and Dean Parks, and I realized that someone else should be sitting in that chair, and his name was Chuck Rainey. Nowadays, Chuck lives in Dallas, so I've been playing the bass again, and what we're trying to do musically is a little different, so it lends itself to me playing bass again. I loved doing it. It was great.

*On "Slang of Ages," we finally hear Walter Becker singing on a Steely Dan album.*

Becker: For years, I've been offering to sing a song, knowing full well that I'd avoid it at all possible costs. And due to the range difference between Donald and myself, I could never sing on one. But on the track we'd cut for "Slang of Ages," the verse was a free verse and I could sing the



PHOTO: DANIEL GLENCH

chorus melody down one octave, so I could actually sing a song that had been meant with Donald in mind.

*This whole thing was an accident?*

Becker: It was originally meant for Donald, but when we got down to it, I realized I could sing it and felt I should do a share of the work, because singing is a huge proportion of the studio time. Another way that "Slang of Ages" was suited more to me than Donald was because it doesn't have a written melody for the verse and Donald doesn't like doing songs that are like that. I ended up doing it because I could, and I should if I could.

*Will there be more Walter Becker vocals on the next album?*

Becker: Not if I can help it, because Donald is a much better singer than me. His style and his range and approach is a large part of the band's characteristic sound. He's the frontman; I'm the guy behind the guy.

*What are some of your feelings about surround sound and high-res release formats?*

Becker: Regarding surround sound, I

know musicians too well to want them behind my back. But because of the additional speaker separation, the surround mixes I've worked on can make 2-channel sound somewhat low-fi by comparison. But I still prefer stereo overall. The music holds together better.

It's funny, but as the sonics improve, the focus on music doesn't improve. For example, there are a lot of ways to record piano, and a lot of people do much better piano recordings than Rudy Van Gelder ever did. But when you listen to a Van Gelder piano recording, you're listening to the sound of the guy's piano and the notes in his solo. When you listen to more hi-fi recordings of pianos, you might hear more high-end detail and clarity, but you may be listening more to the overtones of the piano and less focused on the intention of the musician, which is in the fundamental pitches of the notes, rather than the often-clangorous overtones.

*That's one thing I've noticed with a lot of modern musicians who are sometimes more concerned with the sound of the patch or setting than the overall performance. If you sat Ray Charles down on a Rhodes piano, magic could happen. And if you sat Chick Corea down in front of that same piano, it's a completely different—yet wonderful—sound.*

Becker: I remember going to a concert at Hunter College when I was a teenager in New York. There was a jazz pianist named Billy Taylor—who was also a promoter and DJ—and he had a show with himself, Mary Lou Williams and Thelonious Monk. One after another, they sat down and played the same piano and it was amazing how different the piano sounded. In fact, when Monk played, it didn't even sound like a piano anymore! It's the same with guitar, drums and anything else. I think that's one of the unfortunate by-products of the fascination with and proliferation of technologies now: It's essentially a distraction from music and its fundamental aesthetic considerations.

*Everything Must Go must be one of your fastest album productions ever.*

Fagen: We're not getting any younger...

Becker: ...And we don't want our next album to be finished by our estates!

*We're almost out of time. Do you have anything else to add?*

Fagen: Don't buy a hat through the mail!

Mix **ONLINE**  
EXTRAS

Mix editorial director George Petersen is also the co-author of Crazy Campsongs ([www.crazycampsongs.com](http://www.crazycampsongs.com)), a slightly whacked collection of sing-alongs for modern society.

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**EVANESCENCE**  
AN ENDURING SOUND

**By Bryan Reese**

When Evanescence guitarist Ben Moody calls *Mix* from the road, his band is setting up at a Milwaukee venue called The Rave. "I'm walking around a haunted building at the moment," he reports. "I saw a shadowy figure out of the corner of my eye. We've been investigating for about an hour now." Evidently, The Rave is located within an old Masonic building called The Eagles Club that also houses three other venues, including a ballroom on the roof. Boarded up in the basement is a large old pool that Moody half-jokingly deems "the epitome of evil."



It is appropriate that Evanescence are headlining at this supposedly haunted facility, considering that they perform a gothic-inflected strain of heavy rock with a European flavor, augmented at times by strings and choir, and influenced by the likes of Nine Inch Nails, Portishead and Type O Negative. Their theatrical music has taken them from their hometown of Lit-

tle Rock, Ark. to around the globe, thanks in part to the inclusion of two songs in the hit movie, *Daredevil*. Propelled by the grandiose and moody single "Bring Me to Life," which features a dramatic trade-off between singer Amy Lee and 12 Stones frontman Paul McCoy, the group's Platinum debut album, *Fallen* (Wind-Up), immediately cracked the top echelon of the *Billboard* charts and has stayed there ever since. Evanescence is currently in the midst of a headlining tour that will last through the end of 2003. For a new band in a weak economy, that's definitely impressive.

Recorded and mixed between late August and early December of last year, *Fallen* is the culmination of eight years of passion and dedication for Moody and Lee. The duo has been writing and playing music together since they were 14 years old; early on, they even envisioned the string section and choir that permeate many songs on their debut. While the twosome have been pegged as "nu-goth" by *Kerrang!* magazine, they choose not to compartmentalize themselves. "We didn't really try to be goth or pop or anything," says Moody. "Honestly, we just write what we want to hear, and we like catchy music."

While it contains electronic elements indigenous to many of the band's influences, *Fallen* maintains an organic feeling. "I didn't want it to sound too fabricated," comments Moody. "I love electronics and I love digital manipulation, but I

—CONTINUED ON PAGE 134



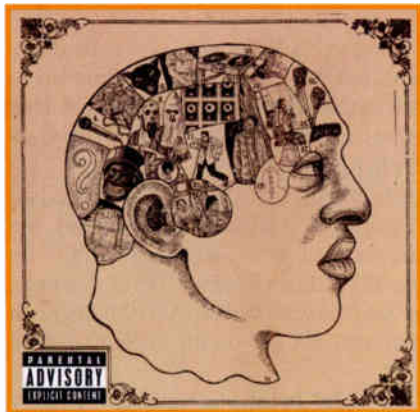
# THE ROOTS

BREAKING THE HIP HOP MOLD

By Chris J. Walker

As one of the few actual performing groups in hip hop, The Roots have been enormously influential and successful during their 12 years on the scene. Not only do they break the mold by actually playing instruments rather than relying on tapes, but they have also demonstrated a flair for the experimental: taking part in adventurous crossover collaborations and not limiting themselves to any particular genre, but thriving *because* of their sonic diversity.

However, success did not come early or easily for the Philadelphia-based group, which was strongly influenced by the pioneering use of live instrumentation in hip hop by Pharcyde and the Brand New Heavies. Initially, founding members Ahmir Khalib “Questlove” Thompson, an extraordinary drummer, and vocalist/rapper Black Thought (Tariq Trotter) didn’t even have the money for standard rap/hip hop gear, such as a sound system, turntables and microphones. So they formed a real band, adding bassist Leonard (“Hub



Hubbard and rapper Malik B. The present lineup also includes keyboardist Kamel Gray, DJ Scratch, guitarist Ben Kenney and human beatbox, Rahzel. Their first four albums drew critical acclaim and respect from peers, but sales were not stellar and, during that period, The Roots were thought of primarily as an underground act.

Their 2000 release, *Things Fall Apart*, dramatically changed that preconception.



The Roots are, from left, DJ Scratch, Questlove, Black Thought, Hub and Ben Kenney.

The CD went Platinum, and for the past two years, the band has virtually lived on the road, with minute blocks of free time in between marathon tours. It’s a testament to their eclecticism and diverse following that they’ve toured with the likes of Dave Matthews, Nelly Furtado, Jay-Z, Musiq, Jill Scott and Moby, to name a few. On the other hand, the heavy schedule of appearances, along with the demands of individual side projects, has afforded them little time to record *Phrenology*, the much-anticipated follow-up to their breakout album.

“It was about us being meticulous,” stresses Thompson during a soundcheck at the House of Blues in Anaheim, Calif. The backstage area at the club is filled with a discordant mix of musicians tuning up and trams for the Disneyland concourse whizzing by. “The song ‘Rolling With Heat’ took about nine days for me to get the drums right. Every note and cranny on that record was thought out, even the maracas on ‘Quills.’”

Thompson doesn’t consider himself just a musician, producer and engineer, but rather a sound designer. He is also something of a music historian, with a mind-boggling collection of more than 30,000 records on vinyl alone. In conversation, he cites a variety of discs—from landmark to esoteric—as influences and references with which to navigate The

Roots’ musical philosophy. “Prince’s *Dirty Minds* had eight songs; *Thriller* by Michael Jackson, 10 songs; and *Inner-Visions* by Stevie Wonder was only eight or nine songs,” he notes. “It hit me that every classic record is about a half-hour or 33 minutes at the most. That’s not even song number five on my records. Here we are bashing ourselves over the heads, trying to balance these gargantuan 16-song statements. So in the beginning [of *Phrenology*], our statement as a group was going to be a simple record, but not in the center. It’s definitely left [experimentation] and right [pop mainstream]. Our interpretation of right is the Nelly Furtado song ‘Sacrifice,’ which is still unlike anything on radio today.

“Basically, we wanted to appeal to the public and sort of push the envelope, too,” he continues. “We felt we had an audience waiting for the next move, and instead of offering them what they expected, we sort of sucker-punched them. You don’t want to be too over-ambitious and be accused of being pretentious and too artsy. Then again, you’re expected to make a statement. But the one you make, you’re not sure the world is ready for.”

After years of working at Sigma Sound in Philadelphia, where they were tutored by legendary engineer Joe Tarsia and oth-

—CONTINUED ON PAGE 138

## PATSY CLINE'S "CRAZY"

By Barbara Schultz

No one could touch her. Her voice was one of the most ravishing instruments ever recorded. Her life and her career? Well, they were a bit checkered, but Patsy Cline sang like a goddess, and "Crazy" was her masterpiece. Hers and Owen Bradley's.

The connection between Cline and the now-legendary producer came to pass toward the end of a series of bumps and breaks in Cline's short life. Cline, who was born Virginia Patterson Hensley in 1932 (her stage name came from her middle name and the last name of her first husband, Gerald Cline), was driven to become a country singing star from pre-teen age. Her biographer, Ellis Nassour, quotes her mother, Hilda Hensley: "Virginia was dedicated. She had to be. I told her she was picking the most competitive business in the world. In those days, it was difficult for a woman no matter what she wanted to do, but country music was dominated by men. It would be especially tough for a woman, but there was no talking her down."

Cline talked her way onto a regular radio spot on station WINC in her hometown of Winchester, Va. at the age of 14. At 16, she convinced radio performer Wally Fowler to arrange an audition for the Grand Ole Opry (though she didn't actually land a spot until years later). And throughout her teenage years, she performed with Bill Peer and his band in clubs, lodges and bars, becoming well known for her striking, womanly stage appearance, as well as for her voice.

