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PROFESSIONAL AUDIO AND MUSIC PRODUCTION

DESIGN & ACOUSTICS

- Class of 2006
- Bass Behavior
- Room Treatments
- New Live Venues

THE MIX INTERVIEW

Hitmaker Mick Guzauski

Stephen St.Croix
The Final Column

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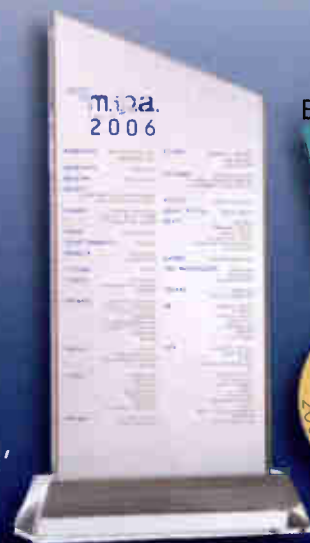
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PROFESSIONAL AUDIO AND MUSIC PRODUCTION
June 2006, VOLUME 30, NUMBER 6



On the Cover: Eargasm (Santa Monica, Calif.), is a new music-recording studio designed by Larry Swist. An isolation shell and acoustical treatments were built offsite and installed around a Digidesign ICON. Photo: Amanda Strong. Inset: Steve Jennings.



features

24 Studio Design: Bass Behavior

Low-frequency sound waves are a rogue bunch, firmly resisting our attempts to harness and control them, right? Wrong. Acoustician Bob Hodas demystifies the physics, dispels the myths, and shares tips for taming your studio's low-end energy.

30 The Class of 2006

Every June, *Mix* devotes special coverage to facility design and acoustics. This year's "Class of" pictorial feature showcases some of the most impressive new and reworked rooms to open since last summer, ranging from composer suites to post houses to mastering facilities.

36 New Venues Sprout Up on the Live Scene

It's hard to beat the energy of a live performance, whether it's a jazz gig or arena rock. From local clubs to world-class amphitheaters, new halls are spec'ing top-of-the-line audio gear and existing venues are upgrading their systems to attract big-name artists. Check out this year's crop of innovative new or renovated live performance venues.

38 Acoustic Treatment for All

Consoles, a good monitoring system, plenty of outboard gear and a stocked mic closet are high on the list for anyone putting together a studio. But as we all know, great recordings start in a really great-sounding room. Optimize your recording space with the right acoustic materials.

80 Hits From NAB 2006

If you think the audio world has become complicated, spend one day at NAB, and you'll soon get an idea of how complex HD system setup is in the video world. Still, audio rides along, and there were plenty of new products at this year's show for both straight-ahead audio recording and for system integration. If you couldn't make it to Vegas, check out our findings.

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

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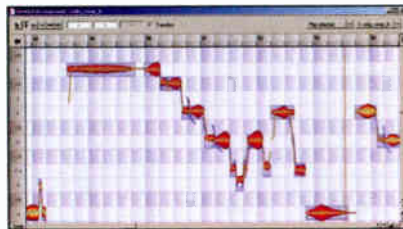


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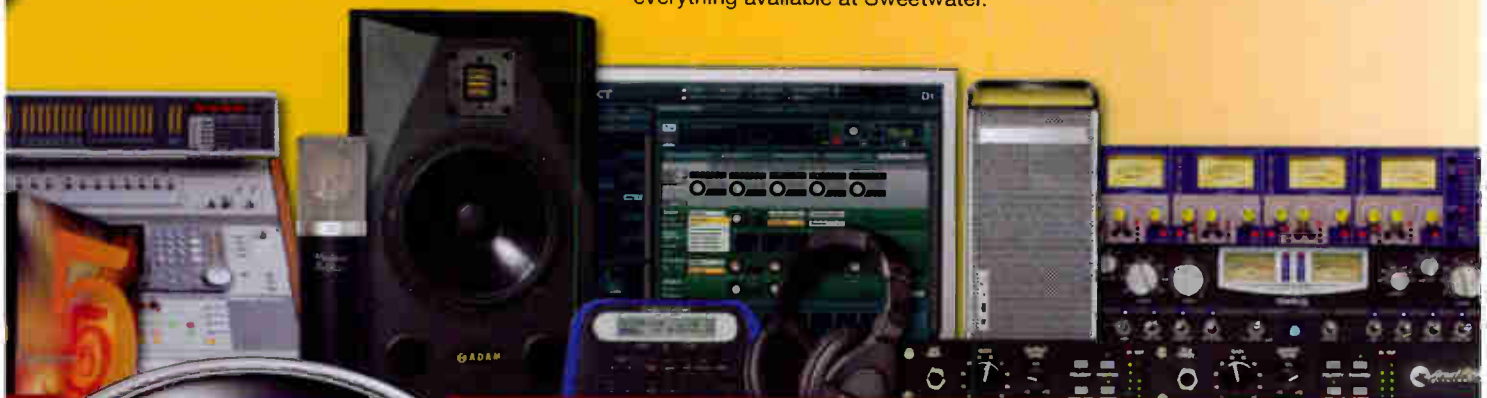
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FOUNDED IN 1977 BY DAVID SILVERMAN AND PERRY ROBER

Fare Thee Well, Stephen

A little over five years ago, I received an email from Stephen St.Croix with the subject line "Goodbye, Mix." Oh no, I thought. What have I done? I've pushed too hard. We were a day and a half from shipping the magazine, and even by Stephen's measure, we were cutting it close. I opened the file, dreading what he might say. Then I read a love letter to our industry, which closed with the hardest couple of paragraphs I've ever had to read. I've held that document on my hard drive, opening and re-reading it a number of times over the years. Today, we're sharing it with you.

Stephen St.Croix passed away in the early morning of May 6, in his home, surrounded by family and friends. He wasn't supposed to live that long, but because he did, we all learned a little more about how it can feel to be passionate about music...and life. He stretched our deadlines over the past five years, but he never missed a column. When his bones were so broken from a motorcycle accident, he composed from his hospital bed using ViaVoice. When morphine made him groggy, he stopped taking it. It pained him these last three months when we ran "classic" columns. He was burning to write. He had so much to say. He felt love and a deep responsibility to you, his readers, whom he always considered family.

Stephen was quite simply the smartest guy I've ever known, and one of the most creative. He designed and built the Marshall Time Modulator, and he hosted Stevie Wonder in his home for six months during their work together on *Songs in the Key of Life*. He redesigned the interface for the Quantec Room Simulator, and he restored *The Wizard of Oz*. He held dozens of patents worldwide in technologies far removed from music-making, and he delivered a column about swimming into the Mediterranean and listening to a solo guitar on a rock in the water. That brought him great joy, at a time when he needed it.

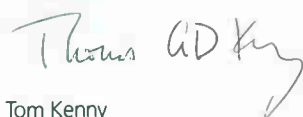
Yes, he had an ego that would fill a concert hall. And he had the Harley swagger and rock-star persona that would dominate a room. That's what you read each month. At home, he was humbled by the genius and significance of an iPod. He would describe in great detail the sight of the first snow on the naked Maryland trees. More than anything, he loved to sit and pet his cats. He approached death with the spirit of a Teddy Roosevelt and the dignity of a Nelson Mandela. He was one of a kind.

More than anything, I think I'll miss the phone calls. A voice from 3,000 miles away that could answer any question or reassure any decision. He told me why we have so little lightning in California, and he long ago predicted how records would soon be made. He was right.

A few years back, he called just to say that he was in love and was going to be married, to a wonderful woman named Teresa. He, a man who lived life for the sheer experience, said he couldn't believe he waited all this time to experience real love.

I can't remember our first phone conversation way back in the late-'80s, but I'll never forget the last. A week and a half before he died, while trying to tweak a column, he called to say thank you. To me. To *Mix*. For allowing him to talk to all of you all these years. He wanted to remind me how special it was that we got to be a part of this whole music-making world. I can only hope that I am so gracious as I stare at my final days.

Stephen, we love you and we'll miss you. All of us.



Tom Kenny
 Editor

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Co-owned by artist/producer/musician Salu Zonana, 20/20 Music (www.2020music.com; Westchester, N.Y.) provides many ways to make a great-sounding album, from Pro Tools HD multitrack recording, fully automated mixing and analog/digital mastering, to two floors of live rooms, iso rooms and a large control room. The studio also offers Dolby Digital 5.1 encoding, and can handle post efforts for indie and feature films, DVDs and TV work.

Gear of note includes a Sony DMX-R100 digital console, Genelec 5.1 monitoring, Digidesign Command8, Mac G4/G5s and a fine selection of mics and software.

For out-of-town guests, 20/20 Music provides overnight accommodations surrounded by horse farms, lakes and open land.



INCUBATING IN THE LOFT



Jesse Deese, founder of SongScope.com, has partnered with Joe McClure (McClure Broadcast Group) and Buddy Nelms (The Loft Entertainment Group) to form an "incubator" artist development and recording facility in Columbus, Ga. The facility includes a multimillion-dollar "digital-vintage" recording studio (The Loft), a graphic/multimedia production studio and a live performance venue.

The Loft features a Neve 8108 console, Studer A827 2-inch tape machine and Pro Tools HD through Apogee converters. The studio was constructed above showcase venue The Loft, which has hosted

such artists as Shawn Mullins, Edwin McCain, Jennifer Nettles, Sugarland, Angie Aparo, Sister Hazel, Keni Thomas, Susan Tedeschi, Dido and Beebo Norman. "The studio was a natural complement to our performance venue, booking and promotion experience," says Nelms. "Now we have a world-class recording facility wired directly to our stage."

Consistent with SongScope's vision to empower songwriters, image development, package design and Web development will be directed by Sean Michael Schöff, a veteran graphic media designer and founder of the SeanroX.com Graphic Studio, also housed within The Loft's campus.

The SongScope artist development team is currently in search of talent to develop, especially singer/songwriters. Interested? Visit www.SongScope.com.

JOHN PATTERSON 1960-2006



John Patterson passed away on March 28, 2006, following a lengthy battle with cancer. Patterson joined Yamaha in 1997 as R&D manager, focusing on the commercial and professional audio markets.

Patterson began his career in professional audio as an intern with Chicago Recording Company, and in 1984, became a freelance recording engineer/producer with mixing/producing credits on projects with Frank Sinatra, Jon Secada, Peter, Paul & Mary, Chuck Mangione and others. He produced an album featuring soprano Jessye Norman and pianist Michel Legrand.

"The perseverance and courage with which this man dealt with his illness was an inspiration to all his far-less-burdened friends," notes Hank Neuberger, who first met Patterson during his internship at CRC.

Prior to joining Yamaha, Patterson worked extensively with producer Phil Ramone for more than five years. "A gifted friend, John embraced the life of technology and music—and was absolutely true to both," Ramone remembers. "My time with him produced a great deal of humor and expertise. He had the ability to read a score and engineer anything from a classical session to a jazz date, while in his spare time helping me to build a dream studio. To say I'll miss him would be an understatement. Maybe he will do upstairs what he did on Earth. Love you, John."

"John was an important asset and friend to all of us at Yamaha and he will be greatly missed," comments Larry Italia, VP/general manager at Yamaha Commercial Audio Systems Inc. "He fought his battle with dignity and maintained a strong, positive attitude."

Patterson is survived by two sisters, Janice and JoAnn, and three sons, Ian, Corey and Jordan.

CLEVELAND ROCKS WITH FAIRLIGHT

Cleveland's Commercial Recording Studios (www.commercialrecording.com) recently installed a Fairlight DREAM Constellation-XT to broaden its HD and 5.1 businesses.

"As our business continues to grow, we are finding that our clients have a greater need for 5.1 and HD projects," said George Gates, owner and engineer at Commercial Recording. "This growing need coupled with the constant push for increased workflow led us to the Constellation-XT. In addition, the Constellation-XT's backward compatibility enables us to seamlessly access our past projects. It's the best of both worlds: We can still maintain our working project library and stick with a work surface we're all familiar with, while adding significant functionality to our process."

All five studios at Commercial Recording are connected to a central machine room, which networks all Fairlight systems through Fairlight MediaLink.



ON THE MOVE



Who: Ed Zeier, managing director at POP Sound

Main responsibilities: overseeing day-to-day operations and casting the strategic direction of the company to adjust, adapt and lead into new technologies and markets while maintaining our current market leadership in our core capabilities.

Previous lives:

- 2002-2005, digital cinema visual and audio consulting work with various companies, most recently as director of business development at Barco and director of cinema at DTS
- 1983-2002, Universal Studios senior VP post-production

The last great film I saw was... *The Chronicles of Narnia*—great story with hope.

The most exciting project I worked on was... top-secret involvement in a special aspect of a very large gorilla movie.

Currently in my CD changer: The Beatles to Led Zeppelin to Nelly—thank goodness for a 10-CD changer!

When I'm not in the office, you can find me... on the golf course or at one of my kid's sporting events.

MIX L.A. OPEN UPDATE



The 11th Annual Mix L.A. Open set for Monday, June 12, 2006, at the Malibu Country Club, is being strongly supported by the audio industry.

Confirmed sponsors at press time include Absolute Music, Audio-Technica, CE Pickup/IAC, Harman Pro/JBL Professional, *Mix*, The Pass Studio, P&E Wing/L.A. Chapter of the Recording Academy, the Record Plant, Shure, Vista Automotive, Warner Bros. Studios and Yamaha Corporation of America. A limited number of playing spots are still available. Call Karen Dunn at 925/939-6149 or visit www.mixfoundation.org/LAoper/LAopen.html for information.

Presented by the Mix Foundation for Excellence in Audio and *Mix* magazine, the tournament benefits the hearing conservation efforts of the House Ear Institute's Sound Partners program, music education programs of Sound Art, and scholarships for students of the audio arts and sciences.

CORRECTION

In last month's DPA 4091 "Field Test," Fred Aldous used the Holophone to capture Super Bowl XXXIX and not NASCAR. *Mix* regrets the error.

INDUSTRY NEWS



Ian Jeffreys

Music producer/Citantro Music owner **Ian Jeffreys** joined **Fluid Music** (NYC)...After three years with Tonic, New York, Emmy Award-nominated audio engineer/sound designer **Brian Beatrice** joined **Bionic Media** (NYC). In other company news, Bionic has upped its HD offerings by adding Avid's DS Nitris HD system...**QSC Audio** (Costa Mesa, CA) appointed **Danny Pickett** to the key accounts manager, cinema position...New North American sales manager at

Peavey (Meridian, MS) is **Trevor Gibson**, a longtime Peavey independent sales rep...Overseeing the sales force in the U.S. for **M-Audio** (L.A.) is **Ralph Goldheim**, national sales manager...**Chris Lordots** returns to **Gecco** (Des Plaines, IL) and joins the outside sales team, working in the Central region. Lordots replaces Todd Harrington, who is relocating to the Denver

area, where he will handle Gecco's Midwest sales...New distribution deals: **Linear Acoustics** (Lancaster, PA) appointed **J+C Intersonic** (Regensdorf, Switzerland) as distributor for Switzerland, Germany and Austria; **M17** (Malmo, Sweden) will distribute **SSL's** (Oxford, UK) **Duende** in Germany, Benelux and Japan. The company also signed distribution deals with **Chandler Limited** (Waverly, IA) for the **EMI TG12413** (throughout Europe) and **NOTION** (Europe, Japan), and has added **Visound** (Portugal) to its pan-European network; **TC Electronic** (Westlake Village, CA) added **Bormann Marketing** (Edina, MN), which will handle Northern Illinois, Wisconsin, Minnesota, and North and South Dakotas. **Online Marketing** has taken on all TC Electronic U.S. lines, **On the Road Marketing** (Wadsworth, OH) is now representing **Lab.gruppen**, and **Brownstone Marketing** (Seattle) and **PCM Marketing** (Walnut Creek, CA) added **Dynaudio Acoustics** to their lineups.

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

Class of 2006

So many great studios have opened up recently. Unfortunately, we don't have room for all of them in print. Find more online as you peruse this year's honorable mentions.



Mix Interview: Mick Guzauski

We dug through the *Mix* archives to get more Mick Guzauski trivia—including his interview in 2001, his thoughts on recording for surround, plus an extensive discography.



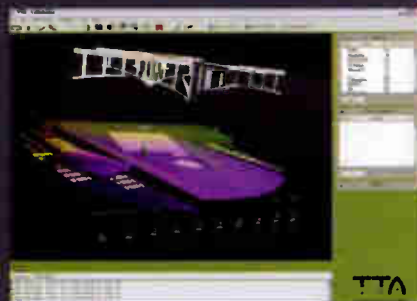
New Live Venues

This article focused on completely new or redesigned live performance venues, but there are plenty of great spaces out there that have upgraded P.A., consoles, etc.



"Audio In the Round"

London's Royal Albert Hall recently hosted an opera-in-the-round *La Bohème*, which combined Out Board's TiMax audio imaging delay matrix with a new automated tracking



system developed by Norwegian technologists Track the Actors (TTA). Get more information and diagrams on how the audio "surrounded" the performers onstage and enveloped the audience.

NARAS NOTES: THE END OF STEREO

BY HANK NEUBERGER

[Editor's Note: Last month we brought you an introduction from the Society of Professional Audio Recording Services. This month we bring you opinions of the Producers & Engineers Wing of the Recording Academy®, here represented by perennial board member and industry veteran Hank Neuberger, whose most recent big project was the 5.1 HD telecast of the Grammy® Awards.]



Among the many technological and marketplace challenges to our familiar world of pro audio, the one that shakes up even the very best mixers is when they hear that their current project does not require a stereo mix. No stereo. At all.

Blame surround sound if you like, but the members of the Producers & Engineers Wing, the readers of *Mix* and the manufacturers that advertise here have supported surround for years. Little did we know it was going to cut into the primacy of good ol' stereo.

Surround soundtracks have multiplied exponentially in recent years. Millions of homes around the world have 5.1 home theaters, and countless millions of videogames support surround audio during play. Feature films are exhibited in surround, and their DVDs default to it. The public has voted. Play them surround, and they like it.

Of course, there are still plenty of release and exhibition formats that prioritize stereo, such as CDs, downloadable tracks and almost all radio, including terrestrial, satellite and Internet. But if audio is synched to a picture, stereo is getting harder to find. And the biggest purveyor of surround audio is right there in your home already—television. The top primetime shows do not even broadcast stereo as we know it. Yes, the mixers for primetime hits like *CSI*, *West Wing* (gonna miss that one), and *Law & Order*; entertainment specials like the Super Bowl, the Oscars and the Grammy telecast; and sports from ESPN are still delivering two soundtracks. One of them is 5.1 discrete surround. But the other one is LtRt (left-total, right-total). No more Left-Right. In most cases, the HD delivery specs don't call for stereo, and there isn't even any room for it on most HD video masters (or the live transport stream).