In her early 20s, Cline won first prize at the National Country Music Championships in Warrenton, Va., which were sponsored by Connie B. Gay, a promoter from Washington, D.C. That triumph resulted in a regular spot on Gay's radio program, *Town and Country Time*. It was a huge break for Cline and led to her first recording contract with Bill McCall and Four Star Records.

The contract with Four Star was a terrible deal, which Cline signed gladly without reading it carefully. The fine print stipulated that Cline record only material owned by McCall's publishing company, and she incurred all of the recording expenses. But Four Star also had a recording/distribution deal with Decca, where Decca VP Paul Cohen would control the sessions and choose Cline's producer: Owen Bradley.

Cline's career might have taken off at that point if it weren't for the inferior material she was obliged to record. Her radio performances on *Town and Country Time* and, by then, as a guest on the Opry-broadcast Ernest Tubbs show had gained her an enthusiastic fan base, but her records were not selling and her expenses were mounting. When she went to Connie B. Gay for a raise, he turned her down flat. "She referred to her contract with Mr. Gay as a 'Hitler contract,'" Hilda Hensley told Nassour. "Patsy went to him and asked for a raise. He informed her she was being paid more than enough for a woman in the business." When Cline approached McCall for an advance



on her royalties, Nassour writes, he replied, "You don't have any. Your records haven't earned one red cent!" He then convinced her to sign a contract renewal in exchange for a \$200 loan.

Cline was recording in Nashville with Owen Bradley's "A" list of musicians, but the songs she was permitted to sing did not match her immense talent, and what little profit she might have gained went to pay for the expenses she incurred under her contract.

"Bill McCall made her do his songs, the ones he had in his publishing company," confirms Harold Bradley, the most-recorded guitarist of all time and brother to Owen. He played guitar on all of Cline's sessions. "In all that time, I think the only hit we had was 'Walkin' After Midnight' in 1956. That's the one that got her on the *Arthur Godfrey Show*."

"Walkin' After Midnight" became a Number 2 country hit and went to Number 12 on the pop music charts, but Cline's sales continued to flounder after that, until her contract with Four Star finally ended and she signed with Decca Records in 1960. Then, she and Owen Bradley really started to make magic in the Quonset Hut.

Owen and Harold Bradley's much-celebrated studio opened in the mid-1950s, largely because the brothers planned to get into recording for film. The music studio built into an existing house and a Quonset Hut was added onto the back to be used for film work. However, when the music area proved too small to record live—the way projects were done then—the operation began to take over the back building. By the time Cline signed with Decca in 1960, the Quonset Hut was established as Owen Bradley's main recording room, and he had developed the formula that

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World Radio History



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amounted to what is now simply referred to as the "Nashville Sound." The first single Cline recorded on her new contract was the Number One charting "I Fall to Pieces."

"My brother always stayed with the same players, those same guys," says Harold Bradley. "I saw an interview one

time when the interviewer asked, 'Why didn't you change musicians, change studios? You all weren't getting any business, and you didn't know Patsy would sign with you because you only had one hit.' And he said, 'It's like the girl in the sweater: It just depends on what you put into it. We just changed songs. We

## Cool Spins

### The Mix Staff Members Pick Their Current Favorites

#### Les Nubians: *One Step Forward* (OmTown)

Playing off some of the same energy they projected on their debut album, African/French sisters Celia and Helene Faussart have taken some creative risks and made great musical strides during the past five years.



Their sophomore release—aptly named *One Step Forward*—is not only beautiful to listen to, but it divulges portraits of their lives and comments on the larger political and philosophical issues that motivate their music. If you happened to miss out on their well-received *Les Princesses Nubians* CD in 1998, this is the perfect chance to get acquainted with them. The sisters sing primarily in French and are backed by sensuous R&B, jazz and hip hop rhythms. The new release demonstrates the duo's evolving artistic sensibilities by infusing reggae, soul and rap into their repertoire, including Spanish and English vocals; and bringing in a host of guests, such as Talib Kweli and I.G. Culture. Sometimes, the layers of vocals overtake the track's focus and rawness, but I find the distraction muse-worthy. I have to wonder what kind of clarity will come to their next venture because of their current experimentation.

Producers: Mounir Belkhir, I.G. Culture, Les Nubians. Engineers: Belkhir, Dave Dar,

Tkae Mendez, Demus. Mixer: Demus, Lee Hamblin.

—Breean Lingle

#### Punk Jazz: *The Jaco Pastorius Anthology* (Rhino)

Supremely gifted, but also troubled, Jaco Pastorius came onto the music scene in the '70s like a ball of fire. His unique approach to bass influenced generations that followed him and colored every song he played on; he was truly one of a kind. This superb two-CD set brings together tracks from every phase of his career and amply demonstrates just what was so magical about Pastorius: not just the jaw-dropping pyrotechnics (though there's plenty of that), but also his intense lyricism and his considerable gifts as a composer. The anthology gives only a cursory nod to his best-known period—as member of Weather Report—in favor of showcasing songs from his solo albums, most notably the classic *Word of Mouth*, represented by six tracks. There are also fine tunes from collaborations with Pat Metheny, Flora Purim,



Airto, Joni Mitchell and others, and a number of sizzling live tracks that showcase his skill (and his bombast). This guy had chops and attitude to spare. Too bad he flamed out so early.

Many producers, engineers, studios. Compilation produced by Barry Benson, Ricky Schultz, Nick Sahakian. Remastering: Steve Pokorny and Don Hersh/Digiprep.

—Blair Jackson

—CONTINUED ON PAGE 141

# 75 years later... Nothing has Changed!



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(Left to Right) Tube mics: Original UM57 (1957), UM57 V.E.B. (1972), and today's Gefell UM92.1S



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started doing better songs.”

The Bradleys' studio was then equipped with a 3-track console purchased from Decca and selected by Owen Bradley and renowned engineer Glenn Snoddy, the technician who had built the studio's first stereo board. “We went to see a 3-track console that they had installed up there [in New York],” Snoddy told *Mix* in a 1988 article on the history of Nashville recording. “They had built two or three of those units and Owen wanted to get one of them in Nashville. On the plane coming back from New York, Owen and I drew out the control room design on a piece of paper. By the time we got back from New York, we had that pretty well fixed and started to tear into the Quonset Hut, building a place to put this console. Shortly thereafter, it was shipped down.

“Three-track changed things dramatically, because now we could really do some production work in stereo, although we did not do a lot with the stereo. We were still making mono records, essentially, because that's what was selling. You were recording, mixing and listening to mono records because that's what radio was playing and that's what everybody depended on to get the hit.”

The 3-track actually became extremely important to the sessions for Cline's next single, the Willie Nelson-penned “Crazy.” Work began on the song in mid-August 1961, with Owen Bradley producing and engineer Selby Coffeen behind the board. There are varying reports as to how the producer convinced Cline to record the song, which, by all accounts, she initially considered irritating. However, she had agreed to put the song on her second album. But Cline was still recovering from a near-fatal auto accident for which she had been hospitalized for a month. She arrived at the Bradleys' studio on crutches. Cline sang well on a few of the other songs that she and the musicians were scheduled to record, but when it came time to sing “Crazy,” she just couldn't get through it.

“Her ribs had been broken, and she couldn't hold the notes out,” recalls Harold Bradley. “When we were doing this, there were no overdubs. She had to do it all live, and we all had to do it all live. By that time, we had progressed to 3-track, but they wouldn't put anything in the middle. They put the band and the



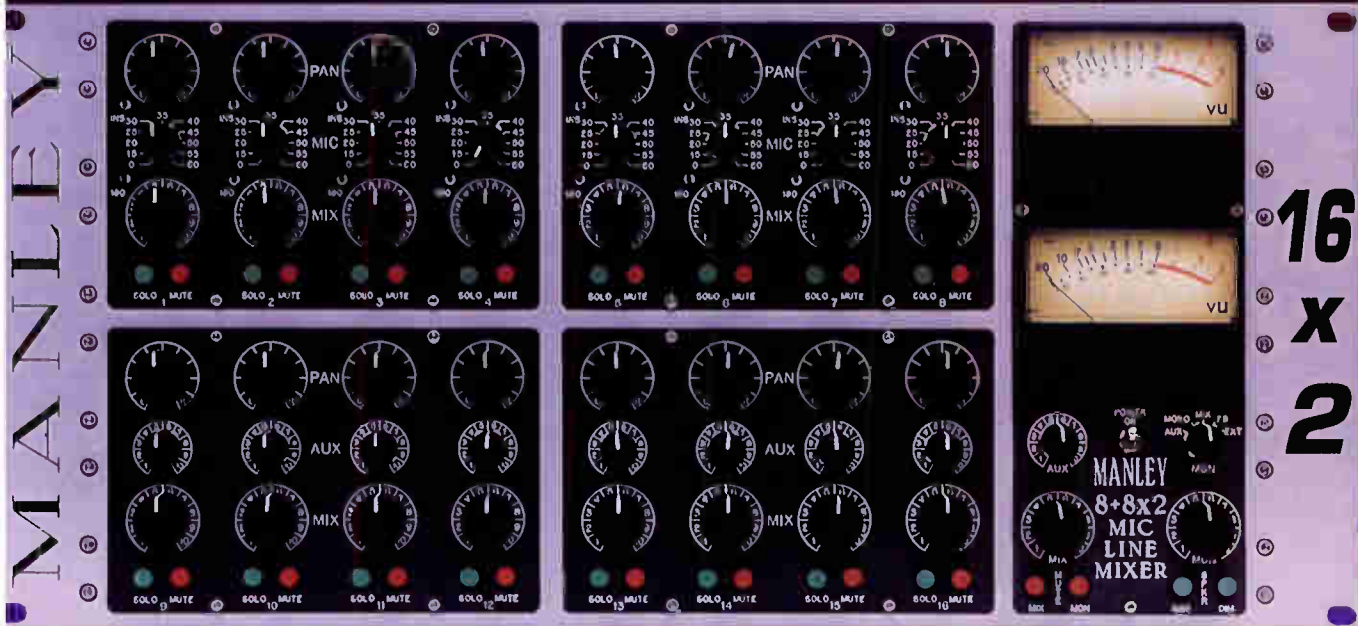
“Crazy” producer Owen Bradley with the 3-track console.

voice and spread everything left and right. But on this particular session, Patsy couldn't sing with the band. The 3-track allowed them to record her [later] and not lose any quality on the tape. [Coffeen] was able to put her voice in the middle. We would have lost a generation if he had played it back and transferred to another tape [to add her vocal].”

So, the first sessions for “Crazy” turned out to be music-only—how strange for 1961—with Owen Bradley, the seasoned producer and keyboard player, directing the sessions from behind a small Hammond organ. Harold Bradley recalls the configuration of the musicians, who were set up much the same way on all of Cline's sessions: “If you think of it as a rectangle, and you're looking at the back of the rectangle,” he says, “that was the entrance to the studio from the alley. Right beside that door was the control room, and then it was a big, open studio back there. Patsy would have been one-third of the way away from that door, and I would have been at the very back; the amp that I was playing through would have been set up at the very back. [Piano player] Floyd Cramer was about two feet in front of me, playing piano with his back to me, and [bass player] Bob Moore would have been four or five feet over to my left, and [drummer] Buddy Harman would have been four or five feet over from his left. And right across from Patsy, as she was standing facing us, to her left would have been [backing vocalists] The Jordanaires.

“My brother came up with what we called the ‘shed houses,’” Harold Bradley continues. “The drummer was in a little house, and then he had a big baffle between Bob Moore and myself and the piano. It was roughly four feet high and a long board of some kind with rollers on it. The amps, which were on the other

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side of the room, had a baffle behind them to keep from going into her mic."

"That was the beginning of isolating sections," Snoddy said in 1988. "These items were in the studio, and it was kind of a setup where we could pretty much leave it for the next session."

The acoustics of the ultralive Quonset Hut had been improved by some impromptu decorating that was done for a film project. "We'd had a problem, because we had a ping off the tile floor, and also to trap the bass, they put big curtains in the corners, and then the most fortuitous thing happened to us," Harold Bradley recalls. "A guy came to us and wanted us to film some Grand Ole Opry 35mm color films in the Quonset Hut, and so they wanted to build part of the interior of a barn. Along each side where it was concrete block, they built wood all the way down the sides so it would look like the sides of a barn. And at the very end, he built a barn door, and that wood evened out the sound. We never took it out. It absorbed all of the right sounds, but it was still live enough that you could hear everybody. I could hear Patsy very well from where I was. Acoustically, it was a wonderful room to play in."

The musical arrangement for "Crazy" was one of Owen Bradley's first attempts at straddling the fence between country and pop music, the sound that eventually came to be known as "countryopolitan." "We were following up 'I Fall to Pieces,'" he told *Mix* in '88, "and the record company felt it was a little too country, so they asked if we could make the next one a little more acceptable to cosmopolitan stations. We left off the fiddle and the steel. I think most everything you hear is Floyd Cramer on the piano. If you listen real, real close, because I didn't let them turn me up, you can hear me. I'm just playing chords on the organ."

After recuperating for two more weeks, Cline returned to the studio to record her vocal and nailed it in one take.

"That was the magic session," says Harold Bradley. "It was the toughness of it—and the magic of it, too—that made it an incredible session. Neither one of them wanted to do anything else with it. They said, 'That's it.'"

Patsy Cline scored more hits with Decca in the brief time between the success of "Crazy" and her death in a plane crash in 1963. She also had a number of posthumous hits, as Decca continued to release whatever Cline material they had after her passing. Her *12 Greatest Hits*,

which came out in 1967, is still the top-selling hits collection by a female country artist and has spent the most weeks on the *Billboard* charts of any album. Patsy Cline was inducted into the Country Music Hall of Fame in 1973; she was the first female solo artist to be chosen.

Cline's work is part of the amazing legacy that Owen Bradley left to country music. His recordings of Webb Pierce, Loretta Lynn, Brenda Lee, Marty Robbins, Ernest Tubbs and so many others, as well as his own piano work, and the innovations he brought to studio work, in general, earned him a place in the Hall of Fame the year after Cline's induction.

"I'm a block away from the park named after my brother," says Harold Bradley, who still plays and serves as president of the Nashville chapter of the A.F. of M. "He's sitting there at a piano that weighs 1,200 pounds, and he weighs 800 pounds. He did think that dying revived Patsy's career, but the quality was there; and now, every girl country singer that comes to town, that's the standard right there. Patsy Cline singing 'Crazy.'" **Mix**  
**ONLINE**  
**EXTRAS**

## EVANESCENCE

FROM PAGE 126

wanted to first establish us as a real rock band. We're actually playing all of those parts: The strings are real, the choirs are real, the piano is real."

"I think one of the most positive features about [the album] is that it's like watching a movie from front to back," remarks *Fallen* producer Dave Fortman, who acknowledges that many radio stations were at first resistant to a rock band with a (gasp!) female singer. "Some areas waited and waited and waited until the proof was really there. KROQ L.A. was one of them. Within the first three days of them trying the song, it was already Top Five for requests on the phones. People were freaking out on it."

Louisiana-based Fortman, who has worked with 12 Stones, Boysetsfire and Superjoint Ritual, was impressed with Evanescence when he heard the initial demos, and his admiration of the group grew during the recording process. "One of the greatest parts of this record was the band's vision and their dream about it being theatrical and like a movie soundtrack," says Fortman. "I think that gives it a special emotion, really. Every song takes you through this journey."



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World Radio History

Recording work for *Fallen* started at Ocean Studios in Burbank, Calif., where most of "Bring Me to Life" was recorded for the *Daredevil* soundtrack, prior to full album production. For that tune, Jay Baumgardner banged out the mix at his studio, NRG Recording Studios in North Hollywood, on an SSL 9000 J.

*Fallen* is an album built on overdubs. Drums were tracked at Ocean Studios, with Josh Freese playing to a click, stereo guitars and scratch vocals on select songs. "If it was more of a rock 'n' roll band like the Black Crowes, you definitely want to

set them all up and [record live] and try and make everything on there magic," explains Fortman. "But for something that has the depth of production that Evanescence does, it's definitely more of an overdub situation. This type of record should be done to where it sounds larger than life."

In recording Freese's drums, Fortman used, on the advice of Ocean's engineer Dean Nelson, C12As for overheads. "That was a real big discovery," says Fortman. "I thought those were some of the sweetest-sounding overheads ever. And a trick I stole from Jay Baumgardner was using

[Audio-Technica] ATM25s on toms. They're awesome. It's like magic. That through an 80 Series Neve pre, and I could almost just put the fader up and call it a day."

On the rest of the kit, Fortman used a D112 on the inside of the kick drum, a U47 on the outside, plus an NS-10 *speaker* as an outside mic, an idea he also got from Nelson. The producer ran 414s on the ride cymbal and hi-hat. "I can't remember what the room mics were," the producer admits, "but it was real basic: about 15 feet out in front of the kick, right about ear level, maybe a little lower." Fortman recorded the drums onto 2-inch tape on a Studer machine and then bounced the parts into Pro Tools, the medium for most of the album.

The guitars for *Fallen* were cut at Mad Dog Studios, also in Burbank. Moody says that Baumgardner lent him gear, including his Les Paul and Gibson SG guitars, Marshall and Mesa/Boogie heads, and an old Mesa/Boogie cabinet. "It was an old cabinet that was tried-and-true on rock records," says Moody. "It was a no-brainer to use it. I know it was used on Papa Roach and, I think, Staind. The heads were just the JCM 800, which was all souped up and modified, [and] a Mesa/Boogie Dual Rectifier Trem-o-Verb."

For the first time in his producing career, Fortman recorded the guitars through two different amps: one side being Marshall and the other Mesa/Boogie. "I doubted it forever," he confesses, "and then I decided during the Evanescence recording that I would actually A-B it and see if there was really that much of a difference." He recorded the Marshall amp for both left and right sides, EQ'ing it to sound heavier than usual. "Then I A-B'd it by using a Mesa on the left side. The differences tonally and with the different frequencies in the two different amps really do create a larger stereo feel. It was amazing to hear." The producer recorded the guitars with two Shure 57s, running them through Neve 1081 preamps straight to Pro Tools.

Bassist Francis DiCosmo, who had a "really off-the-wall amp," according to Fortman, was recorded with a U67 set back six or seven inches from his cabinet and through an Avalon U5 DI/pre into Pro Tools.

When it came to recording Lee's vocals at NRG, the group tested out three mics: the Telefunken Elam 251E, the AKG C-12 and the regular Neumann U47 tube mic. The U47 won. "That one seemed to have the classic presence," reports Fortman. "It sounded really good on Amy's voice. I love having that type of luxury, where

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you can record something from each mic, have everybody sit down and take time to choose." The vocal chain was a U47 through 1081s Neve preamps to an 1176 Blackface.

Most of the piano on the album was also recorded at NRG. Fortman used a pair of U67s spaced approximately three to four feet apart, one for the high strings and one for the low strings, facing down between eight inches to a foot above the strings. The piano parts were performed by David Hodges, the other main performer on the album beside Moody and Lee. Hodges also played a variety of keyboards recorded directly through Avalon DIs into Pro Tools.

Throughout the recording process, Fortman worked on various Neve consoles, which he says were integral to the overall sound: "Probably the most important part of getting that 'sound of strength' is the 80 Series Neve, which, to this day, is still impressive to my ears. They all have small differences, but especially at NRG, everything you listen to and everything you record just has this bigger-than-life quality. That's definitely my favorite place to record. Jay just has



the gnarliest monitoring system ever."


Adding to the album's grand feel and gothic flavor was the inclusion of strings on a few tracks, notably "Bring Me to Life" and "Imaginary." A 22-piece string section was recorded in Seattle by Mark Curry. They were later mixed at the Newman Scoring Stage and Bolero Studios, both in Los Angeles. The orchestra parts were arranged by Hodges and David Campbell, except for "My Immortal," which was done by veteran Hollywood composer Graeme Revell.

"I forget which Sony condensers were for the main overheads, but they were done in just a regular spaced pair, probably eight feet in front of the entire string section, then probably six feet apart, maybe up to 10 feet," says Fortman. "In the

back, we used U87s on lower strings, possibly U47 back on the basses. There were close mics for each section and a stereo pair for the overall. There were around 12 tracks. At mix, I mostly used the stereo pair, especially during dense sections of songs. However, the intro to 'Imaginary' is a section where all of the mics are in."

Following the recording of the strings, the final piece of the aural puzzle was recording the Millennium Choir at NRG. Fortman ran a stereo pair of U67s to capture their voices, and later the 12-member ensemble was doubled or tripled to give them a larger sound. "During the bridge of 'Imaginary,' there are probably 70-plus people performing on the song at that moment," explains Fortman. "There's a choir that's been doubled, there is a string orchestra with 22 players doubled, then you add all of the bandmembers, and it's huge. That section has so much depth to it. There's no purpose to look at it as a live band at that point."

For Moody, to finally hear real orchestration to Evanescence songs was a dream come true. "It was surreal and amazing," declares the guitarist, who originally used keyboards on his demos in place of real




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strings. "It was just awesome to hear that, for once, done right. Amy and I were both a little teary." Adds Fortman: "Just to hear that happen to the music in the room, it was an emotional experience. It was amazing. You could just feel the energy in the room."

Following the multiphase recording process, Fortman spent nearly two weeks mixing *Fallen* on a Neve 88R console at Conway Recording Studios in North Hollywood. "I was impressed," he says. "They say it's got the low end and the stickiness of an 80 Series Neve, but with the brightness of an SSL 9000. That's exactly what it sounds like. It's really compatible to any of the high-end SSLs." Following mixing, the album was mastered by Ted Jensen at Sterling Sound in New York City.