So when Tony Soprano is slapping Christopher upside the head on HBO, or when Bono is thanking the audience for another Grammy, there are two soundtracks: 5.1 on the HD broadcast, and LtRt (not stereo) on the SD broadcast. And to complicate it further, that SD soundtrack needs to work two different ways.

Unlike the discrete 5.1, the LtRt matrix mix is monitored in two different fashions: (1) encoded, through two speakers; or (2) decoded, by something like Pro Logic or Circle Surround in a home receiver, and monitored through a 5.1 home theater.

The LtRt is typically a downmix derived from a discrete 5.1 surround mix. Who creates—and when and where they create—this LtRt matrix mix is really the crux of the issue. Because the majority of the audience still watches the SD broadcast, the LtRt matrix mix deserves our serious attention.

Previously, at least in a music session, a stereo mix and a 5.1 mix would have been balanced independently. In sound for picture, the signal paths and workflows in practice today combine the two. Sometimes hardware encoders and sometimes software encoders are used to allow the mixers and producers to adjust the parameters that determine the fold-down from the 5.1, such as the amount of center channel and rear channels included. When a matrix LtRt is anticipated, the placement of elements in the discrete 5.1 source mix need take the LtRt into account. As always, the careful attention of dedicated audio mixers and producers can deliver stellar results.

And that's the rub. With new HD video formats emerging nearly every NAB show, and networks rebuilding their entire infrastructures from end to end, some broadcasters and cablecasters are beginning to think that if they receive the discrete tracks of a 5.1 mix, they can *automate* the LtRt matrix downmix. Does that sound like a good idea to you? Do you let the replicator balance your rhythm section?

And I haven't even mentioned transporting your audio in Dolby E, getting the correct metadata to stick with it (hello *dialnorm*), the perils of the Dynamic Range Control in the set-top box, etc.

There are lots of *gotchas* in this whole 5.1-to-LtRt thing. It takes skillful, artful audio professionals doing their best to get these soundtracks from the mix suite to the home as they were intended. And it always will.

If all this is giving you a headache, you are not alone. But if you'd like to lay back, and just experience what surround sound was always meant to be, don't miss the 2006 Best Surround Grammy winner: Dire Straits' *Brothers in Arms*, remixed by Chuck Ainlay. Ah, the good ol' days. ■

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George Massenburg



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Goodbye, Mix

[Editor's Note: Stephen St. Croix penned the following in February 2001. We held it on a hard drive until the day came when it made sense to use it. Well, that time has come. Stephen passed away on Saturday, May 6, from complications brought on by melanoma. This is his tribute to you the reader, who was always foremost in his mind.]

I write you this month to say goodbye. It has been a royal pain in the ass writing this column all these years, yet there was no choice for me. You, my readers, have been my extended family for decades. In fact, I have never actually written a column, I have simply been writing personal letters to you since the beginning.

Obviously, it was mandatory that I be interesting or at least somewhat entertaining in order to keep you as readers. I *could* just have been obnoxious and controversial, I guess—certain New Yorkers have proven that this can work just as well—but I wanted to take an approach that I would not forget or drift from. This meant, in the end, that I had to just be myself, to write to you exactly as I speak, to think of each of you as a personal friend that I want to share with.

And you have certainly seen me share. I have enjoyed telling you of new technologies that I have discovered. I have loved exposing scams, deceptions, misinformation and bad TDK CDR chemistry. I have foisted upon you countless extreme opinions and values, almost endless advice, and *never* a neutral word. Yup, I have shared.

One of my favorite tricks has been to make some outrageous statement that stretches my credibility to the max, or sometimes even beyond—knowing that the time will come, either in a few days, or a month or a year, when you discover that what you read here was in fact accurate and true.

On the other hand, when I began this column, I used outrageous, extreme exaggeration beyond the point of absurdity—to drive a point home. The point was to use the shock and simple humor of the out-of-proportion spec or statement to make you stop and think, to evaluate what a real number might be, and to see the point that something extreme was going on.

As the column matured throughout the subsequent decades, I made a conscious decision to honor my steady readers, those who were sharp enough to judge for themselves. I consistently narrowed the range of my



absurd exaggerations until they became almost feasible. A dangerous approach, to be sure, but by forcing the reader to evaluate, the humor cut a little deeper, and I could take a more sophisticated approach to presenting concepts of scale—common in an industry of specs, both real and bull.

Simply put, to get the most out of my columns, you—my readers—had to learn to read me; to adapt and track as I led you along the convoluted path that is my world.

And that brings us to my world. One of the secrets of commentary comedy is to have a very different view of everything you see. You have to be strange enough, warped enough and twisted enough to see it all in a way that your audience wouldn't without you, while being careful not to be so different that they can't relate. I have tried to do this for you.

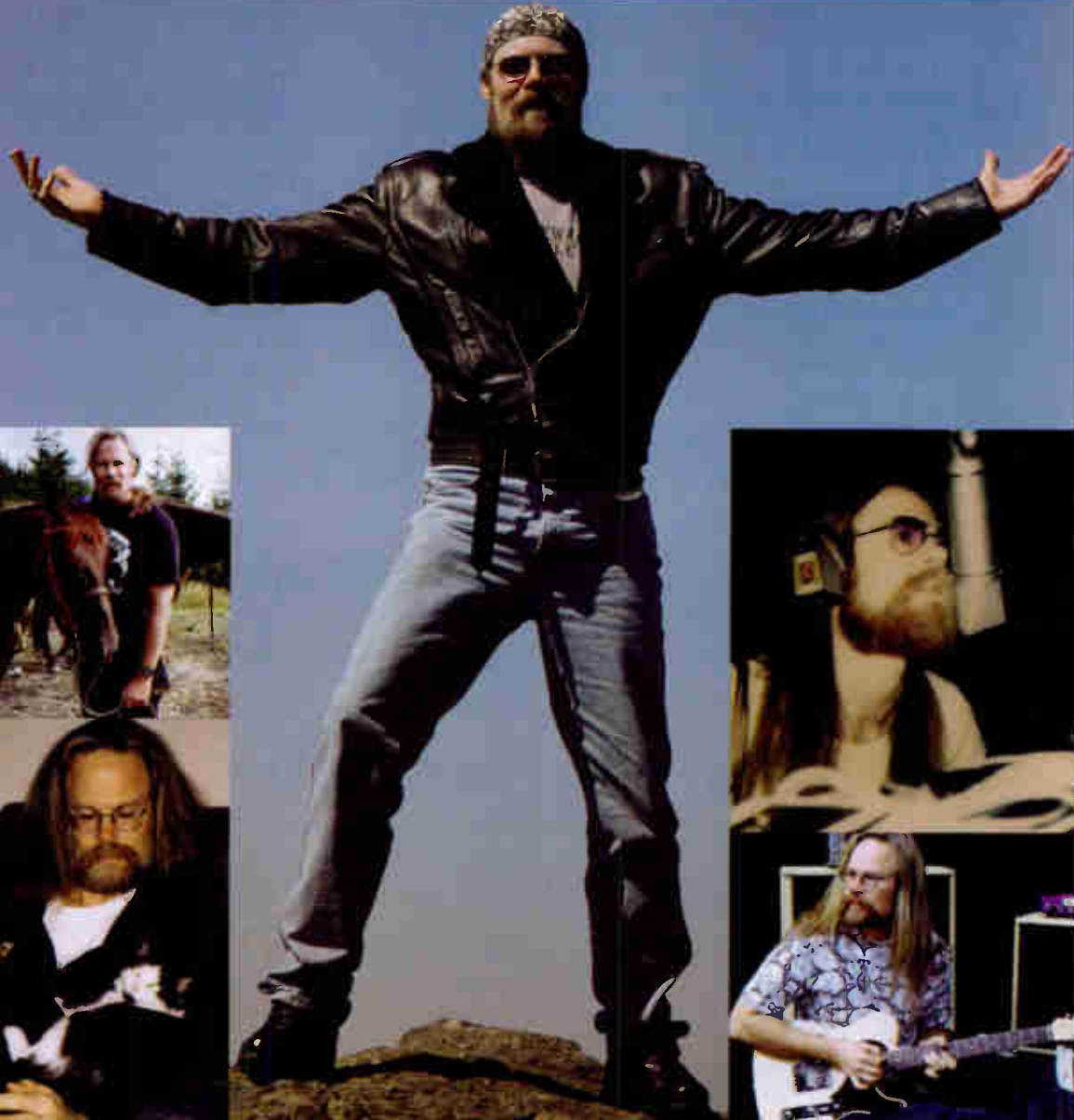
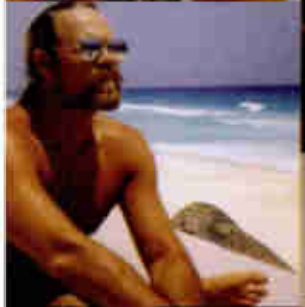
I have always considered my column to be the comic pages of *Mix*, the relief from pages and pages of required and valuable techno-geekitude, the intellectual freak show within your very own chosen industry. But I wanted to include actual information as well. I wanted to teach, to expose, to help, to confirm and to shed insight. I wanted to share.

And my world? Well, it seems that it has come to an end. Three days ago I was presented with the possibility of having advanced fatal cancer. As I wait for biopsy results, I thought I would take a moment to say goodbye to you, my readers—my extended family.

If I made you think, I did what I wanted to do. If I made you laugh, I did what I wanted to do and had fun to boot. If I saved you from some grievous error or



IN MEMORIAM: STEPHEN ST.CROIX



turned you on to a different and possibly better way to do or understand something, we all won.

If I pissed you off but you kept reacting, there must have been something there

you needed, even if it was just to feel anger toward me.

In any case, I say to all of you, goodbye, and thanks for playing along—it meant the world to me. ■

In lieu of flowers, the family prefers that donations be made to: Melanoma Research Foundation (www.melanoma.org); African Wildlife Foundation; or Children's Hunger Fund (www.childrenshungerfund.org).

SSC: The Man Behind the Mystery

For 18 years, Stephen St.Croix offered his unique outlook on sound, fast cars and motorcycles. But few readers knew much about his audio career.

At age 26, St.Croix (his actual surname was Marshall, but he adopted the pen-name St.Croix because of his love for the Caribbean isles) founded Marshall Electronic in 1973 and a year later debuted the Marshall Time Modulator. The unit used custom V-cut P-MOS CCD integrated circuits (quite unusual for 1974) and offered a wealth of effects, including flanges, auto double tracking, vibrato and more.

A pro session player, St.Croix programmed synthesizers and worked on Stevie Wonder's *Songs in the Key of Life* and *The Secret Life of Plants*.

As the Marshall Time Modulator entered its second generation, St.Croix noted the development of quality digital reverbs (both stateside and abroad) and became the distributor for Quantec, which had launched its landmark Quantec Room Simulator in 1982. Eventually, the relationship expanded, and after acquiring the software development rights for the Quantec XL, Marshall created a graphic interface/hardware controller package for it.

In 1985, St.Croix invented Revectorization, a system for removing noise and distortion from archival recordings. He used this re-synthesis/psychoacoustic masking process extensively for reconstructing the original

soundtracks for re-releases of *Gone with the Wind*, *The Wizard of Oz* and other classic films.

After a brief stint at working for *Recording Engineer/Producer* magazine, St.Croix began writing "The Fast Lane" column in *Mix* in March of 1988. During those early days, he also consulted with (and occasionally designed products for) companies such as Wadia and Symetrix.

With partner Edmund Pirali, St.Croix formed Intelligent Devices in 1995, a company specializing in digital technologies. I.D.'s projects included designing and developing PARIS (Professional Audio Recording Integrated System), a 128-track/24-bit DAW for Ensoniq/E-mu. St.Croix and Pirali also created a line of award-winning stand-alone and TDM plug-ins—the AD-1 Pro Audio Analyzer (with onscreen high-res meters, stereo spectral analysis, phase metering and waveform clip-history display) and the I.Q. Intelligent Equalizer.

Ironically, the most important products from Intelligent Devices weren't for studio or music applications at all. The SES Speech Extraction Software was designed for forensic audio. With its ability to recover speech from a noisy, faint or otherwise inaudible recording, SES is in use by leading law enforcement agencies worldwide.

—George Petersen

Space Array

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Bass Behavior



Empirical Tales on the Low Down

BY BOB HODAS

Bass...the final frontier. I don't know any subject that is less understood or creates more questions and anxiety for engineers in control rooms small and large. We are talking about the desire for coherent, solid bass, free from peaks or cancellations—tight bass, not the kind that fills the room by swimming around.

I rarely have clients call up and complain that their big room problem is with high frequencies. That's because frequencies above 400 Hz are relatively simple to deal with; a little absorption, some diffusion, and it's all set. Identifying the reflection source is also relatively straightforward; it's just like billiards. At high frequencies sound and light behave very similarly, and simple geometry goes a long way.

Engineers have long struggled with getting low frequencies under control. It's a struggle because there are many factors that contribute to the problem: wall angles, construction style (stiff or flexible), room size, speaker phase (not polarity reversals, but group delay), speaker placement, listener placement, and the primary focus of this article, gear placement. By gear I mean not only the racks of stuff scattered throughout the room but also the junk piled up in the corner, and even the console itself.

A primary issue of bass is predictability. I have seen control rooms that measured great when they were empty. At the early stages of tuning those rooms, when we did initial measurements, I had high hopes and was very excited about how well-behaved the bass was. But when I came back to the room

after the console and producer's desk had been installed, the measurement didn't look as good (Fig. 1). I formed a theory that bass behaves a lot like water; it's simplistic, but it has helped me to visualize what is going on in a room. Picture a calm pond with a rock sticking up out of the surface. If you throw a small stone into the pond, the waves will travel out from the point of impact. When they hit the rock some of the water will travel around the rock, but some will reflect back and cause interference patterns. These interference patterns exhibit themselves as peaks and dips in the bass response. I'm not a Ph.D., nor do I play one on TV; my theory was just a way of visualizing a reason for my measurements. But the information I am going to impart here is based not on theory, but rather on solid empirical findings. This article offers real-world measurements taken with Meyer SIM 2 and SIM 3 analyzers, which point out real issues that need to be addressed in control room design and setup.

THE ELEPHANT IN THE ROOM

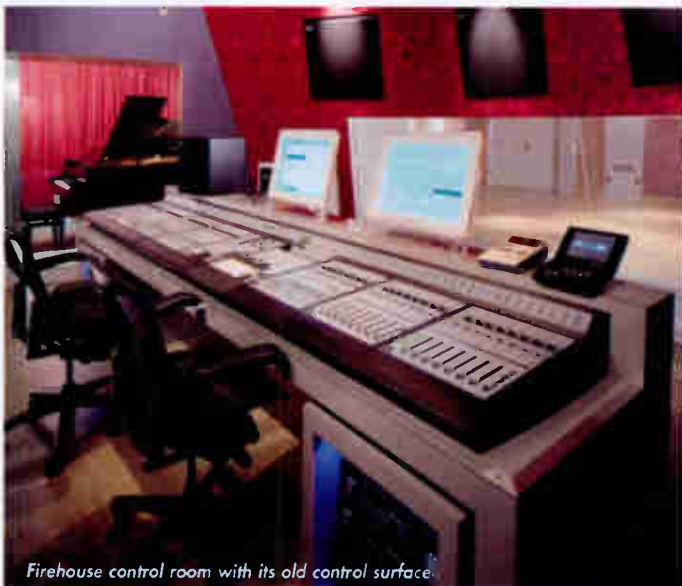
If all of this gear is making it harder for us to get a decent bass response in a room, it makes sense to try to minimize the gear, or position it in a way that minimizes its impact. One of the outstanding issues here is the size of some mixing consoles. Over the years producer/engineers have demanded more and more channels. I have seen consoles expand until people had to cut holes in the sidewalls to accommodate the console's front corners, where accessing the front of the console meant

in the Studio

climbing over the console itself. Not only is an über console a formidable barrier to the flow of bass from the front of a room to the rear, it creates a huge surface for first-order reflections directed right in your face. Many engineers have also complained about the amount of low end that rolls around in the front of the room, trapped by the console's front, especially those consoles that have no airspace beneath them.

I had the opportunity to see a console's impact on a room's bass response at Firehouse Recording in Pasadena, Calif., when the staff decided to replace their luxury liner mixing desk (at right) with a new control surface-style console that was completely open below and one-third the width of the previous board (in opening photo, opposite page). Figure 2 shows the before and after responses. As you can see, there were some real improvements in the bass response once there was a more open path through the mix position. Some problems remain but a lot of the missing energy has been filled in. And without the big desk in the room, there was also a dramatic visual effect, a feeling of openness in the room.

Perhaps you can't replace that monster in your control room, since many engineers must have a hard fader for every track. In this scenario, if there is room in front of the console I'll try to build a bass trap. For some of the lower frequencies this setup requires more real estate than most studios have available. In recent years, development of more space-efficient options, such



as tuned membrane absorbers, makes the trap concept a bit more realistic. Figure 3 shows the response of a large room that had a pair of woofers in the soffit as part of the mains, and a pair of woofers built into the front wall on the floor in front of the console. The console had a little air space beneath it, but the issue was complicated by the fact that the mixing desk was on a raised platform—the woofers on the floor were firing directly into the support platform. Figure 3 compares the room as it existed in the original setup and after we built a bass trap in front of the console: The destructive high Q resonance has been eliminated, and the overall mid-bass level above 100 Hz has evened out.



Figure 1: SIM analysis of a control room measured without a console (purple) and with console and producer's desk in place (green)



Figure 2: Control room with large mixing desk (green) and with small mixing desk (yellow)



Figure 3: Control room with floor to meter bridge-style console (yellow) and with bass traps built in front of console (purple)

RACKMOUNT REFLECTORS

Outboard gear racks also affect bass response. The industry has settled into a practice of putting a producer's desk three to four feet back behind the mix position. Typically, the desk is about three feet high and as wide as the console. I don't need to tell you what a formidable barrier the gear racks are, especially when the desk is piled high with even more outboard gear. I often see a nasty cancellation at the mix position due to the reflection off of these babies. To minimize this problem, I like the concept of putting the racks as far off to the side as possible. This configuration creates a U-shaped work area and is ergonomically quite handy. If the outboard gear has to be in the back, try distributing the gear so that it is in two separate producer's desks and move the desks to each rear corner so that there is some space between them. This will allow more bass to flow to the back of the room. Also, angle the racks

to stop the direct reflections from hitting the mix position. Some of my clients have even put the racks on wheels so they can be placed in a more benign position when they're not in use.

If you've read any of my articles over the years, you know what a nut for symmetry I am. The placement of outboard gear needs to follow the rules of symmetry as well. If you pile up a bunch of gear on one side of the studio and not the other, you are going to wind up with inconsistent bass response from the left and right speakers.