"I was surprised by how smoothly it went and how much fun we had," Fortman states. "I've always read that a lot of friction makes a great record, and I left California thinking, 'God, was that too easy?' There was really no drama. It was a fun record to make." ■

## THE ROOTS

FROM PAGE 127

ers, The Roots have gone in a different direction with *Phrenology*. It was primarily mixed by Bob Power (Sony Music Studios, N.Y.) and Russ Elevado (Electric Lady, New York City): "The two greatest sets of hands and ears ever to mix music," Thompson crows, "and doing the most progressive work in black music in the '90s and beyond." Additionally, Jon Smeltz did much of the original tracking and preliminary mixing at The Studio in Philadelphia.

Smeltz and Power have worked with the group often through the years and have encouraged their sometimes unorthodox methods. Elevado, on the other hand, became acquainted with Thompson through projects that the drummer produced for Common, Erykah Badu and D'Angelo. "He's one more key element that wasn't in the past five records," Thompson says. "He works in another place that's very anal about keeping stock of their recording equipment. He introduced us to Eddie Kramer, who was Jimi Hendrix's recording engineer [Hendrix was a major influence on The Roots], and from him, we got a lot of stories, methods of mixing and recording techniques."

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Don "Turk" Schell, Front of House for Lucinda Williams, Ryan Adams



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GEORGE PETERSEN, MIX MAGAZINE

"The D6 delivers a crisp, modern sounding kick sound right out of the box and is also a useful mic to have in the locker for bass miking." *Martin Ostrowski, Gig Magazine*

"With the D6, attaining an authentic kick sound requires no effort so I don't need to spend my time researching crossover points and hacking at EQ's." *Steve Beatty, Mobile Engineer, Real Image Recording*

"The first time I put the D6 in our drummer's (Rickie Fataar) kick drum was in sound check at one of our gigs. We didn't even get through the first 8 bars when he asked what I did to the kick drum sound. He said it was shaking the whole stage and that he could really feel the improved low end. The D6 is now part of our sound." *Paul Middleton, Front of House, Bonnie Raitt*

"Love the D6 sound as natural and does not color the sound at all. It literally took me 2 minutes on the first day of tour to get Matt Cameron's kick drum sound and I have not messed with it since." *Kernie Keyes, Monitor Engineer, Pearl Jam*

"In my 15 years of doing this, I have never received more compliments on my kick drum sound than I do now. I only travel with three things: two pieces of fuzzy English outdoor gear and an Audix D6!" *Chris "Shifty" Sullivan, Front of House, Jack Wilton*

"I like the fact that the D6 has all the low end and can handle the SPL of large, low frequency drums, but still allows the drum to sound the same as it does acoustically. At Blue Man Group, we use many drums with frequency ranges that go even lower than average kick drums. The D6 does a great job of reproducing them accurately." *Ross Humphrey, Sound Supervisor, Blue Man Productions*

"Best kick drum mic I've ever used. Replaced my kick drum mic I'd been using for 15 years!" *Paul Rogers, Front of House, George Strait*

"The D6 was designed with just one goal in mind: to be a no-compromise contemporary kick mic... If you want a painless way to get an absolutely rocking professional sound with a ton of serious beef on the bottom and that Lars type 'click' on the top, then this is the stuff." *Mark Parsons, Modern Drummer*

"Every day in sound-check we wrestle with that first channel. We know the ideal mic for any application is one that sounds natural with no EQ. The D6 is the 'swift kick' we've all been waiting for. Thanks Audix." *Mark Frink, Monitor Engineer, k.d. lang*

"The introduction of the D6 from Audix has made an impressive impact. We've had many requests from high profile drummers to install them in their custom kick drums using our May-Miking System." *Randall May*

"Audix continues to impress with its latest kick drum mic. 2003 PAR Excellence Award Winner; Pro Audio Review

"I am extremely happy with the D6 as I have been looking for an excellent sounding Kick mic. It is great to finally find a dynamic kick mic that has clean clear low end without that "unnatural resonant low boost" that so many so-called 'Kick Mics' have." *Dave Rat, Front of House, Red Hot Chili Peppers*

"The D6 was awesome right out of the box. In a recent TV performance with Lucinda Williams, the D6 shook the ground to the point where the high definition camera men asked me if I could please high pass the bass!" *Don "Turk" Schell, Front of House, Lucinda Williams, Ryan Adams*

## ....right out of the box!"

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Those pearls of wisdom resonated with Thompson, who admits that he's obsessed with every nuance of engineering that goes into a Roots record. It even helped him warm up to Pro Tools, which he'd previously avoided. His change of heart came about when he was at Electric Lady and got into a conversation with Lenny Kravitz. Thompson recalls, "Lenny told me, 'Hey, man, I got tired of keeping up with the analog game. I'm totally digital.' I said, 'What?!' He said, 'Dude, if Jimi Hendrix were alive today, he'd be using Pro Tools.' I said, 'That's a lie and you know it!' So a couple of weeks later, I was talking with Kramer while he was working on the Jimi Hendrix *BBC Live* album. I said, 'Isn't that funny what Lenny said about Hendrix and Pro Tools?' He paused for a second and said, 'Yeah, I could see that.' Then he went on to tell me that the classic Hendrix recordings amounted to three engineers being human Pro Tools."

Nevertheless, Elevado remains a staunch analog advocate. At Electric Lady, he has a wealth of vintage equipment in tip-top condition to call upon and he only uses Pro Tools sparingly. For his part, Thompson likes the sound of analog and loves to experiment with old equipment.

"Often, artists will mix a whole album and then they'll say, 'I have these five songs for you,'" Elevado says. "Those usually are the artsy ones, which I can really get creative with. [Clients] will tell me, 'Just do whatever you want, and if you hear something, go for it.' That plays a big part in the relationship I have with Ahmir. He looks for me to push the envelope."

At Electric Lady, Elevado worked on an SSL 9K console—his favorite—along with a wide assortment of analog outboard effects, including Mutron Biphase, various flanges and envelope filters, Leslie cabinets, MXR phasers, Neve 1081 and 1093 EQs, Helios mic preamps, Fairchild compressors and gates. "People don't realize how big a difference analog can make over digital," Elevado says. "It's definitely in the mixing process, because I'm going through all kinds of old tube compressors and EQs. That's a huge part of my sound."

Bob Power, by contrast, likes to blend the old with the new, employing Logic Audio and Pro Tools TDM for recording and then mixing on an SSL 9000 J, but also favoring occasional enhancements from older Neve outboard equipment. "It's really nice to have MIDI and audio in one place, and with the TDM running, I'm afforded a lot of things I

wouldn't ordinarily be able to do," he says.

The veteran engineer/producer has been regularly relied upon by The Roots to mix their more straightforward tracks and singles. "They use me for what I'm good at, and working with them is different than anyone else," he notes, "primarily because their music synthesizes so many different styles.

"For example, having a strong jazzy element in the chord changes over a really nasty hip hop beat. From a mix standpoint, the combination of elements they happen to use, which are all part of modern soul but normally not in the same song, makes it very challenging. Fortunately, all of the stuff they brought in [analog and digital source material], particularly for this last project, was recorded really well. Jon Smeltz did a lot of it. He's a real serious pro, and the stuff he records sounds great."

Smeltz works mainly out of The Studio, a facility he and arranger John Gold founded about seven years ago. The Philadelphia studio features two SSL rooms; most of their work with The Roots was done in the room with E Series board using George Augspurger mains. Initial tracking was done on a Studer 827 2-inch analog deck. In the later stages of the sessions, during the second year, everything was recorded on Pro Tools.

"I've been recording music for over 20-something years," states Smeltz from his home in Philadelphia. "I've worked with everyone from Whitney to Mariah, and I guess I just learned from the very beginning of my career how to mike live instruments. I used to be a [Sennheiser] 421 guy on the kick drums," Thompson notes, "but shifted to the D-112 when it came out. Everything has just evolved, and I was even around when the RE-20 ruled for the kick drums. But with hip hop music and such, I always find that the 47 always gives me a nice solid bottom that I roll the top off of. Sometimes, I'll even take a Moogerfooger as a stand-alone unit, not the plug-in, which is a nice way to shape the bottom. Often, I'll print that on a separate track. Believe it or not, the drums were done after the fact, 80 to 90 percent of the time.

"I'm about the sound and feel of the CD, that's all I care about at the end of the day," he concludes. "People don't recognize The Roots for having what I feel are some of the best-engineered hip hop albums around. But then again, I'm the kind of cat that cares about that type of stuff." ■

**Cool Spins**, FROM PAGE 130

**It'll Come to You: The Songs of John Hiatt (Vanguard)**

Even though he's a compelling performer on his own, John Hiatt has always enjoyed greater success as a songwriter, and this CD, stuffed with some of his best songs done by a great cross section of artists, shows his sheer brilliance in a



way that few of his own solo albums have. Hiatt personally selected the 13 tracks, each by a different artist, and all but three previously recorded. Of the new tracks, Patty Griffin's gorgeous acoustic version of the heart-rending "Take It Down" is the strongest. The rest is an eclectic melange of actual hits and songs that deserved to be hits, including Bonnie Raitt's sensual "Thing Called Love," Rosanne Cash's "The Way We Make a Broken Heart," Freddy Fender's moving "Across the Borderline," Eric Clapton and B.B. King's "Riding With the King," Emmylou Harris' "Icy Blue Heart," Linda Ronstadt's exquisite "When We Ran" and Buddy Guy's searing "Feels Like Rain," to name a handful. A great listen from beginning to end and a fitting tribute to true songwriting genius.

Executive producer: Steve Buckingham. Different producers, engineers and studios on every track. —Blair Jackson

**The Crusaders: Rural Renewal (PRA/Verve)**

Pianist Joe Sample, sax man Wilton Felder and drummer Stix Hooper have been making music together on and off for nearly half-a-century, much of it as the driving forces behind The Crusaders (nee the Jazz Crusaders). The Crusaders have had a million different incarnations and floated from style to style often, as commercial pressures dictated, but they've always retained a funky R&B edge that goes back to their days coming up in Houston. On this reunion album, they dive back into that world with gusto. This is, indeed, a "renewal." The mostly instrumental affair has a breezy looseness that belies the evident mastery of the players, which besides the core three includes stalwarts such as Dean Parks, Ray Parker Jr. and Arthur Adams on guitars; Freddie Washington on bass; trombonist Steve Bax-



ter; and Lenny Castro on percussion. There are some great grooves here, from percolating funk to deep blues to gospel-soul to easy jazz excursions, all of it tasteful and very well-performed. Guests include guitarist Eric Clapton on a pair of tracks, and singers Donnie McClurkin and the Sounds of Blackness. A welcome return to form.

Producer: Stewart Levine. Engineer: Rik Pekkonen. Studios: Ocean Way (Hollywood), Cello (Hollywood), Record One (Sherman Oaks, CA), Master Mix (Minneapolis). Mastering: Bernie Grundman/Bernie Grundman Mastering (Hollywood).