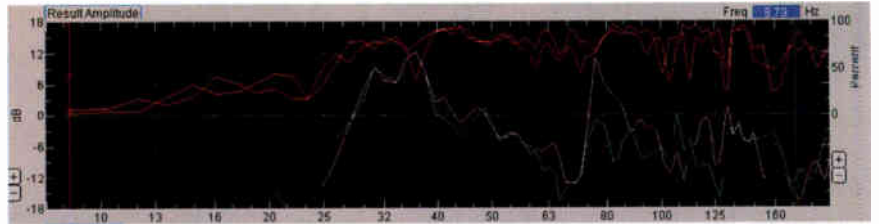


Figure 4: Control room with rack against right wall (purple) and with no rack (green)

This discrepancy will prevent you from doing an acoustical fix for the room that applies equally to both speakers. I'm not

talking about a huge pile of gear, either. As I said earlier, just one rock in a pond can cause some type of interference. I had a very educational experience early on in my room-tuning career that really opened up my eyes. I was measuring a very large control room that had been designed and built with precise symmetry. When I measured the room I saw different responses in the left and right speakers but simply could not figure out why the speakers looked different in analysis. As I looked around the room I finally realized that the only difference

I rarely have clients complain that their big room problem is with high frequencies. That's because frequencies above 400 Hz are relatively simple to deal with; a little absorption, a little diffusion, and it's all set.

between the left and right sides of the room was a small rack against the wall on the right side. I had initially believed this small rack to be insignificant in such a large space, but after I pulled the rack out, the measurements for the two sides matched quite well. In fact, I did not have to pull the rack out of the room, but only two feet away from the wall. The culprit frequency wanted to travel down that wall, and the rack was preventing it from following its natural flow (Fig. 4).

EVERYTHING'S ACOUSTIC

This example points out that something considered insignificant can have a significant impact on a speaker's performance. This rule even applies to the pile of stuff



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you have lying around the room. I recently set up a mid-field system with a pair of subs for a client of mine. He had a collection of old, unused outboard gear, boxes, keyboards and guitar cases on the floor up against the front wall in the center and on the right side of the room. This was a fairly large control room, and he had a fairly significant garbage pile. Because he said he didn't really have any place to store it, I told him just to leave it. I didn't really think it would be much of a problem as it wasn't piled high; it just took up a lot of floor space. Because the room had good symmetry, I first found a place where the left subwoofer looked as balanced as possible. I then set the right sub up using the same distances from the wall so that the subs were both set up the same. When I measured the right sub, it had a big hole at 100 Hz. The only thing that was different was the junk on the right side, so we moved it out. I guess I shouldn't have been surprised but those few pieces made all the difference in the right sub's performance.

Once again, when it comes to bass, you can't make any assumptions. I'm a firm believer that you need to make measurements

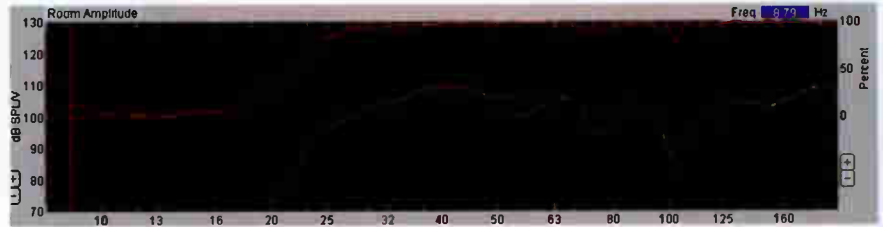


Figure 5: Control room without guitar cases (green) and with guitar cases on right side (purple)

if you want to get your room set up properly. Measuring by ear is just too difficult, especially when you're trying to nail down the source of a problem that is inconsistent between left and right sides. I had a client whose room did not have symmetrical construction. The left side of the room was just a typical interior-wall house construction, and the right side was a beefier outside-wall construction with some extra layers for isolation from the neighbors. As with the client mentioned above, this studio owner had limited storage options, so he piled up about ten acoustic guitar cases from the right front corner of the room, stretching along the right wall to the console. What we found was pretty amazing. The guitar cases actually acted like some kind of bass

trap. Normally I would assume that they would suck out some useful information, like the example above, but in this case (no pun intended), they made the right speaker look more like the left speaker (Fig. 5).

I want to leave you with the idea that you shouldn't take anything for granted when it comes to bass. As always, symmetry is very important, and as in life, try to avoid as many obstacles as possible if you want to flow like water. ■

Bob Hodas tunes studios around the world; from Sony in Tokyo to Abbey Road in London and all parts in between. His Website is usefully behind, but it can be found at www.bobbodas.com. Bob misses his good buddy Stephen St.Croix.

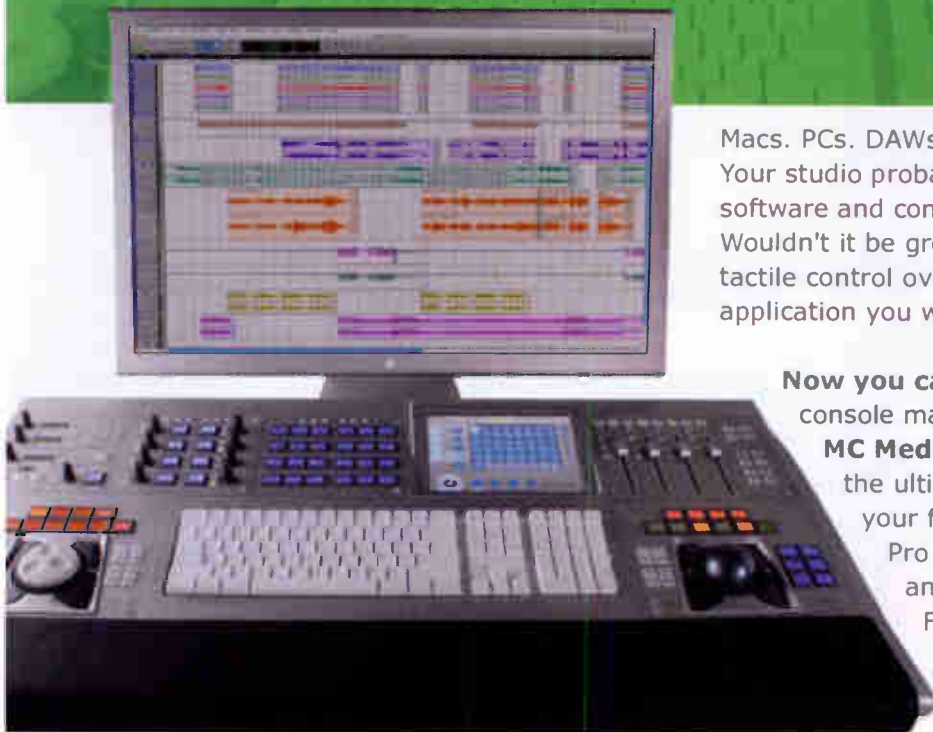
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PHOTO: PETER FIGEN

ON THE COVER

EARGASM STUDIOS

Eargasm is the music-recording wing of John Chominsky's audio business, situated in the same office complex that houses Atlantis Group post-production. When Chominsky leased space for Atlantis six years ago, in a prime location one block from Santa Monica's tony 3rd Street Promenade, he grabbed some extra square footage for a music studio, to be built once Atlantis (designed by Carl Yanchar of Wavespace) was going strong. When Chominsky took bids for the music room, he says, "Everyone said it would take six months to build. Because we would build our new room right next to Atlantis, we couldn't afford to close for six months; nor could we afford sawdust, drills and hammers." Chominsky found a solution with Lawrence P. Swist Designs firm, which also encompasses a manufacturing wing, Evenfall Acoustics. Larry Swist's designs are custom built offsite and installed in a matter of weeks. "We manufactured all of the interior systems, including panels, diffusers, soffits and clouds, and coupled them to a metal isolation enclosure that was erected on a floating floor. It took ten days to install the isolation enclosure, five days for the interiors."

Equipment at Eargasm includes a Digidesign ICON console—one of the first in L.A.—and a Pro Tools HD3 system rife with plug-ins. Engineers can also create analog submixes via API mixers, and monitor through Yamahas or Genelecs. Since the studio opened in March 2005, music clients have included Kathy Valentine (of the Go-Go's) and Doug Fieger (The Knack) and video games such as *Saints Row*. Though the facility is growing, Chominsky and his core staff, Sean Graham and Jaimie Siedow, work in the same way they have for six years. "We all wear multiple hats," Chominsky says. "This is a small shop where everyone knows how what they do will affect the next step."

TIMBALAND

Top engineer Jimmy Douglass' room at Timbaland Studios (Virginia Beach, Va.) is in a radically remodeled warehouse space owned by Tim Mosley and designed by the Walters-Storyk Design Group. The existing ceiling was removed to take the room height up to the ceiling of the building's second floor in the live room, which also includes three iso booths. The facility's main control room is built around a Neve VR Series console, a Yamaha DM2000 and custom Augspurger speakers. A second Pro Tools, 5.1 surround, MIDI mixing room (with its own iso booth) and first- and second-floor lounges are also available.

PHOTO: COLLEEN SPENCER



CLASS

2006

The Year's Coolest New Rooms



PHOTO: MARK MARINO

CLOUD 9 RECORDING

This music-recording studio in Long Island, N.Y., reopened in 2005 after a major overhaul designed and implemented by studio owners Joe and Jack Napoli, and their father, Joseph Napoli. The refurbished Cloud 9 control room is naturally illuminated by skylights. Control room and live room feature a floating nonparallel design, which incorporates omni- and bidirectional diffusion. Gear includes an Oram BEQ Series 24 inline console, which was custom modified by Andrew Roberts of Purple Audio. A custom Audio Excessories TT patchbay was built for the facility by Matt Marinelli of Coral Sound. Monitoring is via Genelec 1037A mains and Yamaha NS10 and Quedest VS2205 near-fields, and the studio offers a nice collection of vintage mics and outboard gear, and vintage guitars, amps and drums.



PHOTO: MICHEL DUBREUIL

STUDIO C AT STUDIOS PICCOLO

Studio C at Studios Piccolo (Montreal, Quebec, Canada) was redesigned and reopened in June of last year. The room is part of a five-studio complex that also includes a Neve music-recording studio (A), a 5.1 mix room (B), two smaller project rooms and a mobile rig. The C space was divided to include an iso booth, and the refurbished control room features an SSL AWS 900, installed in the center of a wrap-around workstation. This ergonomic design also includes Dynaudio BM15A main monitors, Pro Tools HD3 and a long list of plug-ins. Studio C was designed by owners Denis Savage and Dominique Messier, with Resonance Inc.

STUDIO B AT STUDIO 880

Green Day, frequent clients of John Lucasey's Studio 880 (Oakland, Calif.), have claimed their own room at the facility. The Grammy-winning punk band arranged for the Walters-Storky Design Group to redesign and refurbish 880's formerly unfinished Studio B, which comprises a 600-square-foot control room, 800-square-foot live room and two iso booths. John Storky's design, completed last April, includes a suspended architectural cloud that absorbs low end and reflects mid- to high frequencies. Other acoustical elements include a series of black, gray and natural-wood panels, and a custom wood, rear-wall, full-frequency Diffractal diffuser. Studio B is equipped with an SSL 9064J console and a Pro Tools HD rig with Apogee converters. Monitoring is via Genelec 1038A, Yamaha NS10 and Dynaudio BM15 speakers. The facility also offers a collection of microphones from Sennheiser, Neumann, Telefunken and others.

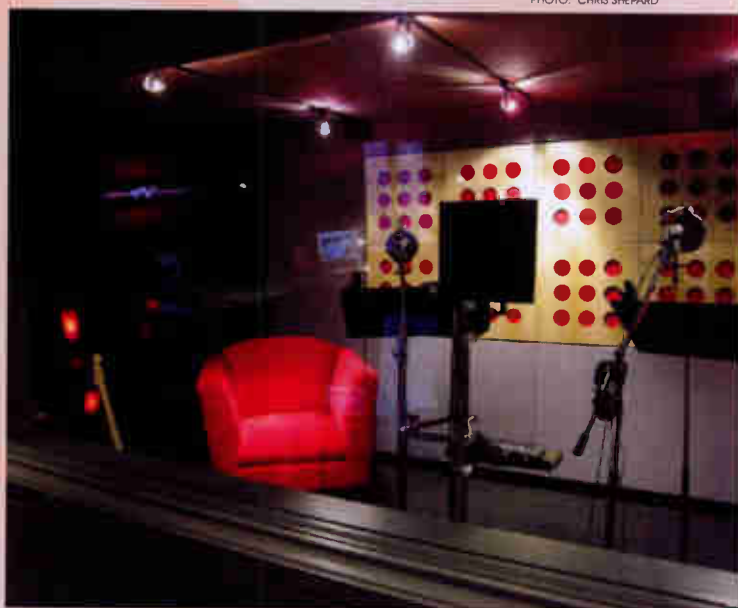
PHOTO: CHRIS DUGAN



CHICAGO RECORDING COMPANY • SECRET FREQUENCY

Sound designer Jeffrey Van Steen, formerly a staffer at CRC, worked with engineers at the venerable Chicago facility to create a new studio on West Wacker Drive: Chicago Recording Company • Secret Frequency, which opened in October 2005. Van Steen designed the rooms with architect/acoustical designers Klaus Koch and Cleon Wells to provide sound design, original music composition, audio post and 5.1 surround mixing services. It's a unique arrangement wherein Steen provides creative services and CRC does all the post-production. Featured equipment includes Pro Tools HD2 Accel, Dynaudio 5.1 monitoring and Apple Logic Pro.

PHOTO: CHRIS SHEPARD



CLASS 2006

MARK MORGAN STUDIO

Film/TV music composer Mark Morgan's new personal studio (Malibu, Calif.) is part of his newly built home overlooking the Pacific coastline. To compensate for a sideways-sloping roof in this writing/mixing room, design firm studio bau: ton called for a floating ceiling to be installed over the custom workstation. That ceiling, and most walls, are covered with charcoal-colored BAFP cotton batts, with painted wood strips in between. Equipment includes a Yamaha 02R console and Genelec 1031A main monitors. The studio pictured, which opened in February 2006, is phase one; a tracking room, separated from the mix room by a glass wall, is planned.

PHOTO: PETER GRUENEISEN



PHOTO: FRANCIS MANZELLA

UNIVERSAL MASTERING

When the Universal Music Group needed to replace its Edison, N.J., mastering studios, Francis Manzella's FM Design firm was hired to design three new studios, a central machine room and production spaces. The newly built mixing/mastering suite is a 5.1 multipurpose facility with floating room shells and

deep trapping for extended and smooth low-frequency response. RPG Diffusors are installed on front and rear walls, covering all five monitor positions. The new studios (B, C and D) are located in New York City and were completed last December. Each mastering room features a Pro Tools HD system with ProControl worksurface, and PMC surround monitoring with a Griffin LFE 15-inch subwoofer and Dangerous Music ST/SR monitor section.



NEW ENGLAND INSTITUTE OF ART

This is the new 5.1 high-definition digital audio facility at the New England Institute of Art. Open in April of 2005, the studio is used by advanced students in the college's Audio & Media Technology Bachelor of Arts program. Bill Crabtree and department faculty designed the studio, which is equipped for video post, mastering and surround mixing. Central to the studio are a Yamaha DM2000 housed in a custom console frame by Sound Construction & Supply, and 32 channels of Pro Tools HD3. There is Quessted surround main monitoring, and a selection of outboard gear from TC Electronic, SSL (XL Logic surround compressor), Vintech and Summit.

PHOTO: ADAM GOODER



PHOTO: GARY NELTON

DIGITAL ONE

Studio Pacifica designed three surround mix rooms within a new 8,000-square-foot audio/video post facility for Digital One (Portland, Ore.). Built into a 1960s structure, the studio design celebrates the mid-century modern architectural style with floor-to-ceiling windows, multiple lounges, hip working offices for clients and *shag* carpeting. The three surround mix rooms are identically equipped with Pro Tools HD, Yamaha 02Rs and KRK 7000B monitoring. The project is a joint venture with multiroom video post house Mission Control.

MASTERSUITE

Mastering engineer Jay Frigoletto relocated from L.A. to Brookline, N.H., a year and a half ago and completed his new studio, Mastersuite, in January 2006. The facility was designed by its owner and built by Ben Chandler of Studio Metronome in a new building at the Metronome Arts Complex. A large window at the rear of the studio provides vistas of the 100-acre hilltop property. Frigoletto uses a Sonic HD system, Lavry converters, Millennia, Pultec and Manley EQ, Manley and Chandler compression, and digital processing from Weiss, Sintefex, Massenburg and TC Electronic. Projects at the new studio have included releases from Oasis, Shinedown and Clutch, among others.

PHOTO: BARRY IOMMEL



PHOTO: RUSS BERGER

LAKWOOD CHURCH MEDIA SUITE

The Russ Berger Design Group designed media rooms to provide broadcast audio for the 16,000-seat Lakewood Church in Houston, Texas. The 27,000-square-foot suite, which opened in July of last year, is on the top floor of a five-story building

PHOTO: AMANDA STRONG

adjacent to the church and includes video and audio production control rooms, recording and post-production studios, editing and graphics rooms and a central machine room. The studio pictured features a Euphonix System 5 post-production console and an E-mu PARIS mixer, Genelec 1037C and 1031A monitors and a wide array of outboard processing.

DNA STUDIOS

Pilchner Schoustal International designed this music recording and production studio in Woodbridge, Ontario, Canada, for brothers Chris and David Tedesco, who are studio builders as well as artist/engineers. The facility was conceived as a private project studio, but the owners soon let that notion go, as they found themselves hosting sessions with singer/songwriter Ron Sexsmith, producer David Bottrill and many others. The 29x22-foot live room features variable acoustics, plus a built-in P.A., turn-of-the-century piano and adjustable mood lighting. The control room is built around an SSL G Series console and custom Pilchner Schoustal MAXelle monitors.



JAMES NEWTON HOWARD'S STUDIO B

Another high-end composer's room from designer firm studio bau:ton, James Newton Howard's Studio B features a frosted-glass window that lets in plenty of light, and side-wall perforated Topperfo cherry wood panels. A custom workstation desk allows for the master keyboard and the Digidesign ICON D-Command mixer to be switched out, depending on whether Howard is busy composing music, or recording or mixing the score to films like *King Kong*. Howard also uses a G5 running Pro Tools HD, and Quedsted 2108 surround monitors powered by Bryston amps.

PHOTO: EDWARD COLVER



PHOTO: EDWARD COLVER

GEOFF ZANELLI'S PRODUCTION ROOM AT REMOTE CONTROL STUDIOS

Studio bau:ton designed this personal studio for film composer Geoff Zanelli within Oscar winner Hans Zimmer's Remote Control Studios (Santa Monica, Calif.). Zanelli's main production system is a G5 running Logic Audio Platinum; he also uses a G4 with Pro Tools for mixing, video playback and hard disk recording. Monitoring is via a Quedsted 5.1 system with an Event subwoofer. Also of note: a Doepfer keyboard built into the desk by Bob Merritt, and a great guitar collection (Les Paul, "bastardized" Strat, Everett steel string, Aria nylon string).

CLASS 2006



PHOTO: JIM FORRESTAL

E LABS MULTIMEDIA

In June 2005, E Labs Multimedia (Madison, Wis.) opened in the space formerly occupied by Effigy Studios. This 3,000-square-foot facility is divided into two studios; pictured is the control room of Studio A, which also comprises a large live room and three iso booths. E Labs was designed by Jack LeTourneau (the studio's chief engineer) and Jerry Neviasser. New equipment includes the Digidesign Control 24 mixing console with 16 channels of Focusrite microphone pre's. The studio continues to employ Effigy's JBL LSR6328 surround monitoring with LSR6312 subwoofer. One of the reopened studio's first projects was "Timespace, the Infinite Adventure," a presentation of Chicago's Adler Planetarium.



PHOTO: CHUCK BROOK

R!OT ATLANTA

Pictured is one of three new 5.1-capable suites opened at R!OT Atlanta in May 2005 and designed by Bret Thoeny of BOTO Design with acoustical engineering from Marshall Long Acoustics. Construction of the new studios was phased so that the new studios could be gradually installed while work continued in the facility's existing rooms. Major equipment includes a Fairlight DREAM Constellation, ADAM 5.1 monitoring, and a wide range of outboard gear from Empirical Labs, Great River, Avalon, Lexicon, Eventide and Kurzweil. R!OT Atlanta is a full-service audio facility, providing sound design, stereo and surround mixing, music and voice-over recording, ADR and electronic spot delivery.



PHOTO: COURTNEY SPENCER

REDEMPTION STUDIOS, CLIFTON, N.J.

Redemption Studios owner Mike Pilken says that his original concept for the facility, which opened in May of 2005, was for a small studio that would cater to local music-recording clients. But that vision grew considerably during the design process with the Walters-Storyk Design Group. The finished facility includes two studios; control room A centers around a Neve VR60 console and Genelec main monitors, and the attached large, live room (pictured) and drum booth feature Custom RPG diffusers. Studio B is a Pro Tools HD3/Genelec room. Redemption also offers a nice mic collection, including Neumann U87 and matched pairs of TLM 103 and SKM 184s, a wide range of outboard gear and a seven-piece TAYE Studio maple drum kit.



PHOTO: LARRY SWIST

RIGHT TRACK/SOUND ON SOUND D1 PRODUCTION ROOM

The merging of Right Track with Sound on Sound (New York City) was one of the biggest audio news stories of 2005. Larry Swist redesigned the newly formed Right Track/Sound on Sound's facility on West 38th Street in Manhattan for a December 2005 grand reopening. The studio was gutted and rebuilt as a Pro Tools HD4 Accel Room with Tannoy System 1200 main monitors and Tannoy PS350 subwoofer. Designed to be used for music production and overdubbing, the new Right Track/Sound on Sound Studio D1 has already hosted sessions with Mariah Carey, Maurice White, Nas and more.

For more studios that earned honorable mentions in the Class of 2006, visit www.mixonline.com and click



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THE OTHER CLASS OF 2006

New Venues Sprout Up on the Live Scene

By Sarah Benzuly

Just in time for the jam-packed summer touring season are numerous completely redesigned or new venues that will host both up-and-coming and international superstars on their stages. And these new venues' owners are putting top-of-the-line pro audio equipment at the top of their "install" list, as they know high-end gear helps attract key talent that will bring music lovers coming back for more shows. From your local club to renowned auditoriums, *Mix* takes you behind the stage (and FOH) to find out what these new venues are offering.

ELYSIUM LOUNGE

Making headlines when it hosted P. Diddy's recent party during the Super Bowl, De-

troit's Elysium Lounge (www.elysium-lounge.com), a retrofitted bank, now hosts top parties and DJs with a top-of-the-line sound system provided by Advanced Lighting & Sound. The main dancefloor features all JBL speakers: AM6340 95 three-way bi-amped enclosures, ASB 6128-6118 subs and AM4200/95. Amps and speaker processing is via BSS Audio's sw9088iis Soundweb Speaker Management and sw9008iis Output Expander, as well as a dbx DriveRack. Power is via Crown I-Tech amps. The DJ booth hosts an Allen & Heath Xone:464 DJ mixer, Technics turntables, and Sennheiser EW-135 wireless handheld mic and HD280 PRO headphones. Larry Jones of Advanced Lighting & Sound went to great lengths to ensure that the speakers would not disrupt the décor of the lounge, hanging them behind painted grilles so that they are not visible to the average patron. Additionally, an intricate acoustical treatment system was installed to help tame the sound in the cavernous space.

ELEMENT

At the crossroads of the East Village and the Lower East Side (next door to the Mercury Lounge) in New York City sits a new dance music venue and lounge, element (www.elementny.com). The building has seen many incarnations: a former bank, Jasper Johns' studio in the late '70s and numerous other clubs



The dancefloor is packed at New York City's new element club.

in the past three decades. The original architecture of the bank remains intact, but after a major overhaul, the 10,000-square-foot tri-level venue features elegant décor with textured woods (bark, zebra accents), jagged slate, copper and paper. The 305-capacity main room features a 40x60-foot oak hardwood dancefloor, and is powered by a 37,000-watt EAW Avalon Series sound system that is controlled throughout multiple zones inside the club via a wireless Crestron panel, which allows for real-time, in-zone, tuning. Amplification is via QSC CX302/902/1102/254 amps. The DJ booth features an Allen & Heath Xone:464 mixer, with Technics and Pioneer turntables, and Shure handheld mic system and belt-pack transmitter.

According to element's technical director, Artur Lewicki, "Tuning the system has been a long, painstaking process. Three of the four mains, which are flown around the perimeter of the space, had to be moved several times to find the perfect placement to best cover the unique shape of the dancefloor. We would make an adjustment, then let the system

run for a couple weeks and listen to it during the various parties. It takes a long time for a system to really settle in and to learn how the sound is going to act within such a complex space. Two weeks ago, we thought we were 99 percent there and then we had a Tsunami party—hardcore trance with live vocals and electronic accompaniment—with a filled dancefloor. Wow, was that a different beast. We are still happy with the speaker placement, but we will be visiting the processors before the next one of these events.

"The subs were originally built as an array—stacked two wide and three high—to increase the throw, which actually did work when there were a comfortable amount of people on the floor," he continues. "The problem we found was that once you hit a certain density on the dancefloor, it wasn't penetrating. You could hear the rumble on the other side of the floor, but you couldn't feel the punch. We split up the array into three stacks of two and placed them around the perimeter. Now it



The Elysium Lounge hosted P. Diddy's Super Bowl party.



The Shrine Auditorium's \$15 million upgrade includes a new audio and production system.

feels like the bass is coming from inside your body."

SHRINE AUDITORIUM

No stranger to large events, Los Angeles' Shrine Auditorium recently underwent a \$15 million renovation, maintaining the theater's classic architecture while adding a state-of-the-art audio and production system. According to Shrine general manager Duke Collister, because the Shrine is a wide room with a stage measuring 105 feet at the proscenium, and the throw to the rear seats is 209 feet, he spec'd a Meyer Sound MICA and M1D. Collister worked with audio consultants Jack Haffamier (Complete Production Rentals) and Joe Hesse (MSS Audio Services) to configure a system that shows two arrays of 16 MICA cabs angled inward slightly from the sides of the proscenium, augmented by a pair of center arrays of 10 M1Ds each (eight mounted under the stage lip for frontfill and 18 more under the balcony). Other Meyer gear installed includes eight 700-HP

subs for LF and two Galileo loudspeaker management systems for processing and drive.

According to Haffamier, "A lot of the awards shows built out almost 20 feet in front of the proscenium. That calls for a much different configuration than a rock show. We can switch from 16 MICAs per side to nine per side with three delays to cover the upper balcony."

TOOTSIE'S

Since 1920, Nashville-based Tootsie's has been a barometer of sorts for country music artists: If you get your snapshot on Tootsie's Wall of Fame, success may soon follow, as has been seen with such musicians as Kris Kristofferson, Hank Cochran, Mel Tillis, Roger Miller, Waylon Jennings and Patsy Cline. Chart-bound musicians heading to Music City will find a new system at Tootsie's, which is based on gear from Peavey and Crest Audio; Peavey is no stranger to Tootsie's, as front-of-house engineer Bobby Phillips can point to a rack containing CS 800/1000 amps driving Peavey



Renovations to the King Center for the Performing Arts were designed to improve acoustics and sightlines to the stage.

Black Widow 18-inch subs from the 1970s.

The new system comprises a 24-channel Crest Audio HP-Eight mixing console, which Phillips can use for both mains and monitors. "I'm running five monitor mixes—one set of in-ears and four wedges—and I typically run 16 to 20 channels, depending on the size of the act." Ten Peavey GPS (Global Power Series) amps deliver the signal to two sets of QW loudspeakers and monitors. At stage right and left, a GPS 900 powers the high end of a QW 1, while a GPS 2600 powers the mids. Other models include GPS 3500 amps, QW 215/218 subs and QW ML/MR monitors.



technical supervisor and head of audio, Rance Caldwell, worked with ASR ProEvents (Longwood, Fla.) audio consulting firm to bring in a JBL VerTec line array (16 VT4888s, six VT4880s) to the 2,000-seat performance space. "The VT4888s are really conducive to the space, and the mid- to high frequencies are very smooth," Caldwell says. "We were able to hang them a little bit higher and aim them down to get the exact coverage we needed."

KING CENTER FOR THE PERFORMING ARTS

Rebuilt with acoustics in mind, a \$1.3 million renovation at the King Center for the Performing Arts (Melbourne, Fla.; www.kingcenter.com) focuses on creating a space that is more conducive to live performances, which includes improved acoustics and sightlines. King Center's

The renovation also included major changes to the ceiling structure that will improve viewing capabilities for the patrons seated in the Grand Tier, as well as remodeling the artists' dressing room areas and an artist entrance. Since reopening, the center has hosted Vince Gill, the Moody Blues, Loggins & Messina and Clay Aiken. ■



Tootsie's in Nashville has a long history and a new sound system.

Acoustic Treatment for All



The London Series from Primacoustic is a complete treatment package.

By Matt Gallagher

A WEALTH OF OPTIONS FOR OPTIMIZING YOUR STUDIO'S SOUND

Just like life itself, audio production is grounded in balance. Great mixes translate the same sonic balance to any playback system. But in this brave new era of home recording, a lot can go wrong. Trustworthy near-field monitors and sharp ears can only do so much; an accurate room response is equally critical.

Controlling your studio's acoustics involves realizing an optimal balance of absorption, diffusion, isolation and reflection. It's difficult to achieve an optimal room response using a single method of treatment, and each space requires customized solutions.

Luckily, with the explosion of producer-owned facilities and other high-end "home" studios, manufacturers have responded with a wider variety of acoustic treatment options than ever before, with options ranging from all-in-one DIY treatment packages to new lines created in partnership with top studio designers.

If you're currently designing and building a studio, or if you're planning to upgrade an existing room, the guide below presents a sampling of currently available surface treatment products, highlighting the newest offerings. For more complete information on product options—as well as for expert, practical advice on acoustic treatment—visit the manufacturers' Websites.

FOAM

Acoustic foam, although not designed for soundproofing, can resolve a number of issues. Foam attenuates specific mid- to high frequencies, and

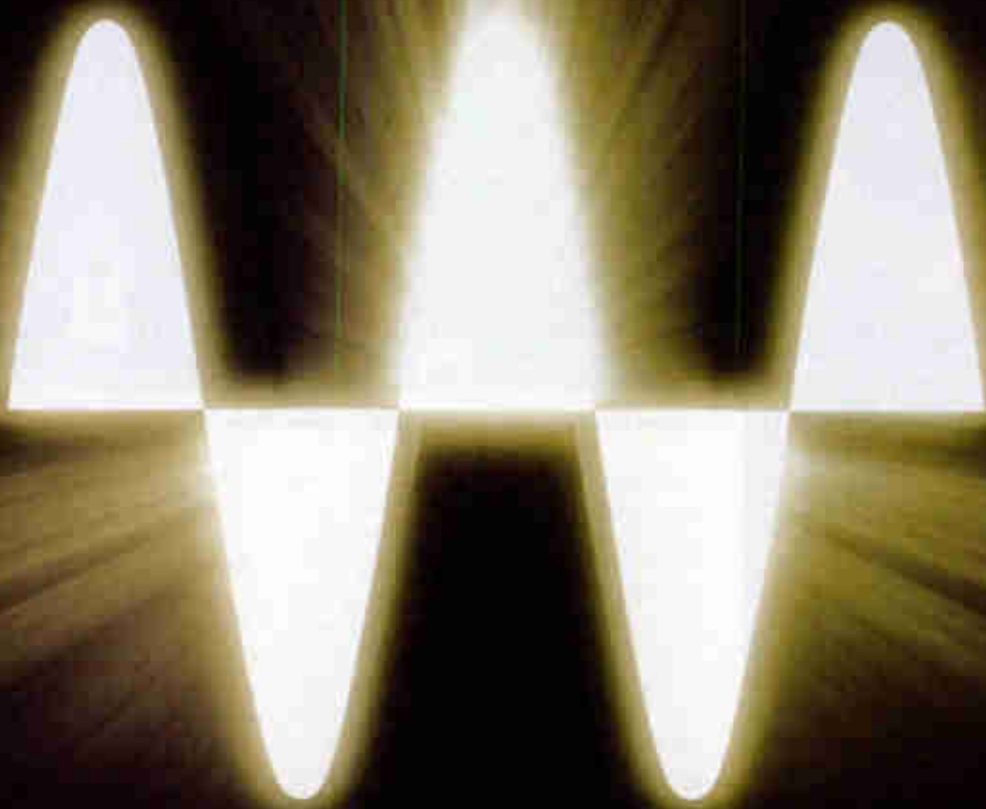
minimizes reverberation and early reflections. Foam is available in a variety of dimensions, surface patterns, compositions and colors.

Illbruck Acoustic (www.illbruck-acoustic.com) SONEX panels are designed to reduce reverberation and standing waves by absorbing sound evenly over a broad range of frequencies. SONEX panels can be affixed to walls, partitions or ceilings using acoustic adhesive. Individual panels are available in dimensions of 24x24 or 24x48 inches, and vary from one to six inches thick. Illbruck also offers FABRITEC fabric-wrapped wall panels, which are available in dimensions of 24x24 or 24x48 inches at one or 1.5 inches thick.

Markertek (www.markertek.com) is a manufacturer and developer of an extensive range of pro audio products, including MarkerFoam acoustic-treatment products. The company's Bass Trap Low Frequency Acoustic bass trap comprises acoustic foam diffuser blades that measure 23.5x11 inches, are cut in a triangular profile, and mount on walls and room corners. Blade Tiles offer sound absorption and measure 16x16 inches each. They can be installed with adhesives, Velcro or double-sided tape and are suited for studios, rehearsal spaces, auditoriums or industrial use.

Silent Source's (www.silentsource.com) Hush-Foam line includes anechoic wedge-design panels

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Michael Beinhorn

(Producer - Soundgarden, Marilyn Manson, Red Hot Chili Peppers, Ozzy Osbourne)



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Auralex Acoustics' AudioTile is available in various shapes.

offered in 24x48-inch sheets that are one, one-and-a-half, two, three and four inches thick; pyramid designs, sold in 24x24-inch sheets that are two, three and four inches in thickness; and Max Wedges, which come in 12x12-inch sheets and are six and eight inches thick. Silent Source's FireFlex panels are available in the same depths and made of a special, open-cell, lightweight acoustic melamine material for high-temperature applications or buildings that require Class-1 rated materials. FireFlex panels are likewise available in anechoic wedge, pyramid and Max Wedge configurations and as 6x12x12-inch units.

PANELS

Acoustic panels provide diffusion and/or absorption, taming reflective surfaces by reflecting sound at different angles, and eliminating standing waves and flutter echo while keeping sonic energy intact. Diffusers are constructed of a range of materials, such as Fiberglas and wood, and are wrapped in fabric. They are available in a large variety of sizes and densities.

The Acoustics First (www.acousticsfirst.com) QuadraPyramid is a variation on the traditional, offset pyramid-shaped diffuser. The QuadraPyramid is optimized for use in recording and broadcast studios, theater and performance venues, and houses of worship. Four pyramids create 16 angles of reflection on the surface of a single 2x4-foot panel that is 2.75 inches thick. It generates a uniform polar response over a broad frequency range and can be mounted directly on walls or ceiling, or dropped onto a T-bar grid.

Auralex Acoustics (www.auralex.com) has recently introduced three new wall-panel

offerings that comprise the company's pArt-Science product line, which features designs that were conceived by studio designer Russ Berger specifically for Auralex.

AudioTile is a series of tessellated panels designed with varying thicknesses for broad-band absorption, blending in diffusion and reflection for an optimum acoustical balance. AudioTiles come in four different shapes that combine for an aesthetically pleasing appearance tailored for the desired acoustical performance.

SpaceArray diffusers are 24x24 inches each and combine hemispherical acoustical diffusion with solid-wood panels made of Paulownia wood (which is used in musical instrument construction).

The SpaceCoupler, which also comes in 24x24-inch solid-wood panels, is intended for creating a big sound in a small room. By providing an acoustical boundary interaction between loosely coupled spaces, the SpaceCoupler generates a low-level reverberant tail to create a full, well-developed sound even in small spaces.

ClearSonic's (www.clearsonic.com) S2 SORBER panel is a 22x24-inch section of 1.5-inch thick, compressed Fiberglas that can be used as a wall treatment for studios, basements, church sanctuaries and more. SORBER products can be attached to a variety of surfaces using standard wall screws and fasteners, or, in some cases, Velcro.

ESR (www.zainea.com) in Athens, Greece, offers the Roundfusor1 (or R1) for diffusing middle and high frequencies and absorbing frequencies below 250 Hz. Each panel comprises three 3-D shapes and a fourth diffuser, and slides into two wooden rails that are mounted on a wall or ceiling surface.

Golden Acoustics (www.goldenacoustics.com) Sonic Equalizer Panels are designed to equalize the sonic energy in any space, as well as absorb unwanted frequencies. The idea is that equalized sound will be uniformly distributed throughout the room, and it isn't necessary to treat entire walls and ceilings to achieve the desired results. Panels are mathematically designed with varying conical shapes made of polymerized gypsum.