—Blair Jackson ■

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**L.A. GRAPEVINE**

by Maureen Droney

It's always interesting to see what Allen Sides is up to, so I stopped into Ocean Way Recording for a visit with him and a look at his latest creation: Studio D with its Neve 88R console. Studio D, which boasts a large control room and a breathtaking wall of outboard gear, is part of a whole new wing at Ocean Way. Carved out of what was Bernie Grundman Mastering's original home, there's now a private lounge and a Pro Tools room.

Even Sides, who's built numerous studios, admits that constructing new from-

fitted main monitors. "We do a lot of 5.1 mixing," he explains, "and we find that everybody has their own way of setting up. I wanted a totally open configuration so we could set up any system."

D is equipped with a large pair of freestanding Ocean Way-style monitors that were, Sides reveals, originally built as a playback system for the executive conference room at Hollywood Records. "They needed a system that was accurate but impressive," he comments, "because all of the A&R and promotion people came in for playback. It's got twin 18s on the bottom, along with double-15s for the mid-bass in OWR [Ocean Way Recording] enclosures with 90x40 radial



Allen Sides in Ocean Way's newest addition: Studio D

the-ground-up rooms at the historic 6050 Sunset building was a challenge. One of the problems that surfaced was that the space, built for Grundman's Studios A and B, had a wall running down the middle of the two rooms that literally held up the entire building. Removing the wall and rebracing took time, a lot of money and a temporary closing of Sunset Boulevard for the delivery of a 40-foot I-beam.

Studio D, primarily a mix suite but with an iso room for overdubs, is Sides' first room to be constructed for non-sof-

wood horns and roughly 6,000 watts of amplification. I liked the system so much I ended up putting it in here."

The 88R was chosen after Sides worked on the one at Buddy Brundo's Conway Studios. He was impressed with the sound, about which he's notoriously picky, and with the operation. "They worked hard to give it a quick learning curve," he says. "While it has no internal similarities to a VR, it has a similar layout, so it's easy to understand. And the automation is basically Flying Faders

—CONTINUED ON PAGE 146

**NASHVILLE SKYLINE**

by Rick Clark

One day, while I was digging through my library for source music candidates for a film project, an event in Nashville was brought to my attention by Andrea Pizzano, the person who keeps all of the project craziness running smoothly in this office. It was the 5th Annual Nashville Screenwriters Conference. I knew that Andrea was seriously working on a TV show treatment and I wondered why she thought that I might want to check it out. Then I spotted a few music-related panels. The one of greatest interest was simply titled "Music and the Movies," assembled by music supervisor Anastasia Brown. It was held at the Country Music Hall of Fame.

The panelists included music and film industry impresario Miles Copeland (The Copeland Group, Firststars Management); music supervisor/consultant P.J. Bloom (HBO Films, and projects with John Frankenheimer, Mike Nichols, Norman Jewison, Ridley Scott, etc.); screenwriter/musician Les Bohem (Steven Spielberg-produced SciFi Channel series, *Taken*); music supervisor/artist manager Ed Gerrard (projects with Wes Craven, Steve Miner, et al; his Impact Artist Management clients include Dr. John, Angeliqe Kidjo, Olu Dara, Gipsy Kings); composer/musician Terence Blanchard (film music credits include *Do the Right Thing*, *Mo' Better Blues*, *Jungle Fever*, *Malcolm X*, etc., and a jazz artist on Blue Note Records); and music attorney Don Welty (senior counsel for Music for Buena Vista Motion Picture Group). Brown—whose music supervision/consulting credits have included *Charlie's War*, *Taken* and the feature documentary *The Dance*—moderated. Brown also previously managed country artists Keith Urban and John Berry, and functioned as A&R for Ark21, signing Waylon Jennings and Leon Russell.

The high turn-out clearly demonstrated that there are many people in Nashville who are deep into working



with music for film, either placing songs or scoring compositions.

"Les [Bohem] really had the vision to do this panel, because there are so many great songs written in Nashville, and Les sees them like they are mini-screenplays," says Brown. "He felt that many of these songwriters in Nashville have the talent to be great screenwriters and they don't even know it."

Bohem, who once played bass in the band Sparks, feels that Nashville is ripe with talent for film. "I think people in Nashville forget how good everything is there. There are so many great songwriters and musicians, and people get immune to it because you see it all of the time," says Bohem, who started the conference five years ago with business manager Gary Haber and film producer Karen Murphy (whose credits include *This Is Spinal Tap*, *Waiting for Guffman*, *Best In Show* and *A Mighty Wind*).

One of the points that emerged in the conversations concerned the amount of film-related work already happening in town, like *Charlie's War*, which is directed by David Abbott for Tenaissance Productions Inc. and stars Olympia Dukakis, Lynn Redgrave, Isabella Steele, and Nashville native Vernon Winfrey, father

—CONTINUED ON PAGE 151

## NEW YORK METRO

by Paul Verna

**Go west west, young man:** At first glance, West West Side Music seems to be a product of the workstation generation. A mom-and-pop mastering studio headed by owner/engineer Alan Douches, it features a Pro Tools DAW, a predominantly indie clientele and rates that make it an affordable alternative to the big New York shops.

However, West West Side's success has less to do with Pro Tools than with Douches' talent and his determination to build a haven for his long-standing customers. If Douches employs the same tools used by bedroom shops that have less of a right to claim the mastering mantle, then it's only coincidental. After all, Douches was running a thriving studio long before Pro Tools became the *lingua franca* of digital editing.

Founded 11 years ago in the bedroom community of Tenally, N.J.—a short drive west of Manhattan, hence its name—West West Side has been one of the industry's best-kept secrets, catering to hip indie artists like Jets to Brazil. The Slackers and Smoothe da Hustler. At the same time, Douches has begun amassing his share of major credits, including Fleetwood Mac, Hole, Ben Folds and Yes.

The studio's rising profile has convinced Douches that it's time to expand the core business and venture into new areas. Ac-



Shown at West West Side Music (Tenally, N.J.), seated from left, are owner/chief engineer Alan Douches and Ben Weinman from the Dillinger Escape Plan. Standing, from left, are production engineer Kim Dumas, office manager Matt Koke, staff engineer Maggie Perotta and staff engineer Jesse Cannon.

cordingly, West West Side is about to break ground on a second mastering room, which will be staffed by up-and-coming engineers Jesse Cannon, Karl Eriksson and Maggie Perotta. In addition, West West Side has just entered into a partnership with the State Theater in nearby New Brunswick, N.J. to provide recording and distribution services to artists who perform at the venue.

"When recording in a studio, the artist is at a severe disadvantage," says Douches. "The audience, often the primary source of energy and excitement, is missing. The approach here is to restore the magic of a live performance into a recording by providing the venue, the recording studio and video production all at the same time."

For the State Theater venture, Douches formed an umbrella company—Deko Entertainment Group—with partner Eric Rachael, who is also chief engineer for Trax East Recording Studios in South River, N.J. Deko will fund the recording service and take a one-third split of the revenues from any broadcasts or releases, with the other two-thirds going, respectively, to the artists and their labels.

"For artists and their management,

—CONTINUED ON PAGE 152



Music tracking for The Dance was handled at IV Music. Shown inside the studio are (from left) Chris Parker, owner of IV Music; Daniel Noga, engineer; and Dan Rudin, engineer.

PHOTO: RICK CLARK

## SESSIONS & STUDIO NEWS

### NORTHEAST

Elvis Costello and co-producer/engineer Kevin Killen have taken residence in Avatar's (New York City) Studio A since early April to record Costello's new record; Peter Doris assisted...Mos Def returned with his band Black Jack Johnson to The Cutting Room (New York City) to continue work on his new album. Dylan Margerum was behind the boards...Mixer/producer Philip Pagano booked time at Pulse Studio's (Staten Island, NY) Studio A to mix the latest album for the Average White Band; the release was produced/engineered by Matt Noble at The Loft Studios (Bronxville, NY)...New York City-based Studio 900 has seen: James Blood Ulmer working on overdubs and mixing with producer Vernon Reid and engineer Joe Johnson; and Joan Jett recording and mixing a track with Kenny Laguna handling production chores alongside engineer Frank Garfi.

### SOUTHEAST

Tim Nitz flew in to Pensacola, Fla., to record some touchups to boxing champ Roy Jones Jr.'s tracks with producer L.T. Hutton at Jones' Left Hook Studios...Jim Combs completed editing and mastering on debut releases for ambient synth duo TouchXtone at Common Sound Studio (Decatur, GA) with Michael Thomas Roe.



PHOTO BY DAVID BOGGERIN

"Weird Al" Yankovic, the reigning King of Pop Parody, recently mastered his new album *Poodle Hat* at Bernie Grundman Mastering. The new collection, now out on Valcano/Way Maby Records, features guest appearances by Dweezil Zappa and Ben Folds. Pictured (L-R) are mastering engineer Bernie Grundman, recording engineer Tony Papa and Yankovic.



The B-52's recently booked Ardent Studios in Memphis. Seen taking a break in the studia gardens are, from left, Fred Schneider, Keith Strickland, Cindy Wilson, producer/engineer Tom Durack, Kate Pierson, Pro Tools operator Pete Matthews and assistant engineer Adam Hill.

### MIDWEST

Martiza has just finished tracking and mixing their latest CD, *Fires on the Shore*, at Augustudios/Aphasia Productions (Decorah, Iowa). The album was engineered by studio owner Jody Koenig...Producer/engineer Ed Rose has been tracking the Get Up Kids' new release, as well as recording Long Since Forgotten (Syracuse) at Blacklodge Recording (Lawrence, KS)...Numerous sessions at Chicago Recording Co (Chicago): KMFDM in Studio 5 mixing their upcoming release with studio manager/engineer Chris Shepard; engineer Chris Sablod mixing a new album for local jazz singer Libby York; and engineer Manny Sanchez and producer Bjorn Thorsrud mixing Zwan's live show from the Aragon Ballroom with Todd Brodie assisting.

### SOUTHWEST

Country legend Charley Pride mastered his latest release, *Comfort of Her Wings*, at WexTrax (Dallas) with mastering engineer Rob Wechsler...SugarHill Recording Studios (Houston) donated five hours of studio time to the winners of this year's Kids' Way songwriting contest. All of the winning songwriters recorded their songs with engineer John Griffin, who was assisted by Leigh Crain and Alicia Perez.

### NORTHWEST

Producer/engineer Bill Thomas is currently recording popular Denver band Rubber Planet at Rav'en Recording in Lafayette, CO. The band is working on their third disc with Thomas and studio owner/engineers Mike and Sue Shea, and assistant Monica Tromp...Former Kronos Quartet cellist Joan Jeanrenaud and current Kronos violist Hank Dutt were working at Different Fur Recording Studio (San Francisco) recording and mixing their duet piece. Howard Johnston manned the console with Justin Lieberman on Pro Tools...Sylvia Massy Shivy produced the Fighting Jacks at her Radiostar Studios (Weed, CA). Rich Veltrop engineered alongside assistant Michael Riach.