Lay-In Equalizer Squares diffusers are designed to diffuse sound from multiple sources and directions. They focus on mid-to high frequencies and install in existing grid systems, or mount directly to the wall. Equalizer 9 Full Panels are nine inches deep and can be applied to ceilings or walls. They are designed to diffuse sonic energy in the high, middle and low ranges (down to 70 Hz) and attenuate room peaks to create a more even, comfortable listening environment. All of Golden Acoustics' panels may be customized.

Intelligent Acoustics (www.iacoustics.com) offers I-Panel fabric-wrapped Fiberglass acoustical panels for control of mid- and high-frequency sound reflections. The company manufactures I-Panels with the Guilford FR701 fabric of the user's choice, and can manufacture them with straight, mitered or beveled edges. I-Panels can be mounted with Velcro or Z-clips. I-Panels are available in six size configurations: the IP221 (2x2 feet at 1 inch thick), IP222 (2x2 feet at 2 inches thick), IP241 (2x4 feet at 1 inch thick), IP242 (2x4 feet at 2 inches thick), IP481 (4x8 feet at 1 inch thick) and IP482 (4x8 feet at 2 inches thick).

MSRs (www.studio-panel.com) SalonAcoustics line of decorative absorption panels are engineered to offer a high degree of absorption down to 500 Hz. They feature stock artwork, or custom artwork is available upon request. The panels are two inches deep, and standard sizes are 16x24 inches, 22x28 inches and 24x36 inches. CloudPanel units for ceilings measure 2x4 feet and have a uniform 1-inch thickness. They include built-in cable hoops on back that allow them to be suspended from the ceiling.

Primacoustic's (www.primacoustic.com) Broadway series panels represent a non-petroleum alternative to open-cell foam. Panels are made of a durable fabric-covered, high-density encapsulated Fiberglass with hardened edges. The Broadway product line is available in square or beveled edges and comprises 12x12-inch Scatter Blocks, 24x24-inch Control Cubes, 12x48-inch Control Columns and 24x48-inch Broadband Panels.

Silent Source's (www.silentsource.com)

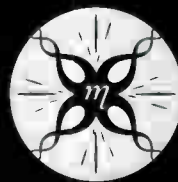


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Skyline LP is a diffuser with a high-density, flame-retardant polystyrene core that is four inches deep and tailored for low-frequency absorption in smaller project studios. Acousticore fabric-wrapped panels are composed of high-density mineral fiberboard and can be mounted on walls and ceilings and are available in any size up to 4x10 feet.

In addition to designing and manufacturing acoustic-treatment solutions, Steven Klein's Sound Control Room (www.soundcontrolroom.com) also provides consultation, construction and installation services. Its 2x4-foot Quadratic Residue Diffusor is constructed of medium-density fiberboard and designed to diffuse low frequencies. It also offers Class-1 fire-rated fabric-wrapped panels that measure 2x4 feet and are one inch thick. Guilford FR701 fabric is stretched over the face of these panels and affixed to the back of the metal edging.

ISOLATION PRODUCTS

Baffles, bass traps, pads, gobos ("go-betweens") and wedges are versatile and portable options for providing a combination of absorption and diffusion, minimizing reverberation and controlling leakage between instruments.

Acoustic Sciences Corporation (www.acousticsscience.com) manufactures a cylindrical shaped gobo with a tripod base called the StudioTrap. The StudioTrap absorbs bass frequencies on one side and reflects treble frequencies on the other side. Its flexible, modular design allows it to be arranged in a variety of applications and configurations, such as the company's trademarked Quick Sound Field (QSF) acoustic environment that surrounds a microphone, or as an Attack Wall in combination with Acoustic Sciences' MonitorTraps. Each unit measures nine inches in diameter by 49 inches long and can extend from a height of 54 inches to 74 inches.

Bag End Loudspeakers (www.bagend.com), a manufacturer of speaker systems,

entered the acoustic-treatment market with its new E-Trap, a tunable electronic bass trap that is scheduled to go into production in June. E-Trap is a closed-loop, controlled acoustic dampening system that adds acoustic damping to low-frequency standing waves. The E-Trap measures 13x18x10 inches (WxHxD).

MSR (www.msr-inc.com) developed the StudioPanel SpringTrap to complement its mid- and high-frequency absorbers and describes the SpringTrap as a "true" bass trap that works on frequencies between 30 and 100 Hz. The SpringTrap is a precision spring-loaded triple cavity resonator.

MSR's IsoPanel absorber is a gobo that provides mid-frequency isolation in the 35dB range and is optimized to provide sound isolation in an easily movable partition. IsoPanels can be used in tracking sessions with multiple instruments as well as in orchestra pits. Sizes are 3x3, 4x3, 4x4, 4x5, 4x6 and 4x8 feet. The RollaPanel is a portable absorption panel equipped with sturdy wheels and bases for spaces that need flexible acoustical properties; it is designed for lowering reverberation time in spaces where permanent acoustic treatments are impractical. Sizes are 4x4, 4x6 and 4x8 feet. IsoPanels and RollaPanels are available in six stock fabrics with an additional 42 fabrics available for a minimal additional cost.

Primacoustic (www.primacoustic.com) offers its Freeport series of portable gobos: the Freeport XT, made of 3-inch thick Primafoam Z-Foam high-density open-cell acoustical foam for maximum absorption in the mid and upper bands; the Freeport SD, made of 2.75-inch thick Primafoam Wedge tiles; and Freeport GT, also made with Primafoam that is mounted on a solid PVC frame.

The company's IsoWedge is a monitor speaker isolation kit comprising four pieces of high-density, low compression foam, each of which measures 12.8x4x2 inches. The IsoPlane is a multipurpose acoustic isolation kit for use with monitor speakers, turntables, CD player/burners and other devices. Each kit contains four pieces of high-density, low-compression foam that measure 12.8x4x1.5 inches. IsoPlane pads are placed under the device that you want to acoustically isolate or provide vibration protection for. Sold in master packs of four and 10 kits.

Besides manufacturing and selling acoustic treatment products, RealTraps (www.realtraps.com) also offers technical information about small-room acoustics and treatment on its Website. Its products are real membrane bass traps that also absorb mid- and high



Acoustic Sciences StudioTraps

frequencies. RealTraps are made with rigid Fiberglas and metal, are Class-A fire-rated, and mount with one or two hooks. They can be placed flat on walls, or they can straddle corners or mount on inexpensive microphone stands for portability. Its Mini-Traps measure 2x4 feet, are 3.25 inches thick, weigh 18 pounds and are designed to absorb low frequencies. The company states that the newer MondoTraps absorb twice as much as MiniTraps below 100 Hz. They are 2x4 feet wide, nine inches tall and four inches thick, and weigh 28 pounds. SoffitTraps absorb frequencies below 200 Hz and are designed to mount high up in ceiling corners and look like a built-in soffit. They are 12.5x16.25 inches by 4 feet long and weigh 8 pounds.

Steven Klein's Sound Control Room (www.soundcontrolroom.com) offers the Oak Trim Gobo, a freestanding device that can be used to separate players in a room and for room tuning. Because of this product's depth and ability to be moved away from walls, the company states that it creates a very efficient absorber for lower frequencies.

Taytrix Productions (www.taytrix.com) manufactures the modular, lightweight StackIt gobo system. Panels are available in three types (Plexiglas, fabric and a combination of fabric on one side, and birch/maple plywood on the other) and two sizes (30 and 15 inches). Their rounded edges allow for flexibility in angling the gobos, and they're available in full or half sizes so that they can be stacked to the desired height.

COMPLETE TREATMENT KITS

Some acoustic materials manufacturers have responded to the proliferation of personal and project studios (and new recordists) in recent years by creating complete, all-in-one packages that take the guesswork out of treating sonic deficiencies. Studio kits are available at increasingly affordable prices, and some new products debuted this year.

Acoustical Solutions (www.acoustical-solutions.com) and RPG Diffusor Systems (www.rpginc.com/proaudio) teamed up to offer a series of studio-in-a-box packages. Each includes image tools for controlling comb filtering arising from strong reflections; spatial tools for increasing the diffusion in small rooms; and bass tools for minimizing low-frequency room modes and speaker boundary-interference distortion. These foam packages include four levels of performance (bronze, silver, gold and platinum) designed to fit various budgets. Each level is available in two grades of foam, for home and commercial studios. Standard packages are designed for studios that measure up to



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14x10x8 feet (WxHxD); additional products are available for larger spaces.

Auralex Acoustics (www.auralex.com) offers a range of prepackaged acoustical control kits for rooms measuring from 6x4 feet up to 20x20 feet with its Designer Series and Performance Series Roominators systems. Each kit comprises different combinations of Auralex's Studiofoam absorbers and LENRD bass traps.

Markertek (www.markertek.com) packages a MarkerFoam Studio Kit, which includes 24 2-inch blade tiles, six Markertap corner bass traps, four tubes of specialty-foam adhesive and an application gun. The MarkerFoam Studio Kit provides optimal coverage for rooms that measure less than 100 square feet.



Acoustical Solutions and RPG Diffusor Systems studio-in-a-box

MSR's (www.studio-panel.com) Studio-Panel acoustical treatment kits are designed for most project-studio room sizes. The kits comprise wedge-shaped absorber and diffuser wall panels that measure 2x4 feet, are 1.5 to 3.5 inches thick and are designed to be placed side-by-side. Higher-end kits also include bass traps. Absorber panels have a mineral wool-clad core in a Fiberglas lining that's wrapped in a flame-retardant Guilford FR701 fabric, and are said to provide absorption down to 250 Hz. Diffuser panels are made from a low-resonance styrene wrapped in flame-retardant fabric and are said to provide even dispersion down to 500 Hz. MSR's Bazorber bass-trap panels are made of slotted low-resonance styrene with mineral wool fill wrapped in a flame retardant fabric. Bazorbers are designed to provide a Helmholtz-engineered absorption of sounds from 250 Hz down to 100 Hz.

StudioPanel kits come in small, medium and large configurations (the SP442, SP552 and SP664 models, respectively). At the 2006



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Winter NAMM show, MSR introduced two entry-level kits: the SP220, which includes two each of the company's absorber and diffuser panels, and the SP502, which includes five absorber panels and two Bazorber panels.

From its inception, Primacoustic (www.primacoustic.com) has designed and marketed modular panel systems for project studios. In 2004 the company redesigned its line of acoustic foam to enhance its "room-in-a-box" concept. Complete kits are offered for control rooms and studio environments. Primacoustic's Studio in a Box kits include the London Series (for control rooms and project studios), Montreal Series (for larger rooms), and New York Voice-Over Booths.

SPECIALIZED ACOUSTIC TREATMENT PRODUCTS

Finally, some acoustic-materials manufacturers offer products for specific applications that fall outside of the categories already covered here. Here are a few products for special, targeted applications.

Gretch-Ken Industries' (www.sound-suckers.com) Class-A fire-rated BS Barrier Curtain offers sound absorption and acts as a noise barrier. It can be used in acoustical curtain enclosures, as partitions or to line perimeter walls. It's made up of a non-reinforced, one-pound, PSF-loaded vinyl barrier sandwiched between two layers of vinyl-coated, Fiberglas, cloth-faced, quilted willtec foam absorbers. Curtain panels are constructed with grommets across the top and Velcro along the vertical edges. Rolls are 4 feet wide and 25 feet long, and they can be supplied with bound or unbound edges.

Intelligent Acoustics (www.iacoustics.com) addresses the often-overlooked need to isolate studio doors with its IDoor Wood Acoustic Doors, which are available in full glass, partial glass and no-glass versions. The IDoor's standard size is 3x7 feet, and custom sizes are available. Standard wood finishes are cherry and guatambu (light wood); other woods are available. The IDoor can be right- or left-swinging configurations, and comes with standard handle, saddle, perimeter and drop seals.

Steven Klein's Sound Control Room (www.soundcontrolroom.com) offers the Rubber Floor Decoupler, an inexpensive floor-floating device designed for easy application that will grip any 2x lumber. The product was designed with medium density for ideal vibration control. ■

Matt Gallagher is an assistant editor at Mix.



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Mick Guzauski

Ears of Gold and Grammys to Match

In the past 30 years, the fabric of radio play and record sales has been woven with hits from Mariah Carey, Eric Clapton, Josh Groban, Britney Spears, Kenny G., LeAnn Rimes, Brandy, Burt Bacharach, Toni Braxton, Marc Anthony, John Mellencamp and Michael McDonald. And if you followed the Gold and Platinum threads that lead from this A-list of artists, they would invariably lead to Mick Guzauski. Probably the best-kept secret in music production, Guzauski's work spans a wide range of styles, including jazz, R&B, Latin, rock, pop and easy listening. And although his work has defined the word "hit" in the past four decades, he has only recently garnered Grammy

praise, first winning a Latin Grammy in 2002 for Thalía's *Armasando*, then four Latin Grammys in 2004 for Alejandro Sanz's *No Es lo Mismo* and, most recently, winning the award for Best Engineered Album, Non-Classical in 2006 for Clapton's *Back Home*.

Guzauski got his start in the '60s in his parents' basement in Rochester, N.Y., doing pickup engineer work with such talent as Steve Gadd and Tony Levin—then students at the Eastman School of Music—and Lou Gramm, another Rochester native who

was then playing in local bands and was soon to hit it big with Foreigner. Around that same time, Guzauski worked on the first recordings for Chuck Mangione—another Rochester native son who was soon to make his mark. Guzauski would continue to work on and off with Mangione throughout his career, eventually engineering

Mangione's breakout hit, *Feels So Good* (1977).

I had the good fortune of being Guzauski's assistant engineer on a number of projects from 1988 to 1992, so I was glad to catch up and learn how things have changed for him over the years. He spoke with me by telephone from his 1,400-square-foot studio in the basement of his home in Mt. Kisco, N.Y., about an hour north of New York City, where he has been making music for the past 12 years.

How has your career evolved along with the business in the past decade?

Starting in 1993, I was working mostly for Tommy Mot-



PHOTO: ELLEN GUZAUSKI

tola when he worked for Sony. In the '90s, the projects I did were mostly pop female ballads; now I'm getting to do a lot more rock and more variety. After [Mottola] left Sony, I became more of an independent guy. Since 2003, it's been the responsibility of my manager, Joe D'Ambrosio, or me for finding work. I've been taking more meetings and seeing what projects are available. It's not just me sitting down here and people telling me, "This is what you're going to do next week."

In the past few months, I mixed the Cream reunion album *Cream: Royal Albert Hall*, Eric Clapton's *Back Home*, a Universal artist named Res and a band called Hurt from Capitol. I still like doing the big ballad stuff, but variety keeps it interesting.

As far as the gear, I'd have to say that Pro Tools and other workstations have made the biggest change in the whole recording industry. Now tracks are recorded at home, and at the very least they do their overdubs at home.

With the shift more toward the home studio, are the tracks you're getting better or worse?

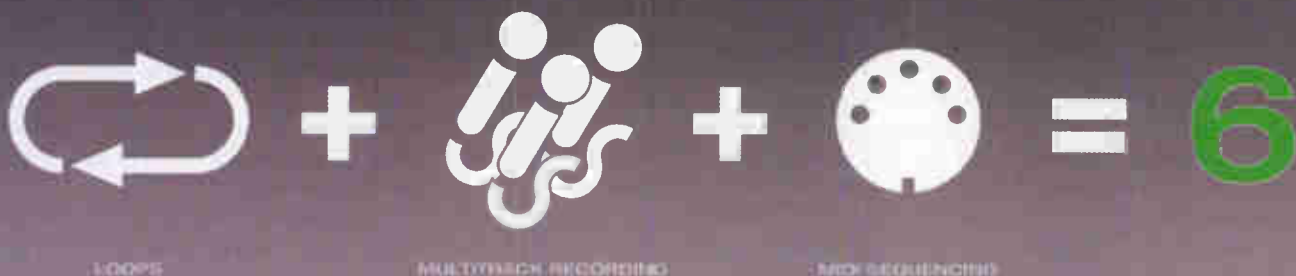
It is still variable. When it was on tape, there were some incredible tracks and there were tracks that needed a lot of work to get things sounding right, and it's still the same now. There's a slightly different set of problems. In the old days, problems were either electrical noise or analog tape noise or malfunctioning gear. Now I hear more acoustical problems. Like if there's a distant-miked acoustic guitar or background vocals, there may be a lot of acoustic background noise or very strange room responses.

How about audio being delivered via MP3? Has that changed your methods at all?

A lot of people have said that this has become an MP3 industry and fidelity has gone down, but I don't think that's really true. The compressed audio formats have



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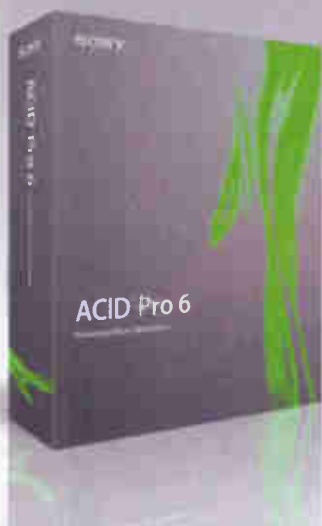
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replaced the cassette as a portable audio format. I think people still use CDs at home, and if they used cassettes, now they use an iPod at home, which is quite a bit better. I really don't see where that's become a quality problem, because people who still want high fidelity use an uncompressed format, and I think the general delivery format of AAC for portable is generally a big improvement over cassettes.

For me, not having to think of something being distributed on a cassette has helped. Cassettes would saturate very easily at high frequencies, so you'd have to watch out how much high-frequency energy you would put on it. With MP3s, you have to watch how much you put on there because things get harsh, but you're not really up against a technical wall.

You've recently won some Latin Grammys. How do those tracks differ from other work you've done?

In 2003, I did an album for Alejandro Sanz, and last summer I did a record for Ricardo Arjona with a producer named Tommy Torres. That was one of the albums where I was incredibly impressed with the tracks that came out of a home studio. The drummer on the project, Lee Levin, has his own studio with

Pro Tools and API preamps. He has his whole drum set at home, and he does the tracks there and they sound as good as anything I've heard. Most of the record was done in home studios and it sounds first-class.

Does your style change for the Latin market?
I'd say I mix more for the song. I don't want to be too general, but there are some Latin songs that want to be more lush and reverby, and some are more dry and in your face. To me, that is the style I relate to naturally, so it wasn't a stretch. I really like Latin music even though I don't understand a word of it. Musically, there's a certain fire in a lot of it that is very enjoyable. I love Latin projects.

How about the gear? What's in your studio now?