### SOUTHERN CALIFORNIA

An eclectic group of musicians have been booking time at the Record Plant: Limp Bizkit with engineer Elvis Baskette (engineer), Pro Tools op Dave Holdridge and assistants Jun Ishizeki and JD Andrew; Mariah Carey with executive producer Randy Jackson and engineer Dana Chappelle; Earth, Wind & Fire with production team, Tim & Bob, engineer Andy Haller and assistant Jason Carson; and Britney Spears with Swedish production team Bloodshy and Avant, producer Brian Higgins and engineer Pablo Munguia. ■

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L.A. GRAPEVINE FROM PAGE 142

that do a lot more. Anybody who knows Flying Faders can operate it."

As usual, Sides acoustically designed the room himself, as well as acted as his own contractor. "I learned a lot from Bill Putnam, and I've been doing it a long time," he says. "There are certain basic parameters for designing spaces; premises that have been around for years. Most of the information is readily available. The problem is, many people are more into aesthetics and visuals than the concepts of acoustics. That's why



PHOTO: DAVID GOGGIN

In the midst of an American Idols session, co-producer/keyboardist Rob Shrock (far left), Ocean Way owner/engineer Allen Sides (center) and Pro Tools editor Rail Rogut work on a new version of Burt Bacharach's "What the World Needs Now" to be included on the upcoming CD, American Idol Season II: All-Time Classic American Love Songs.

many control rooms end up with big loudspeakers that are unlistenable.

"What it comes down to is, that as an engineer and a producer, I know exactly what I need from the loudspeakers, and I will do whatever I need to get that, even if it's a little unorthodox. For Studio D, I wanted a large control room where 10 or 15 people could all hear the same thing, and I achieved that. I think it sounds amazing."

Ocean Way clients seem to agree. In D since it opened have been producer Scott Litt working with Pete Dinklage, producer Rob Cavallo mixing Less Than Jake, Sides mixing Kitaro in both stereo and 5.1, DJ Quik and Latin sensation Luis Miguel.

The rest of Ocean Way's rooms have also been holding their own or better during the past year. Respected producer Nigel Godrich has kept Studio B busy with Beck, Travis, Radiohead and Air, and on the day I stopped in, mixer Jack Joseph Puig was ensconced in his Studio A lair with Grammy-winner John Mayer.

Ironically, after developing not only his studios, but peripheral businesses such as Classic Rentals and Ocean Way to Go (known for putting together home and temporary studios for such artists as Ziggy Marley, Mars Volta and Incubus), Sides finds his engineering work more in demand than ever. So far this year, he's worked with Cavallo on projects for Phil Collins and Lisa Marie Presley; with Burt Bacharach producing; recording Aretha Franklin and the finalists from *American Idol* (see photo above); and, with a full orchestra, the Ron Isley Burt Bacharach songbook album for Dreamworks.

Hot as his engineering career may be right now, Sides has no plan to cut back on his cross-pollinating businesses. "It's a difficult time," he says. "I think it's better that I'm involved with the studio as a producer and an engineer, rather than just being a studio owner.

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the studios, they're all of the other ancillary things. And you've got to stay on the case all of the time. It requires a lot of attention to stay relevant."

Those who lament the days when audio products were primarily designed to fill actual needs (as opposed to the current trend to design cool products and then go out and create a need), will be delighted with Quantegy, whose FireWire FHD Series external hard drives definitely fill a need and also have some extremely cool features. To show them off, Quantegy hosted a recent Los Angeles SPARS luncheon.

"The evolution of our FHD Series started about a year ago," explains Quantegy's Steve Smith. "Manufacturing changes in SCSI drives were causing a lot of confusion, so we started looking at opportunities in FireWire as a transport medium. Because of the speed of the new generation, pro people want it. But, we quickly

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## San Francisco

The Plant Recording Studios recently hosted Detroit rock band the Van Bondies for tracking (Studio A) and mixing (Studio B). The band's first major-label debut album, *Pawn Shoppe Heart* (Warner Bros.) had Jerry Harrison (Talking Heads, the Modern Lovers) handling production duties. The Von Bondies' last independent release, *Lack of Communication*, (Sweet Nothing Records) was produced by Jack White (the White Stripes).



*Pictured in the rear row, from left: Don Blum (drums), Jason Stollsteimer (guitar/vocals), Arne Frager (Plant owner), Perry Watts-Russel (Warner Bros.' A&R), Marcie Bolen (guitar) and Carrie Smyth (bass). Front row, from left: producer Jerry Harrison and engineer Eric "E.T." Thorngren.*

discovered that across the Internet and throughout the industry, there's a wide range of quality, performance and price, driven by consumer retail where it's marketed as a product for home use. What we did was go out and purchase a wide selection of retail FireWire enclosures to see if any of them made sense. A lot of them were junk, but we got down to six."

All of the six had Oxford 911 chip sets, the fastest currently out there, and that became Quantegy's starting point. Using speed and reliability as criteria, Quantegy chose IBM as the manufacturer. After that, Quantegy went to customers for a wish list.

Suggestions that were incorporated include a Power switch on the front and separate LED indicators for power and drive activity. And, something that seems obvious but isn't, a standard AC cord. "Most manufacturers looking to reduce costs have gone to DC adapter boxes with multiple connections," Smith explains, "making the box unique and unusable in different situations. We

wanted to have internal power of 110 to 240, 50 or 60 Hz, and for it to be easy for a client to take the drive from, say, L.A. to London and plug it in."

The end product includes a built-in universal auto-switching power supply, a front-mounted power switch, dual 1394 ports, a fully shielded metal chassis and an ultra-quiet ball-bearing fan: no easy thing to find. "The first fans we tried sounded like little airplanes," Smith says with a laugh. "The drives get very hot when they work, and ventilation is essential. We found the fan with the absolute lowest ambient noise, which was a complicated process having to do with pitch of blades, velocity, cubic area. Don't ask."

A rugged Lexan outer case protects against scratches and high temperatures, can be used either horizontally or vertically, has rubber feet on all sides and is stackable. Each FHD drive is subjected to a detailed final system test, and the individual test data generated is included with each drive.

And here (donning my studio manager hat) is the coolest part: All FHD FireWire drives come in a professional carrying case called the DrivePak, which protects, stores and transports the entire FHD system. The DrivePak includes a high-density, anti-

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static foam interior; professional user labels; power cord; and FireWire cable storage, plus storage for one DLT or LTO cartridge and two AIT session backup tapes. I saved the best for last: The DrivePak has large label areas to accommodate traditional studio 10½-inch reel-size labels! Now that's progress. ■

Got L.A. news? E-mail MsMDK@aol.com.

#### NASHVILLE SKYLINE FROM PAGE 143

of Oprah Winfrey and a local barbershop owner. Another film where the music was created and produced in Nashville is *The Dance*, a documentary about Louisiana boxer Billy Roth and his years as a volunteer boxing coach, referee and mentor in the infamous state penitentiary at Angola, La. The film was produced by Eric A. Geadelmann of Haynes/Geadelmann Pictures with producer/director John Darling Haynes. Award-winning local composer/arranger/producer and musician Scott Brasher handled the music supervision. The music in *The Dance* ranges from raw, acoustic, Delta-style blues and black gospel to that of local hip hop artist Baby Low Ki. Country singer Trace Adkins narrated *The Dance* and his track was cut at



Music composer Anastasia Brown assembled one of the music-related panels at the 5th Annual Nashville Screenwriters Conference.

Paragon Recording, located south of Nashville. The bulk of the music tracking was done at IV Music, with Dan Rudin engineering and additional engineering handled by Daniel Noga.

The IV sessions were done through Digidesign Pro Control and Pro Tools 5.2 MIXPlus/24-bit Apogee converters. Rudin

monitored through his Blue Sky System One 2.1 system. "I used KEF C55s for 15 years, which I love, but I was wanting to have a little more accuracy down low and in the very top stuff. I didn't want anything harsh," says Rudin. "I could never find a modern loudspeaker that was anything like that, until I found the Blue Skies.

"We wanted everything to be real roots-y, acoustic, front porch-y-sounding," Rudin continues. "We miked everything real loose and let them play it all live. Even the background vocalists sang live. We did choir stuff there and some foot stomping and harmonica things just to kind of create the mood of a real south-

ern Louisiana thing. Scott [Brasher] came in with the cues mapped out and we recorded them. Some of it was improv. It was actually a very good creative process for the music. Scott took a lot of this back to his home studio and did some music editing there."

Brasher edited on Logic. "I did a chain-gang version of that old song 'John Henry' and recorded that at home, pretty much just recording myself yelling into a microphone about 10 times," Brasher says with a laugh. "I added a bunch of noise in the background, pulling up samples that sounded like hammers hitting spikes. Phil Keaggy did a lot of stuff for me, and

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then the rest of it was all done at TV.”

TV owner Chris Parker looks forward to more film-oriented projects, particularly with Haynes/Geadelmann. “It was a really neat situation, being introduced to Eric [Geadelmann] and being involved in the project, because *The Dance* is a very inspiring film. It’s a great story. We’re beginning to get involved more and more in the film community locally, and that is something I am very committed to. We had an L.A. presence for a few years and it was difficult. But for *The Dance*, all of

the music and the audio were done in Nashville. There are not a whole lot of films out there floating around that you can say that for. I know that Eric is committed to staying here in Nashville and making it work, and we’re excited to be a part of that down the road with him and see where it leads to.”

Brown is equally excited about the emergence of Haynes/Geadelmann Pictures as a serious film industry player to stimulate the local community. “Eric is setting up a really amazing entertainment company,” she says. “It is good for our city that he is here. Eric has optioned some amazing properties to do feature

films; people like Ron Meyer are knocking on his door.” Haynes/Geadelmann Pictures is currently working on another documentary called *Kiss the Soldiers: The Mauthausen Liberation*. Brasher has begun creating the music for this project.

Finally, when I asked Abbott, the director/producer for *Charlie’s War*, about his sense of Nashville as a place to do music for film, he says, “There are quite a few composers that have great credentials who reside in Nashville. Most of the record labels and publishers here are great to work with, and you can imagine, with all of the studios and world-class music producers and musicians that live here, there is no reason why filmmakers can’t benefit from all of the resources here.” ■

Send your Nashville news to MrBlurge@mac.com.