I have a Sony Oxford in the control room and a Pro Tools HD system with Accel cards. That's converted to MADI, so I have all 96 channels going directly into the console. Then I use my old MIXplus system as a mix machine to keep all the stems and different versions of the mix on one session, just to keep things neat. I also have a second room with a Pro Tools HD system and a Yamaha DM2000 console. That room is set up so my assistant, Tom Bender, can organize files while I'm working on a mix in the other



PHOTO: COURTESY NAVAS

Guzauski won his first Grammy Award this year, for Eric Clapton's Back Home album.

room. Also, it's great for when producers come over so they can be working on editing and tuning while I'm mixing.

Are you running into a brick wall with respect to the Oxford because it's not being made any longer?

GT PROFILE

Michael Wagener goes for the Glory!

WHAT HE'S DONE: Produced, recorded and mixed some of the biggest names in rock and pop, including Mötley Crüe, Dokken, Metallica, Janet Jackson, Ozzy, King's X and many more. Over 50,000,000 (!) copies of his work have been sold worldwide.

WHAT HE'S DOING: Developing and producing new bands like *Hydrogyn* and *Goldyllocks*.

WHAT HE USES: Groove Tubes' ViPRE™ tube mic preamp, Glory Comp™ tube compressor, and all of GT's studio condenser mics.

WHAT HE SAYS: "I've been using GT gear for many years. The reason is simple: every piece from Groove Tubes offers the great sound I'm looking for. The Glory Comp, ViPRE and GT mics have become an essential part of my setup, on everything from guitar to bass to vocals."

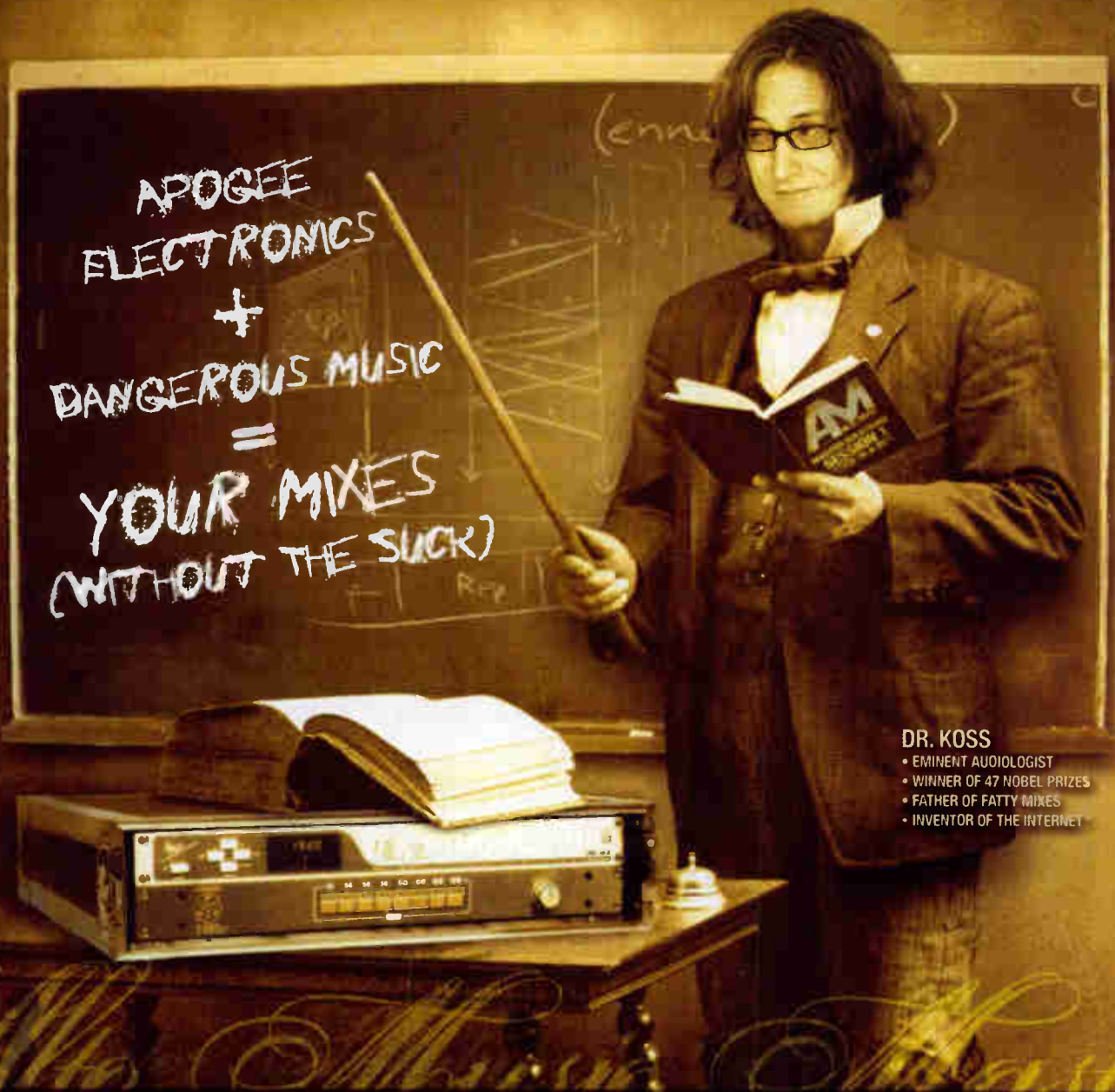
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Not yet. They stopped making the Oxford in 2003, and Sony has a policy of supporting discontinued products for seven years. The console has been very, very reliable aside from having to replace a few switches and some defective display drivers for the LCD screens.

It sounds like you dig the console.

Yeah, because the automation is so comprehensive and easy to use, and it just sounds good; it's very transparent. With the way things are now, when someone sends me a mix to do—and more often than not the producer, artist and A&R guy are not there—it's essential that I be able to do a quick recall. With the console and Pro Tools, it's really easy. I also like having a console rather than just mixing in Pro Tools. When I get a project in that I've never heard before, it's nice to have all that processing on every channel without having to assign it or build it when mixing in the box in Pro Tools. It's like an analog console.

The combination of Pro Tools and the Oxford works really great. Things that I need to do graphically with Pro Tools I can do before the console and it's not reflected on the console's faders. So I can clean stuff up

Usually, anything that's going to move around or offset from center I don't use the center speaker. I don't usually pan anything between center and right and center and left; I use the left and right as a stereo pair in that case.

and then use the console just as a creative tool to mix.

Do you like any of the new controllers that are available?

I'll be trying out a Digidesign D-Control soon. I'll set it up in my second room. I've got to learn that and see what it does because I think that really is the future of things right now. The Oxford still has some life in it, and I think that control surfaces for audio workstations have a ways to go before they have the flexibility of a real console.

So are you using Pro Tools strictly as a playback machine or do you use a lot of plug-ins?

I don't use too many plug-ins. I mostly use the EQ and compression in the Oxford, and I have quite a bit of analog outboard gear when I need it. For compression, I have 1176s, Dis-

trassors, Fatso Jr. and dbx, along with Weiss, Manley, GML, Calrec and Neve EQs.

The Eventide SP2016 was your go-to 'verb for a lot of mixes when we worked together. Are you still using it?

I still use them quite a bit. In recent years, on a lot of music, things have tended to be quite a bit drier. The Eventide is very good for sparkly, long reverb on vocals; I still use it on ballads. A lot of times, I'll use a short room or a delay. I'm using a lot more variety since I'm mixing a larger variety of music now. I also like the Sony DRE-777 sampling reverb, which they don't make anymore. It has some very natural-sounding short rooms and long rooms. I can put it in a mix and it doesn't sound like you've put artificial reverb on something

You've done quite a bit of surround work.



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What's your approach?

I love mixing surround because you have so much space to place things; you get a clarity that is very hard to get in stereo. Most of the surround stuff I've done is more about generating a believable live show, like the Cream concert I mixed. When it was recorded, there were four pairs of room mics around the theater. I worked with that and the band to create what you'd hear in about the tenth row. I've also done 5.1 mixes for all the other Clapton records I've done and some Michael McDonald records, which are more studio records repositioned for 5.1.

There are other surround projects where I got more inside the band, [but those] will probably never come out for political reasons. One was Michael Jackson's *Thriller*. The changes with Sony and with Michael mean that will probably never come out, but that was a lot of fun.

Do you use the center channel a lot or do you treat it more as a quad mix?

As a matter of course, I usually have some of the kick, bass, snare and lead vocal in the center, all dry. The vocal there to focus the center; the kick, snare and bass there because you have three speakers in front and getting

that much more cone area moving means you can get a little more punch. Usually, anything that's going to move around or offset from center I don't use the center speaker. I don't usually pan anything between center and right and center and left; I use the left and right as a stereo pair in that case.

When you do a surround mix, do you start with the surround and then go to stereo after or vice versa?

If I get a project I'm only going to do as a surround mix, I listen to the original record then try to set up a surround mix that feels similar to it. If I'm doing two mixes, I'll start with the stereo first and then pan stuff out and modify it as needed.

Where did this whole thing start for you?

When I was a kid and I listened to records, I was interested in how they were made and how they were recorded. My first gig, when I was in high school, was in a hi-fi and record store in Rochester. People would trade in stuff and I'd get old tape recorders and fix them and I built a little studio in my parents' basement. I built a little—I wouldn't call it a console—but a little mixer, and I'd overdub by tracking live to stereo on one stereo machine and then bounce to another machine while we did vocals. I engineered demos for local bands like that.

Later on I got a 4-track half-inch machine. At that time, I got to work with some very good people. I worked with Steve Gadd and Tony Levin on some different sessions and with Lou Gramm of Foreigner, who was then playing with some local bands, all in my parents' basement. That's how I started out in the late '60s.

A lot of great music and musicians came out of that area that propelled a lot of careers. Tell us about that.

At the time, Rochester had a really great music scene. There were a lot of clubs, and in '69, '70 and '71, the Eastman School of Music had [one of] the first recording engineering courses in the country. Phil Ramone taught and I'd go to the summer courses, and that was the introduction to the professional part of the business. It was a great thing back then.

I was also working for a sound company and did a lot of the live mixing for [Chuck] Mangione around the area. At the same time, we'd record some of the same concerts. His first album at Mercury Records, called *Friends and Love*, I recorded with the 4-track I brought up from my parents' basement. I hooked it up to the P.A. mixer, and back then it was separate mixers, not a console; we had several Ampex MX35 mixers. That was my first recording for him. We mixed that in my parents' basement.

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I have that record on vinyl. How did you get such a great sound and separation from just four tracks?

One track was the whole rhythm section; one track was the whole right side of the orchestra, brass and reeds; the third track was the left side of the orchestra; and the fourth track had all the solos and vocals. We had audience mics out in the theater that were across the brass and string tracks since those were the ones that were going to be panned left and right.

We used any mics we could find. We had anything from the consumer versions of the SM57s, the chrome ones, on up to U67s. Anything we could borrow and use. It was a major concert for him at that time, and we recorded it just sort of for the hell of it, but it ended up being released.

How did you make the transition from Rochester to L.A.?

In '75, [Mangione] brought me out to L.A. to engineer an album [of his] called *Chase the Clouds Away*. We recorded 45 players live in A&M Studio A. At that time, it didn't have any of the vocal booths; it was just one huge room. We did the whole band live, leakage and all. That was the first time I used a 24-track machine. He asked me, "Do you think

you can handle the gig?" and I didn't think I could, but I wasn't going to say that because I was going to lose the shot, and it worked out really good.

All the time I was out in L.A., I was meeting people and making contacts. One of my L.A. gigs when I first moved to town was with a band called DFK. It was Andy Johns' project, produced by James Newton Howard. Andy had a scheduling conflict, and James hired me to do some overdubs.

Eventually, in '78 I moved to L.A., and just to support myself I took a night tech job at Larrabee for a while. A good friend of mine from Syracuse [N.Y.], Jim Fitzpatrick, was running the Westlake Studio on Beverly Boulevard. He called me up and I started meeting a lot of producers and artists. Westlake was a nice hang at the time; I got gigs there by hanging out. I did a lot of work for James Newton Howard at the time, I met George Massenburg, and did a lot of work for Earth, Wind & Fire's label and did three records for them. I also worked with Valerie Carter, Prince and D.J. Rogers.

I was also called to do a record for Average White Band, with Jay Gruska producing, and he wanted to work at Conway. That's where I met Burt Bacharach and did

"That's What Friends Are For" with him, as well as Patti LaBelle's "On My Own." At that point, in the mid-'80s, I started getting calls for being a mixer. I did a lot of work for Peter Bunetta and Rick Chudacoff, who were producing a lot of records there. I mixed for Smokey Robinson, Talking Heads, *Welcome to the Real World* for Mr. Mister. So that was really the beginning of my mixing career. I used to work a lot at Lighthouse, Conway and Devonshire then.

And that brings us full circle, back to Sony in the early '90s. How did you eventually get back to New York?

I was doing a lot of work with Kenny G. and Michael Bolton in L.A. at the time, and Walter Afanasieff was producing a lot of cuts. They suggested he try me out. We did some work, and Walter was producing most of the Mariah Carey records. Tommy [Mottola] heard me and really liked my work, so I was going back and forth to New York. He wanted me to move to New York, and at the time, I didn't want to make the move. But after the earthquake hit, we—especially my wife—decided we were going to move back to New York. ■

Kevin Becka is Mix's technical editor.



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Sound Makes the Picture

Lars von Trier's *Manderlay*

By Matt Hurwitz

Bryce Dallas Howard raps impatiently on a cabin door. A mule wanders around in a circle, driving a creaky, old water pump. Danny Glover makes his way up a gravel road, the stones crunching beneath his feet. Never mind that there are no sets for the actors to interact with to produce those sounds; audiences watching Lars von Trier's *Manderlay* will have long forgotten that minor detail after just a few minutes' viewing.

The second in von Trier's minimalist trilogy—which began with the 2003 *Dogville*, starring Nicole Kidman—the film brings viewers into the world of a 1930s-era Southern plantation, where somebody forgot to tell the owner that slavery had ended 70 years ago. And, like *Dogville*, the film was shot with the barest of sets—the outlines of buildings and roads painted out on the floor giving the only clue to their existence. The rest is up to the actors, the audience's imagination—and the sound department.

Von Trier enlisted the expertise of sound designer Kristian Eidnes Andersen, who has previously worked on a number of von Trier's films, including *Dogville*, *Dancer in the Dark* (2000) and others.

"Lars' usual method is to go for a realistic approach," says Eidnes from Mainstream, his studio facility in Copenhagen, Denmark, where the film was mixed. "With *Breaking the Waves* and *Dancer in the Dark*, we had



a ton of atmosphere, direct sound and Foley work. He generally doesn't like it to be too smooth. *Manderlay* is quite the opposite."

The absence of sets makes a realistic soundtrack critical to the audience's experience. "That's a big part of the concept: to provide a kind of naturalistic sound," the director tells *Mix*. "It's important to 'fill in the gaps,' so to say, with sound."

Filmed in a former aircraft-assembly building in Sweden, the actors were recorded by production sound mixer Ad Stoop, who used both boom mics and lavaliers, the latter placed in the actors' hair. "For a lot of the dialog, it really provides a much cleaner track, with no air," notes Eidnes.

Boom mics were used, says von Trier, to aid in capturing what he calls "100-percent sound," or naturalistic sound. "It helps us to randomize the sound, because normal recording is not perfect. For recording some voices, we would even place the boom mic slightly off from where it should be."

Stoop recorded on the set using a pair of Tascam DA-98s to capture up to 16 mics on discrete tracks, making a live mono mix for immediate use by the film editor.

For sound effects, Eidnes and von Trier spotted from a print of art director Peter Grant's floor plan of the set. "Just as we did for *Dogville*, we looked at the drawing and noted, 'Okay, this area will have grass. This road will be made of gravel; this part with a little less gravel.' We'd work it out schematically and have a fixed plan so the Foley recorder doesn't need to be told every little detail; he just works from the map."

The pair even got as specific as spelling out the seasons represented in each portion of the film in order to plan for seasonal sounds, such as winds, crunching leaves, etc. Eidnes enlisted the help of American effects editor Coll Anderson as a consultant, the two having worked together recently on Thomas Vinterberg's *Dear Wendy*. "I wanted to make sure the sounds were accurate for the seasons, as represented in an American environment, such as crickets and things like that."

Certain sounds required careful planning for Foley recordist Pétur Einarsson and Foley artist Julien Naudin, whose work had to be mixed with care. For that task, Eidnes generated a set of rules to follow. "What are we hearing when we are outside a house looking into it and not hearing the activities on the inside? Or if we're inside, what from the outside do we hear?" Eidnes explains. "There might be a Foley sound, say, of someone outside a cabin chopping wood."

—CONTINUED ON PAGE 58

PHOTO: BERT DYREBORG-CARLSEN



Lars von Trier (left) and Kristian Eidnes Andersen mix the "naturalistic" soundtrack of *Manderlay* in Mainstream Studio, Copenhagen, Denmark.

Dario Marianelli

Classics Inspire Modern Scores

By Bryan Reesman

What do feudal India, pre-Victorian England and modern-day Rwanda have in common? They have all inspired the eclectic soundtrack work of composer Dario Marianelli. From Terry Gilliam's dark fantasy *The Brothers Grimm* to the contemporary Australian film *Opal Dream* and the recent sci-fi movie *V for Vendetta*, Marianelli has scored cinematic stories from different times and places, mixing influences from those settings into his sonic tapestries. Such diversity should come as no surprise from a musician who transitioned from Italian conservatories to British soundstages to work on films of multinational origins.

The aural adventures of Marianelli mirror his personal ones. A native of Pisa, Italy, he began playing piano and singing in a boys' choir when he was six years old. He was a chorister for eight years

until his voice broke. Although piano is his one true instrument, he later would play slide whistle and melody horn and whistle on some of his scores.

"There is no music college in Pisa, so I studied piano privately there, and I did my exams as an external student in conservatories in nearby cities—Florence, Lucca, Livorno," explains Marianelli. "I also had a private composition teacher, a very eccentric American living in Florence, with whom I spent seven years just doing counterpoint." Armed with extensive musical knowledge, the budding young composer then journeyed to England and attended the Guildhall School of Music and Drama for a post-graduate course in composition, followed by three years at the National



Film and Television School.

Marianelli began his career doing unpaid fringe theater in London, which soon led to paying gigs on concert pieces,

—CONTINUED ON PAGE 59

Composer David Kitay

Freely Moving From Band to Solo Work

By Gary Eskow

Like so many in the audio industry, David Kitay grew up in a music-making home. His mother was an opera singer who exposed him to a variety of influences, but the guitar gods—Jimmy Page, Jimi Hendrix and the rest—captured his soul.