**NEW YORK METRO FROM PAGE 143**

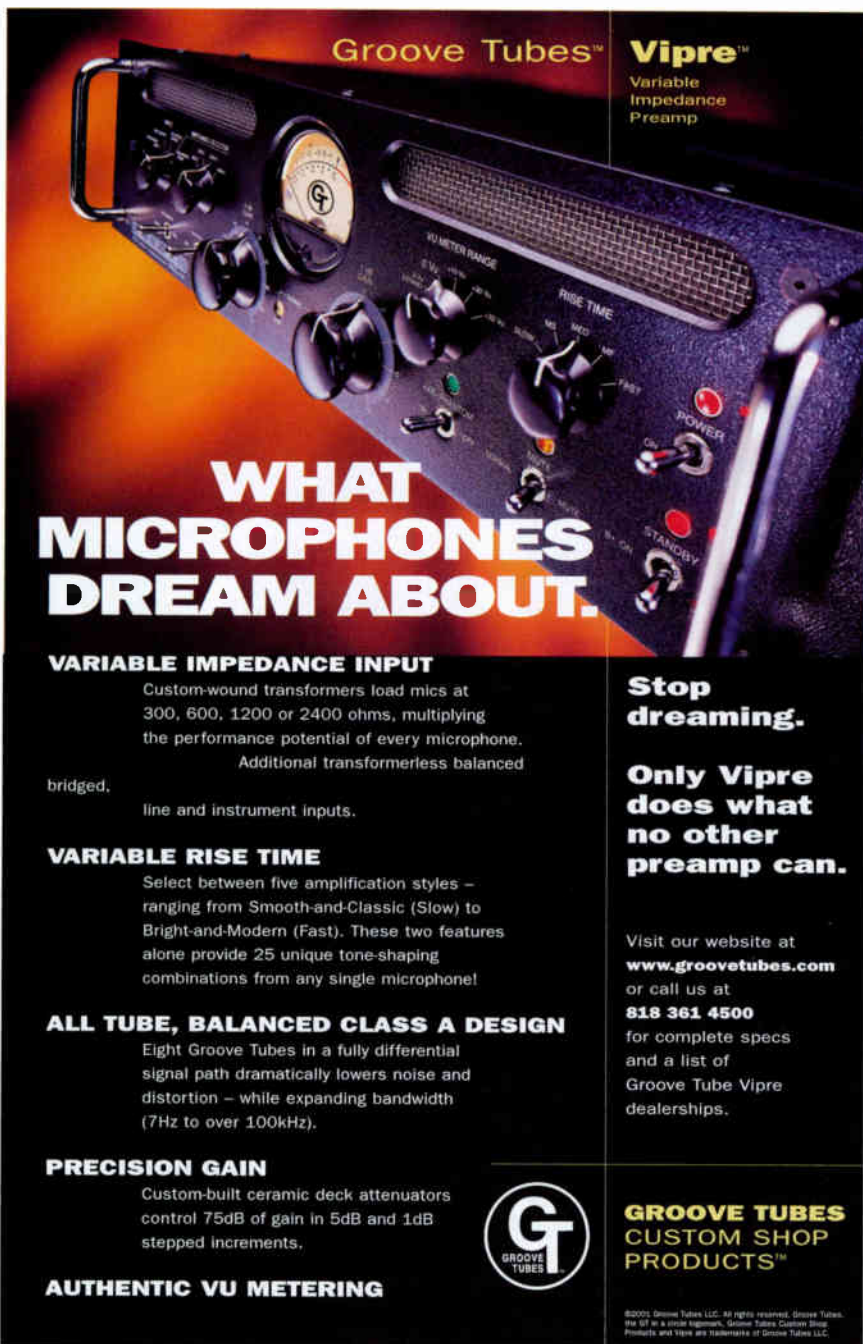
this joint venture will offer many of the traditional services provided by record companies,” says Rachael. “However, they will now have more control over the product and, ultimately, enjoy more of the profits.”

Douches and Rachael will oversee the design and construction of a control room at the State Theater that will be capable of producing master-quality audio and video content for DVD release, Webcasting, TV broadcasts and other media. Besides the 1,800-seat flagship venue, the State Theater complex comprises the George Street Playhouse and a 300-seat theater-in-the-round. All three stages will be wired to the control room for recording at a moment’s notice, according to Douches.

Noting that the State Theater has a rich history as a live recording destination—a George Carlin HBO special, a Pat Metheny VH-1 project and a New Jersey Symphony Orchestra date to its credit—venue VP of operations and COO Christopher Butler says, “What is new is taking advantage of today’s technology and passing that along to our performing artists. Having an all-in-one option available at almost a touch of a button is very appealing and is sure to attract new artists and audiences.”

With West West Side’s busy mastering schedule, the day-to-day management of the State Theater studio will fall to Rachael, whose own facility is geographically close to New Brunswick. Douches says, “It’s mid-June, and I’m booked until the middle of September. I feel bad for all of the clients I have to put off until then.”

Let *Frida* ring: The words “Oscar-win-



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## COAST TO COAST

ning film score" conjure up images of a symphony orchestra, a huge recording space and a control room large enough to accommodate a committee of creative



**Lawrence Manchester, recordist/mixer on the *Frida* project**

and technical people: composers, producers, engineers, mixers, supervisors, etc. If there is a downsizing trend in the music recording business—which few would dispute—then the film-scoring community seems immune to it.

However, not all Hollywood scores lend themselves to this grandiose treatment. This year's Oscar-winner for best original soundtrack, Elliot Goldenthal's *Frida*, was recorded mostly in a living-room environment and mixed with a mouse.

"The traditional scenario is what we do most of the time," says recordist/mixer Lawrence Manchester, who has worked with Goldenthal since 1996. "In fact, we're working on a project right now, *S.W.A.T.*, where we're booking the Manhattan Center's ballroom space to record an orchestra. But *Frida* called for a much more intimate score, with a lot of solo instruments and small ensemble pieces. It was also a low-budget film, so even if we wanted to hire an orchestra, it would have been difficult for us to do so."

All of the pre-production for *Frida* took place at Goldenthal's home-based project studio, which is equipped with a smallish control room

and a good-size living room with high ceilings. Manchester and longtime Goldenthal engineer, Joel Iwataki, shared the recording duties, while Goldenthal oversaw production.

After cutting tracks at Goldenthal's loft, he and his team took their Pro Tools and Digital Performer rigs—which worked in tandem—to Manhattan Center for additional recording and mixing. However, rather than use one of that studio's generously equipped control rooms, Goldenthal and company set up in an empty room and did the entire mix "in the box."

"I was amazed to go to the dub studio and listen to music we mixed with a mouse," says Manchester, who has also worked on such Goldenthal scores as *Titus*, *Final*

*Fantasy*, *In Dreams*, *Sphere* and *A Time to Kill*. "It sounded pretty darn good in the theater." ■

Send your Metro news to [pverno@vernaularmusic.com](mailto:pverno@vernaularmusic.com).

## Atlanta

At Patchwerks Recording Studios, Platinum-selling artist Scarface tracked a cameo spot on the upcoming third album by Ludacris for Def Jam Records. Scarface, who also serves as president of Def Jam Records' Atlanta-based operations, worked with engineer Dale "Rambo" Ramsey (Jay-Z & U.G.K., Justin Timberlake, The Temptations), along with Joey P. (Fabolous, P. Diddy, Jagged Edge), Steve Fisher and Corey Williams. Vocals were tracked in the studio's A Room using the 96-input SSL 9000 J console to a Pro Tools TDM MIXPlus system.



**Front row: Scarface and Dale "Rambo" Ramsey. Back row: Corey Williams, Steve Fisher and Joey P.**

—FROM PAGE 22, MAKIN' MUSIC

boat, knowing that the shopping public throughout the world can audition my tune before I even get out to the dive site. If the tune's any good, then the dive trip should be paid for by the time I come in for my first rum punch. All possible in a world where the time from finishing the mix to having the piece on the market is around one hour.

#### FREEDOM AT LAST

Compare that to a couple of years ago: If you weren't signed to a major label, but had a good tune in the can, then your options were limited and not too pretty. First, you faced months of shopping around in the hope of finding somebody who would distribute you, and then many more months fighting to be actually heard by your target audience. This often included repeated phone calls wherein you asked your distributor why he wasn't doing more, and he explained that the money just wasn't there. In the end, maybe 5,000 potential customers heard your piece and some percentage of those bought, depending on how good it was, how good you were at bolstering your distributor's efforts, how well that distributor actually targeted your work. Meanwhile, you have already paid to have 1,000 units struck. Profit was unlikely. Hell, *survival* was unlikely.

If you compare the Dark Ages of a few years ago with the developing New Age of online distribution (without penalties for indies), the conclusion is clear: Now is the time.

It costs virtually nothing to record your tunes now, either in a project studio or with your own prosumer setup. When I started recording, studio time was roughly one Chevy per day.

And when your tune is done, it can be heard by accurately targeted, eager online customers in hours. Compare *that* to the Dark Ages, when the average time from wrapping a mix to having the song available for purchase was, well, let's be honest here, statistically infinite. Ninety-nine percent of all songs made were never heard by anybody who didn't go to your school or show up at your house for weekend cookouts.

And so we have it. I will wrap this column right now so that you can go forth and multiply the number of songs to be offered to the world immediately.

The way I see it, everybody wins. Indies get their stuff out there. Majors can experiment with alternative offerings with

significantly less investment and risk.

There is one new problem, however. How does the buying public sort through all of this new stuff? That is the question. And the online stores with the best answers to that question will be the biggest winners.

In closing, I apologize again for my uncharacteristically positive outlook. I will, of course, try to avoid this in the future, but this time, I am more excited about the future of our industry than I have been since, well, hell...ever.

And anyway, you can't truly feel the

rich, dark, satisfying heaviness of impending doom without the occasional bright, positive day as a reference. Comparison is crucial to understanding the whole picture.

So, go make music. I'm taking the iPod down to the river and sticking my feet in to see if it has warmed up yet. It looks warm from my living room window. The deer are playing in it, blue herons are swimming...Sickening, isn't it? ■

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—FROM PAGE 26, FROM THE ASHES  
interior finish material.”

But even genuine acoustic foam comes in different fire-resistant grades. There are three grades—A, B and C (sometimes, confusingly enough, called I, II and III)—that specify how far a flame will spread over a material's surface in a set amount of time. “None of the stuff will burst into flame,” says Colleran. “But if a building is already burning, the grading will tell you how much this will contribute to the fire and perhaps make it worse.”

Polyurethane foam is the cheapest and, consequently, the most popular material for acoustic treatments. “The best urethane foam is only Class-C,” says Colleran. “A typical urethane foam will go out when you remove the flame. In a home studio, you can use it, as long as you don't use voluminous quantities and you have a way out. Generally, it's not illegal, but it can cause real problems if the house burns down.”

But flame retardation isn't the whole story. There's often an inverse relationship between flammability and the amount of smoke a material gives off. Colleran explains, “When you treat something for

flame spread, it often increases the smoke output. The smoke is toxic; it's cyanide. You'll be dead before the flames reach you.” There are similar trade-offs when it comes to making materials water-resistant: “Some waterproofings are incredibly flammable,” he says.

“Materials that will pass  
code on the floor may not  
pass on the wall. In a fire,  
they will get more oxygen  
on the wall, and even more  
if they're in a corner.”

—Nick Colleran

Another factor is the type of building you work in. “Materials that will pass code on the floor may not pass on the wall. In a fire, they will get more oxygen on the wall, and even more if they're in a corner,”

says Colleran. “If the studio is in a home or a single-story, single-use building, that's one thing, but if you're in a high-rise in the city, you have to worry about vertical up-draft. Remember the old carpet on the walls at [Miami's] Criteria Studios? That would never pass code today.”