After graduating from Palisades High School in Los Angeles, Kitay's chops landed him a series of high-profile recording dates with industry luminaries such as Barry Mann and the Pointer Sisters. If you own a copy of the Pointers' classic album from 1983, *Break Out*, that's Kitay chugging away on the James Ingram song "Baby Come and Get It." Kitay also started a record company with Steve Terrell, and after his own band, Darwin, plowed through their sixth engineer while recording an album for PolyGram Records, the guitarist decided

that he had better learn something about working behind the board, as well.

"Steve brought some projects to the table that allowed me to move into underscoring, which was a goal of mine," says Kitay. "A teen wolf cartoon got me started, and then I scored a comedy called *Frank's Place*." Eventually, he met director Amy Heckerling, who had directed *Fast Times at Ridgemont High* and was well-respected by the time she tapped Kitay to score *Look Who's Talking*. The success of that film and its sequel, *Look Who's Talking Too*, vaulted Kitay several rungs up the scoring ladder. Just when things were looking rosy, he took a year off.

"My mom died in 1991, and I decided to spend some time with my father and write songs," he recalls. "A year later, when I decided I was ready to be a big-

time composer again, nobody cared, and I had to start all over! Fortunately, I got the opportunity to score the series *Mad About You*, and then Amy called me to



score *Clueless*, and the ball started to roll again."

Art School Confidential, an independent film starring Max Minghella, John Malkovich, Jim Broadbent and Anjelica Huston, was recently shown at the Sundance Film Festival and will be released theatrically on September 1, 2006. Like all of Kitay's scores, this one took shape in the studio that occupies the bottom floor of his Malibu, Calif., home.

"I have one rack of Neve stuff and another filled with APIs that I feed into my Pro Tools HD system," he explains. "I do my sequencing in Logic running on a G5, and also still get a lot of mileage out of my Mackie D8B console. Of course, more and more processing is done inside the computer, and so the D8B functions more as a monitoring board, but I still think it's an excellent console.

"My newest favorite toy is the Frontier TranzPort," he continues. "It gives me wireless control over my Pro Tools transport. My studio is about 700 square feet, divided among several rooms. I love the fact that I can walk around and have control over the TranzPort from anywhere. Jack Viera helped me tune the room, and it's a comfortable

environment for me to track and mix in."

Known for the way he combines large classical orchestrations and funk, Kitay has an array of guitars and GigaStudio workstations. "I have four 'GigaStations,' and I use them to create decent-sounding demos, but I almost always use live players on my scores," he says. "I like the Sonic Implants orchestral samples very much, and I also use the Vienna Symphony Library. The new VSL interface sounds very interesting.

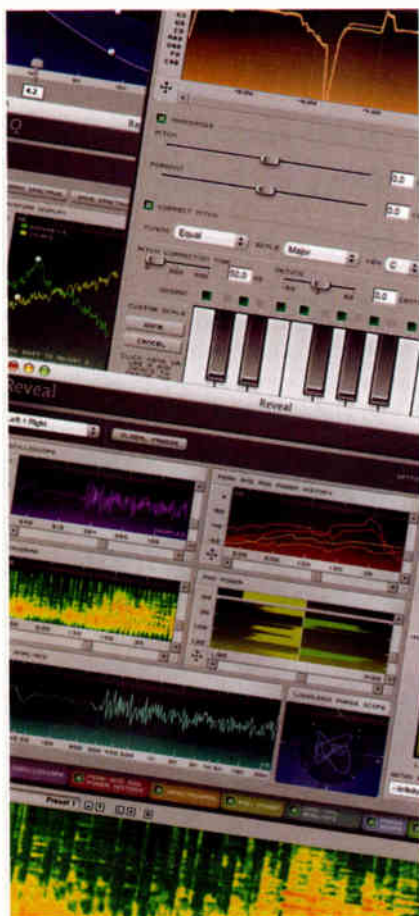
"When I track in outside studios, I always try to book [engineer] Danny Wallin," he continues. "He has a fantastic ability to track a live orchestra so that it's practically mixed by the time the session is over. I'll bring his mixes back here, load them into Pro Tools, tweak things a bit and record my overdubs. It's a great way to work, and knowing that you're working with an engineer who has recorded some of the greatest scores of all time, including *Raiders of the Lost Ark* and *Bonnie and Clyde*, is inspiring!"

A pair of speakers built by Wallin are the main monitors in Kitay's studio. "Although I don't have a surround setup permanently installed here, I do set up three more speakers whenever I do a film mix. As far as soft sounds go, I'm a huge Absynth

fan, and the Native Instruments guitar amp simulator rack is amazing. Lots of the EXS24 stuff inside Logic is great, and I also use Trilogy, the software bass module from Spectrasonics, a lot."

Although he continues to be intrigued by the possibility of making a great record as part of a band, the solitary pleasures that the film business afford are more appealing to Kitay, who has two small children. "I love composing for movies; you don't have to deal with anything other than that piece of celluloid!" he says. "I like the concept of a band, but working day in, day out with three to five other people can wear on me at times. I like the freedom to make my own choices, and then simply consult with one other person—the director—to make sure the music is working the way it should."

On one of his most recent projects, *The Darwin Awards* (which also premiered at the 2006 Sundance Film Festival), Kitay took the unusual—probably unprecedented—approach of having the entire score performed in reverse and then digitally reversed in the mix process to mirror the darkness of the comedy. Starring Joseph Fiennes, Winona Ryder, Julianna Margulies, David Arquette, Wilmer Valderrama and the



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late Christopher Penn, *The Darwin Awards* honors a series of people who "accidentally kill themselves in interesting ways."

Working on quirky films is nothing new to Kitay though. His credits include the original *Scary Movie* and *Bad Santa*. He recently completed work on *Relative Strangers*, which stars Danny DeVito, Kathy Bates, Neve Campell and Ron Livingston, and a British comedy, *Caffeine*. Speaking of a rush, Kitay says that "some people think I'm insane. I once had a director tell me that he'd be nervous about hiring me, but would make a movie about me!" ■

Manderlay

—FROM PAGE 54

If we're inside the house, all we should hear is a dull thud."

Some sound design issues were built into the script, Eidnes says. "We had a well operated by a donkey walking around in a circle, turning this mechanism, for which we needed squeaking sounds." The donkey was filmed live, though its footsteps were not recorded. "We actually stripped all of the direct sound from the soundstage because the floor material from the original aircraft-assembly building had an asphalt surface, which was too soft to produce the correct sound of the animal's hooves. So that had to be recorded in post. And then later, the characters slaughter the donkey for food, so we had to record people's footsteps when they began operating the pump."

A von Trier trademark—jump-cutting from different takes within single shots—made for an interesting challenge for the sound team. "My technique is to shoot a lot of material, to have the actors perform the scene in variety of ways, and then put the whole thing together from these various takes in the editing room," the director explains. "So then we mark these edits with a sound. But we have to cheat a little, since most of the sound was constructed artificially afterward."

"When you have a time cut like that," says Eidnes, "you have to have a time cut in the sound, as well, with atmosphere, Foley sounds or a microphone scratch." In one example, a meeting is taking place in one of the cabins on a day when it is raining outside. "You can jump the level of the rain and cut hard on the rain at a higher level, even when the picture is simply cutting from a two-shot to a two-shot."

The music for the film, notes von Trier, "is a strange choice, a kind of Baroque/Renaissance music. In my mind, I pictured a small orchestra, the size that could fit in

a small theater." According to Eidnes, "Our composer, Joachim Holbek, rewrote these edited classical pieces and recorded them in London with a Baroque orchestra."

The mix took place at Mainstream, where Eidnes worked with dialog editor Anne Jensen on Pro Tools HD. "We tried to create a very dynamic mix," Eidnes says. "All of these different small sounds are very important to help keep the audience in the story. They have to be very subtle—you shouldn't hear every little detail, but only every third footstep, for example." For music stems, Eidnes isolated soloists, allowing them to be pulled back where needed to avoid conflict with narration changes. "I actually had the whole symphonic session in Pro Tools, but only on two or three stems." The mix was then mastered to Dolby DMU AC3.

The result is a mix that, temporarily, helps the audience disregard the fact that they are watching a film with no sets, allowing their imaginations to do the rest. "I think you wouldn't be able to hear all of these sounds on a conscious level," says von Trier. "We put them in just to give a feeling of reality." ■

Marianelli

—FROM PAGE 55

ballets and theater productions during the next few years. Then he landed a feature film, scoring Paddy Breathnach's *Ailsa* in 1994. Since that time, he has worked on a variety of shorts and features, the latter including *The Warrior*, a film set in feudal India; *Blood Strangers*, a British television drama; *Shooting Dogs*, about the Rwandan genocide; *Sauf le Respect*, a modern French movie; and the latest screen interpretation of author Jane Austen's 18th-century classic, *Pride & Prejudice*.

The first feature film for which Marianelli wrote a substantial amount of music was *Pandaemonium*, helmed by well-known music video director Julien Temple in 2000. Having a director that understood music made the experience quite memorable. "I liked *Pandaemonium* a lot," says Marianelli. "It was based on the idea that early 19th-century English poets were the rock stars of the time, the true revolutionaries."

The score for Temple's film was multi-layered, with several different strands, all coming together in some cues. "One of them was the fantastical and utopian idea that these poets had of the 'Orient,' the very place that provided Coleridge with much of the opium and the inspiration

for *Kubla Khan*," notes Marianelli. "There were also more romantic themes, not so much associated to individual characters, but rather to the way I see the beginnings of the Romantic movement in England." Temple suggested using some of the "more revolutionary" and death-defyingly fast-paced music by Jean-Baptiste Rameau, a French composer of operas and chamber music, as action pieces for the film.

Such an adventurous artistic spirit also propelled Marianelli's work with director Joe Wright on *Pride & Prejudice*. They initially discussed the time period in which Austen wrote the first draft of her famous novel (in 1797), when 27-year-old Ludwig Van Beethoven was simultaneously composing his groundbreaking music. Marianelli played Wright some of Beethoven's early piano sonatas as a starting point. He recalls: "I went away and wrote what became Lizzie Bennet's theme, the piece that opens the film, and we hear it played very badly by her at some point and much better by Darcy's sister later on in the film."

Although the London-based composer says he is completely immersed in the process of recording and mixing the soundtracks he works on, he reveals that until recently, he did "absolutely everything": writing, orchestrating, preparing score and parts, recording and sampling sounds, preparing click tracks and occasionally playing the piano part during the recording sessions with the orchestra, not to mention conducting his own music. Then he would sit through the mix, go to the dubbing theater to personally deliver the score and confirm that it was properly synchronized with the picture. "Recently, I have started working with some trusted collaborators," Marianelli discloses, "but I am still there all the way."

The composer has a modest home setup: an Apple G5 with Digital Performer, GigaStudio, a MachFive and two K2000R samplers, E-mu Audity and Virtuoso synths, a Yamaha VL70 and P80, a Mackie 24:8:2 analog desk, MOTU 828 FireWire interface and a TC Electronic M2000 processor. "I occasionally write at the piano, at home, scribble on a notepad and then go to my studio," he says. "It doesn't happen often these days, as my kids jump on me as soon as I sit at the piano and want to play along." Luckily, his private studio is a 15-minute cycling trip away in North London. "I rent a room where I go every morning to work," Marianelli explains. "Individual instruments and vocals I record there, and mock everything else with samplers until I replace the sampled stuff with the real thing

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in a big studio.”

A large orchestral score like *The Brothers Grimm* certainly required a big studio. Marianelli grew up with the symphonic music of the story's early 18th-century setting, as well as the 20th-century orchestral music that provided a strong influence for the soundtrack. There are two pieces within the score that classical music aficionados will easily recognize: Brahms' "Lullaby" and Rossini's "The Thieving Magpie," which is quoted in the end credits theme.

The Brothers Grimm was a tour de force for Marianelli in terms of both technique and writing. "The film was really tricky, tone-wise," he says. "It really jumps fast from one mood to another and then another, and to keep any sustained musical idea going was really hard. But the blessing on that film was Terry's [Gilliam] unfailing support and trust, which gave me a lot of scope to experiment and try new things, new for me, anyway."

On the flip side of the bombastic *Brothers Grimm* is the modest British period piece *I Capture the Castle*, which is about an eccentric family of paupers living in an old castle who become socially and

romantically entangled with an aristocratic brood in their area. Set in the 1930s, it's a character-driven vehicle that features a multifaceted score—sometimes elegant and romantic, other times playful and occasionally haunting, particularly the echoing keyboard pieces that recall the work of Brian Eno.

"The reverberant piano was usually associated to childhood memories, looking back and seeing something tender from afar," says Marianelli. "It is interesting that you bring up Brian Eno. I think my music has very little to do with his, but on *I Capture the Castle*, there was a vague connection to some of Erik Satie's music."

No matter what he is working on, whether on a large or small scale, Marianelli brings his cross-cultural sensibilities into play, which is something that stems from his days as a student. He began working with musicians from non-Western traditions while attending film school. His first experience was collaborating with Indian director Preeya Lal.

"[She asked] if I could find a way to score her documentary about her own mixed feelings of 'belonging': being Indian but having grown up in the West," he recalls.

"I started looking for Indian musicians in London, and I met a wonderful sitar player who became a source of great inspiration for several projects after that. I had also scored an Indian short film, *The Sheep Thief*, by the same director [Asif Kapadia] as *The Warrior*."

At various points during his career, Marianelli has scored documentaries about archeology or ancient civilizations that have allowed him to partner with musicians from the Middle East and Asia. He has also worked with Western musicians who play non-Western instruments, and while he says that is quite a different experience, it has been equally rewarding for him. "With some of these people, I have established a close working relationship over the years and discovered that there is a very powerful, deep buried point that we have in common when it comes to try to move people with music," Marianelli muses.

Within his diverse body of work, Marianelli has tapped into that power point very well. He has traveled to far-off musical lands and effortlessly whisked away his listeners with him. And there are still new vistas on the horizon. ■

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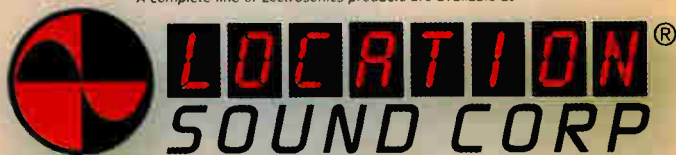
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VENUE *On the Road* DVD.

Leela James



Photos and Text by Steve Jennings

Mix caught up with Leela James' tour at San Francisco's Fillmore Auditorium. At FOH was "Commissioner" Gordon Williams, whose studio credits include Damian Marley, Joss Stone and Wyclef Jean. While senior director of A&R at Sony Music, Williams' work on *The Miseducation of Lauryn Hill* earned him two Grammys, followed by another the next year for mixing on Santana's mega-selling *Supernatural*.

"I have been working with Leela in the studio for a few years and I'll work FOH when I can, depending on my studio schedule," says Williams. "Leela likes a lot of vocal up front. I really like tube compressors for Leela's vocal. She has an extremely strong voice, and when she hits something like an 1176 or LA-2A, it just sounds natural."

For live work, Williams prefers Midas consoles, "although last week, when we opened for Lionel Richie, they had Digidesign's Venue digital console. It was incredible! I've been a longtime Pro Tools user, and this desk was probably the most user-friendly console I've used in a long time."

Technology aside, it all comes down to basics. "My main goal is to give the people what they paid for," Williams explains. "I like to go for an aggressive mix, which comes naturally to me because of all my years in hip hop. With quite a few upbeat numbers in the show, I need the drums and the bass to knock. Everything in the show is live, so it's a little trickier to get the type of low end that I want without using samples. I'm constantly adjusting the dynamics of the show—sort of 'performing' right along with the band.

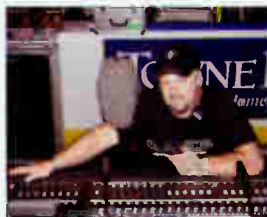
"I really enjoy working with this band. They're a seasoned group of musicians that always give 100 percent every show. Leela's shows are an experience."



Front-of-house engineer Gordon Williams

FixIt

Bryan Cross (Tower of Power, Vertical Horizon, Lifehouse, Howie Day) is currently out with the Pussycat Dolls, where he is manning both front-of-house and monitor duties, as well as acting as production manager. He's also got a new friend on the road: Fritz.



"I'm doing monitors and front of house for the girls from the monitor desk. I have the [Neumann KU 100, aka "Fritz"] dummy head sitting out at front of house and it's returning two lines back to monitor world that are feeding a pair of JBL 4328 studio monitors. I'm sending all my monitor mixes pre-fader from the console, using the internal effects, and mixing left/right on the faders and sending it to the house. I also have a split from the head going to my laptop running SmartLive, so I'm able to hear those microphones out front while being able to visualize it on SmartLive. In addition, I'm using a pair of Neumann 184s for my audience mics. I have two channels of track coming from Pro Tools and six wireless mics onstage. That's eight channels on the console. There's no reason why I shouldn't be able to do it from one desk!"

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News



Fabric, one of London's hottest nightclubs, has upgraded to a 32-channel Allen & Heath GL4800 board. The desk resides in the club's Room Two, which hosts weekly live performances.

Reno, Nev.-based **Starsound Audio** recently supplied a full **Adamson** system for UB40's date at the University of Nevada. Front-of-house engineer **Tom Wiggings'** mix was heard through a main array of 16 Y10s flown per side, augmented by eight **SpekTrix** and four **SpekTrix** subs... **SPL Sound** (Vineland, NJ) augmented its inventory of **JBL VerTec 4889** line array elements with an additional 10 units, bringing its total to 40. The SR provider also purchased additional **VerTec 4880** subs and two **Yamaha PM5D-RH** boards with redundant power supplies and 96k cards... **Tommy Hilfiger**

Europe's new **European Hilfiger Sessions** brings top and up-and-coming artists in the round for select shows. Powering this concept is a system comprising four clusters each of three **Alcons**



Audio LR14 ultracompact ribbon line arrays, flown from a circular truss positioned above the band. All gear is supplied by the members of **Alcons' Ribbon Network**... **Cirque Du Soleil's** latest touring production, *Corteo*, portrays the funeral of a circus clown as a festive parade with a carnival-like atmosphere, prompting placement of an elongated open stage down the middle of the oval "Grand Chapiteau" tent. The resulting split auditorium dictated dual mirror-image audio systems. The task was assigned to veteran sound designer **Jonathan Deans**, who relied on 38 self-powered **Meyer Sound** loudspeakers per side with mixing and control from a common **LCS Audio CueConsole** to meet the challenge.

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As time moves on, technology evolves. Your laptop today is more powerful than these mainframes were 50 years ago. What used to be heavy, complicated and expensive, is now lightweight, easy to use and affordable. Take for example Yamaha's M7CL digital mixing console. With its touch-screen panel, "single layer" control surface, and Centralogic™ function that provides instant access to all channels and mixes, digital has never been so simple. Add size and cost into the matter, and we think you'll agree that change is good.