It's also important to recognize that sound-deadening and soundproofing are not the same, a distinction that may have been lost on The Stations' owners, who installed the foam largely in response to neighbors' complaints. (Ironically, the person who sold the foam to the club was one of those neighbors.) “We have people who want to put urethane foam into churches, day-care centers and nursing homes, and we won't sell it to them,” says Colleran. “Not only is it unsafe, but they think it's going to block sound, which is not what it does.”

“Unfortunately, the materials that have the best fire ratings are often more costly to make. This is due to both raw material cost and the difficulty of molding a plastic that has a high melting temperature.”

What about some of the more “organic” materials that smaller studios might want to use, like wood shingles and that

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old standby of garage bands: egg cartons? "Cedar shingles were all over studios in the '70s," says Colleran. "We tested some when we did a project, and acoustically they are wonderful: absorbent and flat. But they go up like gasoline: They're very porous and there's lots of air circulation. We tested some egg cartons at Riverbank Lab, and they're really not bad, acoustically. But as Ray Bradbury reminded us, they go up at 451° Fahrenheit. And then, of course, there's the problem of cholesterol."

Light woods are also used in many modern sound-diffuser systems, but Colleran thinks that studios should consider alternatives: "There are Class-A thermoplastic materials, which won't melt on the firemen. But they're about 50 percent more expensive than cedar or cheaper plastics."

What else does Colleran like for fire-safe materials? Melamine: the stuff your parents' supper dishes were made of. "It's ceramic-based," he says. "You put a flame next to it and it just sort of looks at you." Typically, it's about twice as expensive as urethane. And then there's Fiberglas: "It's made from sand and it just doesn't burn. Most professional installations these days are going with Fiberglas."

Fire marshals are supposed to be able to explain and enforce fire codes, but they sometimes have to deal with moving targets. "There's lots of weasel wording on the fire-safety issue when it comes to materials," says Colleran. "These days, even if a material is specified as Class-A, the fire marshals are saying, 'We don't trust it; we want to check it out ourselves.' A lot of fire marshals are—you'll pardon the expression—on the hot seat because they passed on stuff before that they shouldn't have."

"People need to read *which* tests materials have passed before they buy them: Are they the relevant ones? Some stuff you can put in your car for sound deadening—and that's the test the manufacturers talk about—but you can't put it in your studio. Just because someone else is using it doesn't mean it's safe; it just means no one has called 'em on it."

Besides choosing the right materials, installing a sprinkler system and making sure your building passes code, Colleran cites two things that studio and other facility owners can do to prevent a fire: "Watch your cigarettes. And putting huge fuses in a guitar amp because it's heating up isn't a good idea."

And there's one more perspective: How do you prepare yourself for a fire?

An expert on that, not by choice, of course, is Rich Goldman, one-time owner of legendary Cincinnati funk palace 5th Floor Recording. In the summer of 1987, a fire broke out on the top floor of the downtown building where Goldman's studio was located. It was a six-story building with an attic, but after the fire was put out, "Our ceiling became the new roof," Goldman recalls.

Nobody was hurt. An engineer spotted the fire early, and Goldman told everybody to, "Grab whatever you can and get out." But most of the equipment, including a Sphere console, MCI 24-track deck and tons of outboard gear, was ruined. "That's what happens when you have hundreds of gallons of filthy water pouring into your control room," he says. Although they were able to salvage some equipment, "Once you have water going through it, will it ever work right?" he asks. "Even if it turns on, the water would certainly shorten its life, and you don't know if you can depend on it."

Goldman is now a partner in Riptide Music, a production company in Marina del Rey, Calif. "We were affected by the Rhode Island fire, too. After it happened, we called a fire meeting and got together with some of our neighbors in the building to talk about emergency plans."

The lessons he learned? "You need the right fire extinguishers. Some of the foam stuff they use is just disastrous for electronic equipment and dissolves it right away. The extinguishers that use powders are not great either, but that stuff is at least cleanable."

"And have a look at your insurance policy. I can't emphasize that enough," Goldman encourages. "We used an adjuster between us and the insurance company. In fact, the adjusters who came to us had handled the Caribou Ranch fire [James Guercio's resort studio in Colorado, which had burned down two years before], so they knew just what to do. They had an information packet on my doorstep the next day. They take something like 10 percent of the settlement, but that's fine. You're in a business negotiation with people who are expert in a business that you're a total novice in. So someone who knows how to work it is worth their weight in gold." ■

*Paul D. Lehrman is a composer, writer, producer and educator. He no longer smokes and uses only virtual guitar amps. Thanks to Michael Hammerschlag (hammernews.com) for his reporting.*



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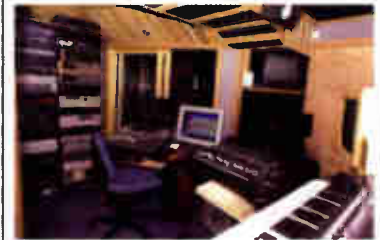
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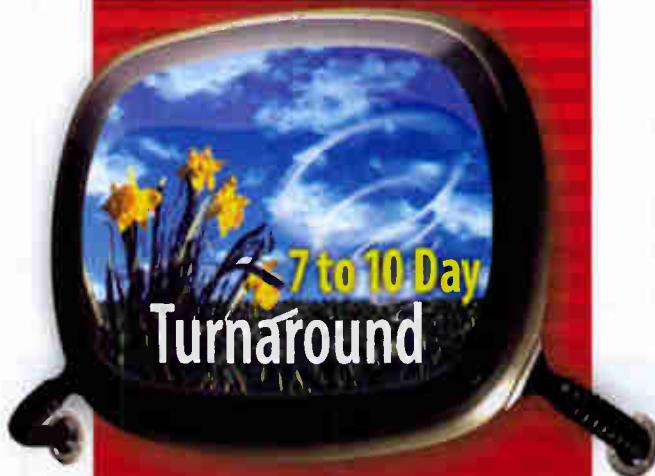
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# BSS FDS-366 OmniDrive Compact Plus

## Speaker Processor and a Whole Lot More

I carry my Technomad ProRack to every one-off. It contains three key pieces of audio gear that I don't feel comfortable without: The Midas XL-42 (reviewed in *Mix*, March '02) is a piece of the rock—a chip off of the old block—that gives me the same great mic pre and EQ found on an XL4 console; the new TC Electronic Reverb 4000 (reviewed in this issue, see page 104), which replaces my trusty old M5000; and

is not very flat for a condenser mic. I've spent much time analyzing its frequency response and found that it benefits from having a dozen very specific filters inserted, all very minor cuts of just a few dB but at just the right frequencies to smooth it out. I used to simply insert a VariCurve, but the Compact Plus offers more options in a single rackspace. Because these filters are for the mic, they're placed on that input.

the vocal to send directly to a small speaker, usually an EAW JF80, which is perfectly fine because it's only used for vocals. The speaker fills in the place where the two sidefills meet downstage-center, where there's always a bit of audio confusion. By delaying the small speaker to synchronize with the sidefills, it reinforces the direct sound to create a sweet spot. Again, the filters placed on this output are used to tweak the sound of this speaker.



the BSS FDS-366 OmniDrive Compact Plus. The FDS-366 offers a wealth of functions beyond its ability to drive a true stereo, three-way system—or three bi-amped outputs for monitors—or MIDI link to slave multiple units for creating stereo four/five/six-way systems. Other useful features include a mono sum of all three outputs for feeding a subwoofer; zoning to six discrete areas using fullrange or band-restricted outputs; a built-in mic input to measure driver delay requirements; and even a stereo AES/EBU digital output for studio monitoring applications. Although the FDS-366 was basically designed as a loudspeaker-management system, I've found it to be a surprisingly handy multipurpose tool, ideal for a variety of audio applications beyond its main purpose.

### BUILT-IN EFFECTS RACK

The FDS-366 OmniDrive Compact Plus is a 3-in, 6-out processor that gives me three channels of processing with up to 60 filters of parametric EQ and, if needed, delay. Listening tests have convinced me that it is the sweetest-sounding digital parametric. Its 24-bit, 96kHz converters provide an open sound and dynamic range that rival the best analog equalizers.

My favorite singer insists on using an AKG C535, which, as many of you know,

### TUNING SIDEFILLS

On the output, I use another set of filters to tune the sidefills. I use Meyer CQ-2 or MSL-4 self-powered speakers. Their quality is consistent enough from one to the next that when I put the sidefills in the right place and use the correct preset from before, I pretty much just have to turn them on and confirm their response. In this way, I have a high-quality insert that's always tweaked from my previous gig. If I don't get a soundcheck, it's no big deal. Though I'd never use compression in the monitors for a singer, adding a little dynamic EQ notch nips the nastiness in the horns for the loudest notes.

I route a second output directly to the dedicated vocal reverb in my rack without having to go to the console, using EQ on that output to tweak the reverb. A third output routed from the vocal is returned to the console for use in the band's mixes. Again, I can use a different EQ to give the band the sound they'd like, which may be different from how the vocalist likes to hear it. A very wide dynamic EQ plus a little light limiting keeps me from killing them with the big notes.

### COOKING UP A SWEET SPOT

Sometimes, I need to even out the slight anomalies where the sidefills meet onstage: I sometimes use a fourth output of

### A COUPLE SPARE EQs...

With two more ins and two more outs, I still have two entire channels of processing left. This year, I've been inserting them as mix EQ for two musicians in the band: David Piltch and Greg Leisz. Both of these world-class musicians rely heavily on their mix, so precise tuning is critical. Piltch plays string bass without the benefit of an amp, so it's important that he has a reasonably flat wedge as a starting point for the EQ gymnastics required to get the mic and pickup on his upright to work together. Leisz plays acoustic, electric and steel guitars and needs a flat, smooth response to hear the music he delicately solos over.

### REMOTE ACCESS & BACKUP

The Compact OmniDrive Plus' output EQs can be adjusted from within Smart Live, which I use daily to confirm the response of the monitors. Programs can be backed up on a PCMCIA card, but I also store its settings on my laptop with SoundBench. I guess I could just ask the local sound company for a Compact Plus, but they're often being used (as intended) as speaker processors. ■

*Mark Frink is Mix's sound reinforcement editor. He is currently on the road mixing monitors for k.d. lang. He's logged lots of hours on the FDS-366.*



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- **Stand-alone operation** — program your mixes at the studio and then bring the 828mkII to your gig — no computer needed. Need to tweak the mix? Do it on site using the back-lit LCD and front-panel controls.
- **Multiple CueMix DSP mixes** — create different monitor mixes for the main outs and headphones. Add send/return loops for outboard gear — with no latency.
- **Front-panel mic inputs** — connect a pair of mics or any TRS input with front-panel convenience.
- **Mic/guitar/instrument sends** — insert your favorite outboard EQ, compressor, amp or effects processor to the two mic/guitar inputs, before the signal goes digital.
- **20 inputs / 22 outputs** — there's no channel sharing in the 828mkII; the mic inputs, SPDIF I/O, headphone out and main outs are all handled as separate channels.
- **Support for 96kHz ADAT optical digital I/O (S/MUX)** — provides 4 channels at 88.2 or 96 kHz.
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