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On the Road

Tricia Ellsworth

After three years of working the Foxwoods Casino stage audio crew with all kinds of acts—from musical performances to circuses—dealing with rock bands is probably a piece of cake for Tricia Ellsworth. She certainly has some workaholic blood coursing through her veins: Ellsworth mixed the U.S. leg of The Academy Is' "Almost Here" tour in late-March; plus Panic! at the Disco; and Men, Women and Children at the UK's Give It a Name and New Jersey's Bamboozle festivals before rejoining TAI's European tour, which wraps up in Paris on June 1. Then she returns Stateside with Butch Walker this summer. Whew!

What's the challenge of doing The Academy Is'?

Making sure the audience can hear every word William Beckett sings over the audience members singing along!

Were you carrying production on that tour?

Not too much. We carry all of our own mics, which are mostly Audix. William Beckett and [drummer/backing vocalist] The Butcher are using in-ear monitors, but we're planning on getting the whole band on in-cars pretty soon.

What's your "must have" gear?

My effects rack, which includes a Lexicon PCM 42 delay, a TC Electronic D2 delay, a Lexicon PCM 60 reverb, and, oddly enough, a Korg Kaoss pad, which has great reverbs and delays.

What are some of your fave venues?

The House of Blues in Cleveland, Chicago and Anaheim sound fantastic. I also really enjoy mixing at the Chicago Metro. In the UK, the Portsmouth Pyramid Center is a great-sounding room, as is the London Astoria.

What do you like doing when you're off the road?

I like anything that involves the outdoors, like hiking, mountain biking, long-boarding—a new favorite.

Now Playing

Julie Roberts

FOH Engineer/Console: Jeff Hawkins (also production manager)/house-provided—DiGiCo D5, Yamaha PM5D, Midas, Crest

P.A./Amps: house-provided (McCauley, JBL VerTec, L-Acoustics V-DOSC, Sound Image proprietary)/Crown, QSC
Monitors: Sennheiser G2 in-ear wireless with Westone in-ear drivers

Outboard Gear: Manley VoxBox (vocals), house-provided
Microphones: Sennheiser G2 wireless with 845 capsule, 906; Shure Beta 58s, SM91, Beta 52, SM57, SM81, SM98

Sevendust

Sound Company: Rainbow Prod. (Hampstead, N.H.)

FOH Engineer/Console: Andy Meyer/Yamaha PM5D-RH
Monitor Engineer/Console: Rob Smuder/Yamaha PM5D-RH

P.A./Amps: Meyer Sound MICA/Crown SB-1000 5002 amp racks

Monitors: EAW SM22, KF-850, SB-850; Shure 600/700
Outboard Gear: Vintech X73, TC Electronic D2/M3000, Eventide Eclipse, Lexicon PCM91, dbx 120X, Apogee Big Ben, Avalon 747, XTA DP-226

Microphones: Audio-Technica AE 6100, 4050, 4047, AE 2500, ATM 23, ATM 25, 4041, AE 5000

Additional Crew: systems tech Mike Babcock, monitor systems tech Bill Collyer

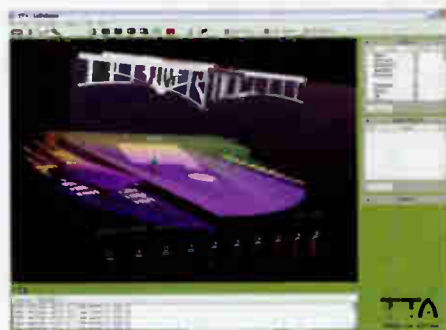


Audio in the Round

London's Royal Albert Hall recently hosted an opera-in-the-round production of *La Bohème*, which made use of Out Board's TiMax audio imaging delay matrix and a new automated tracking system developed by Norwegian technologists Track the Actors (TTA). Autograph Sound provided the Meyer, XTA and DiGiCo D5T sound system, supervised by Andy Brown.

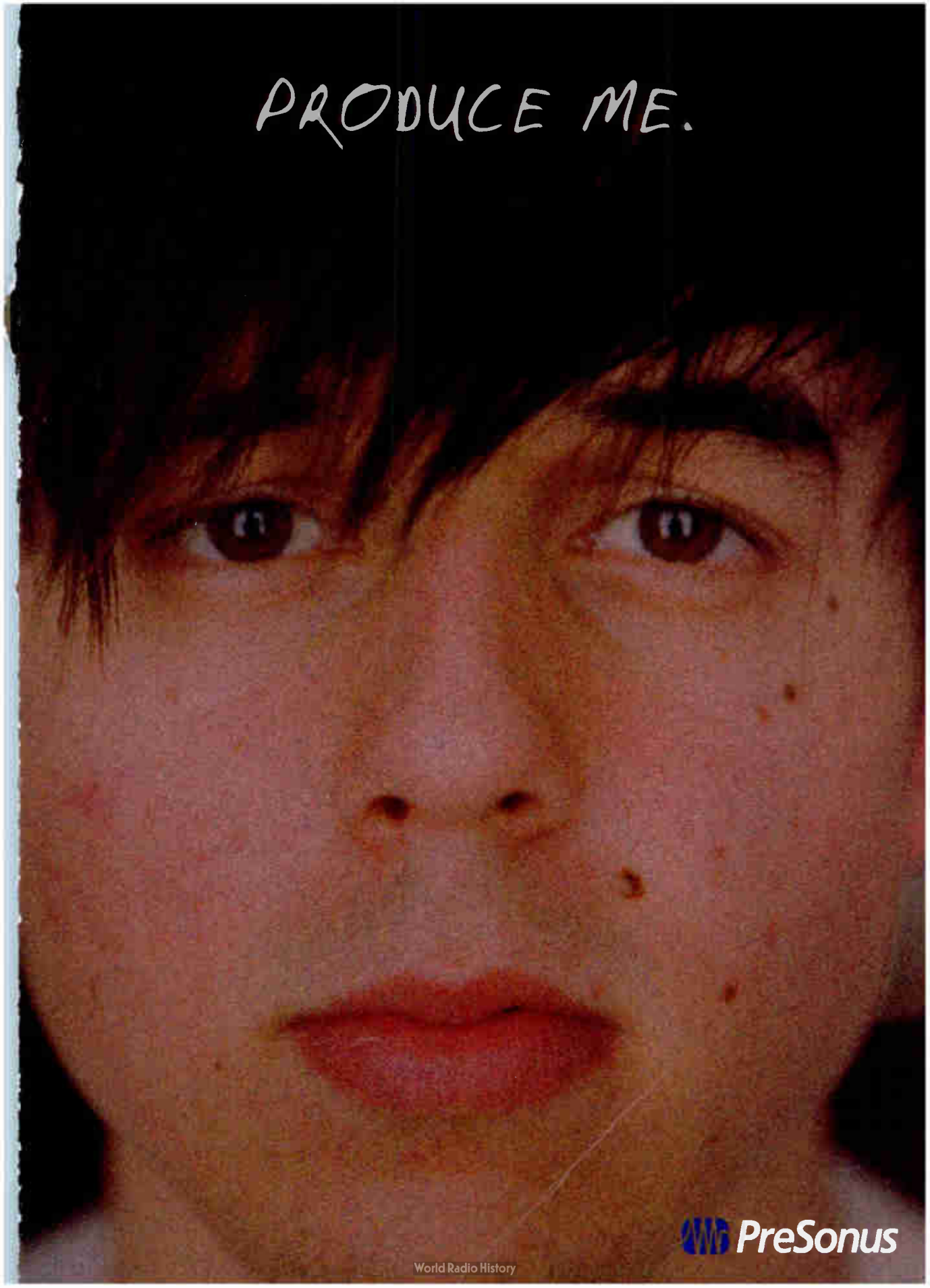
Sound designer Bobby Aitken uses TiMax to create a "source-oriented reinforcement" system employing Haas precedence delay psychoacoustics to ensure all audience members perceive the vocals to be coming from the opera singers and not from the multichannel sound system distributed on a grid above the stage and behind grilles in the stage. Aitken and sound engineer Richard Sharat's goal was to ensure that every audience member received an acoustic wavefront from each performer about 10 to 20 ms before the reinforcing energy from the speakers.

TiMax sets up multiple image definitions, which are unique delay relationships between every source and each loudspeaker reinforcing it. These relationships are changed every time a performer moves to a different location onstage. The TTA system tracked each actor's movement while TiMax responded automatically to move their radio mics onto the corresponding image definitions.



TiMax audio imaging delay matrix processor in use with an automatic tracking system

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MIX

The *Lord of the Rings* Live

BY GARY ESKOW

The depth, majesty and complexity of *The Lord of the Rings* trilogy were so masterfully rendered in J.R.R. Tolkien's novels, critics wondered if Middle Earth could be brought to its full glory on the silver screen, but director Peter Jackson proved it could be done. But can the success of the novels and films be brought to the Broadway stage? Can the evil, powerful Sauron be effectively conveyed to an audience only feet away from the actors? To see if the ideals of Gandalf and the rest of the fellowship could survive the stage, we couldn't turn down the opportunity to catch the opening of *The Lord of the Rings* musical at the Princess of Wales Theater in Toronto. The score for this ambitious production is performed under the capable direction of Chris Nightingale (who is also the orchestrator and musical supervisor), and performed by an ensemble of 15 live musicians and three keyboardists triggering the Vienna Symphonic Library Pro Edition sample sets off of G5 computers running Logic.

ONE SAMPLE TO RULE THE SHOW

We're all familiar with orchestral samples that pop out of a stereo mix. Although they are often tucked under the sound of live players to add some beef, rarely—if ever—are samples used to the exclusion of musicians in high-profile films. So, we wondered, how effectively does the VSL—prominently exposed—move air in a large theatrical environment? Used to augment the few live string players in the ensemble and create large sections on their own, do they present any unusual mixing problems? And, by the way, how's the music?

The score to *LOTR* is unusual in that it features the work of three different creative talents. A.R. Rahman is a highly recognized composer from India. The son of a well-known music director in that country's film industry, Rahman has

been composing soundtracks for more than a decade, including work on *Bombay Dreams*, a musical that recently completed its Broadway run. Nightingale contributed a number of underscore cues to the show. Sound designer Simon Baker was also involved in setting up the mix templates for the production.

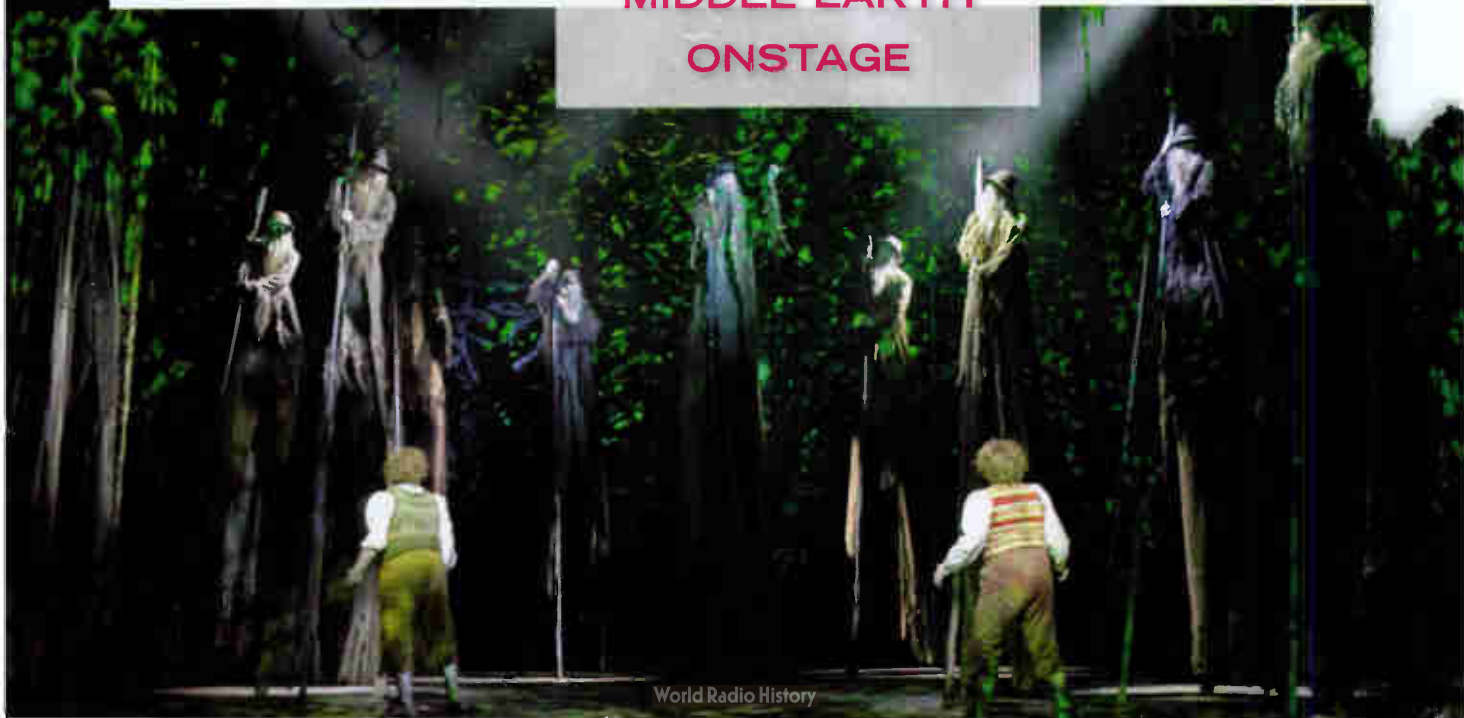
In development for almost three years, *LOTR* presented a series of challenges for Nightingale, including blending music from two distinctly different compositional voices into the score. Finnish group Värttinä provides the otherworldly choral material, and Rahman contributed a series of blue-grass-inspired tunes (*Oklahoma* meets a sitar-strumming Doc Watson), mostly delivered by the hobbits of Middle Earth.

"I was flying all over the place, recording Värttinä, for example, and then bringing their songs into Logic," says Nightingale. "I always knew that we were going to use the VSL Pro Edition, so I orchestrated to its strengths. It wasn't simply a case of throwing parts at a keyboard player or three and asking them to do the best they can.

"I'm extremely interested in the new Vienna Instrument engine, but it's just come out and there's no way we could have integrated it into this production," Nightingale continues. "However, I'm very familiar with the articulations that the Pro Edition contains, and we made sure that the players we hired were able to use the Legato Tool, in particular, for the strings and other instruments.

"Our orchestra comprises a string quartet, double bass, three trombones, two French horns, one trumpet and two percussionists. The first violinist doubles on several other string instruments, and we also have a flautist who doubles on piccolo and ethnic flute. Obviously, there was an economic motivation behind our decision to rely so heavily on samples, and we put a lot of time into considering how to

SAMPLING MIDDLE EARTH ONSTAGE





Orchestrator/music supervisor
Chris Nightingale

to use them. VSL is used to strengthen the brass choirs and for string reinforcement. We also used its excellent harp quite a bit. I was concerned that in *pianissimo* passages, the samples might push too much air—occupy too much space. That's a problem with samples: They can overwhelm. We spent a lot of time building dynamics into the keyboard parts to avoid this pitfall."

The Princess of Wales Theater is a big room, and the multiple elements of the sonic palette—singers, live players, samples and sound design—combine to form a dense and cohesive texture that yields an auditory experience closer to film than theater. The samples were never false-sounding, even when they were used to paint the picture of a large string section and mixed with the brash brass and commanding percussion parts, which were performed on acoustic instruments.

Those responsible for the sound included Phij Adams, the keyboard specialist who was charged with taking Nightingale's finished score and making sure that the computer parts were as easy to play live as possible, and that computer redundancy was in place to ensure no catastrophic loss of music. He clearly put some thought into finding ways to maximize the realism of the samples. For example, late in the third act, while the full band wails away at triple *forte*, the strings hold a tremolo note in octaves. Real players never sit on a tremolo with equal speed or intensity, but the amount of hard drive space required to replicate these subtle shifts makes the effect impractical, so the static quality of the tremolo was obvious to an audio pro. but I doubt the average theatergoer would recognize this. As the ensemble decrescendoeed into oblivion, the sampled strings disappeared, leaving the live players—who slowed their tremelos while fading away—to complete the task.

"Everything was considered," says Adams. "Each of the three keyboardists outputs four stereo pairs to the console. We spent a lot of time setting levels at the computer to try and take some of the strain off of the mixers. VSL has a lot of dynamics built into its patches, which is great for studio work. But we couldn't take the chance that a trombone, for example, would suddenly jump out of the pit, so I did a lot of velocity squeezing to make sure that didn't happen. VSL did a good job setting up the mod wheel to switch between samples, but we wanted to get the most out of the players' hands, so I wrote patches that use a foot player instead."

All of the players are manning Yamaha S92 keyboards, with Logic 7 running on dual-processor G5s. "Of course," Adams says, "anything can happen when you're playing live, so we have mirrored systems for each of our players."

DEEPER INTO THE SYSTEM

The show is using a Meyer Sound MICA P.A. system, augmented with a Meyer mid-center cluster and Meyer onstage monitors, which provide fallback for the cast. "We always knew we were going to include a lot of surround and sub-bass information," Baker says. "Every bit of sound design I created had that concept in mind. We incorporate an awful lot of bass harmonic extenders, plus EQ and compression to deliver rumble in the sub-bass for those key moments."

The pit at the Princess of Wales is almost completely enclosed, making it necessary to mike the ensemble. Depending on the number of instruments being played at one time, and the size of the cast that's contributing to the sound at any moment, bleeding from the pit can present treacherous mix problems. "The density of the sound—and it is dense at times—is not really the problem," Baker says. "But there are obstacles to overcome when you combine light folk material, heavy vocal arrangements and big orchestral cues in one score. Compared to a live rock show, for example, where the music sits on a narrow dynamic, it's a huge challenge! Trying to create a seamless texture that sounds like one entity—particularly when you're blending in keyboards—that's the trick."

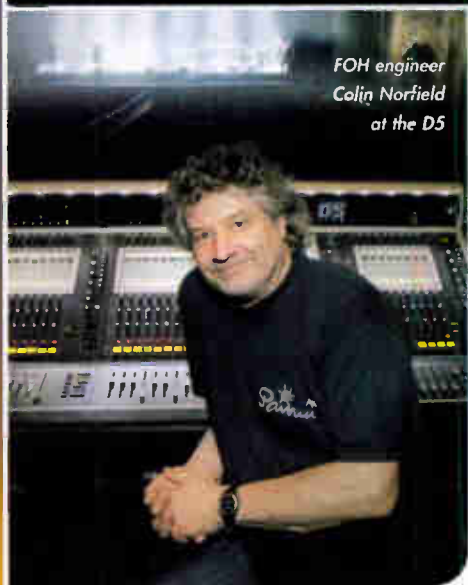
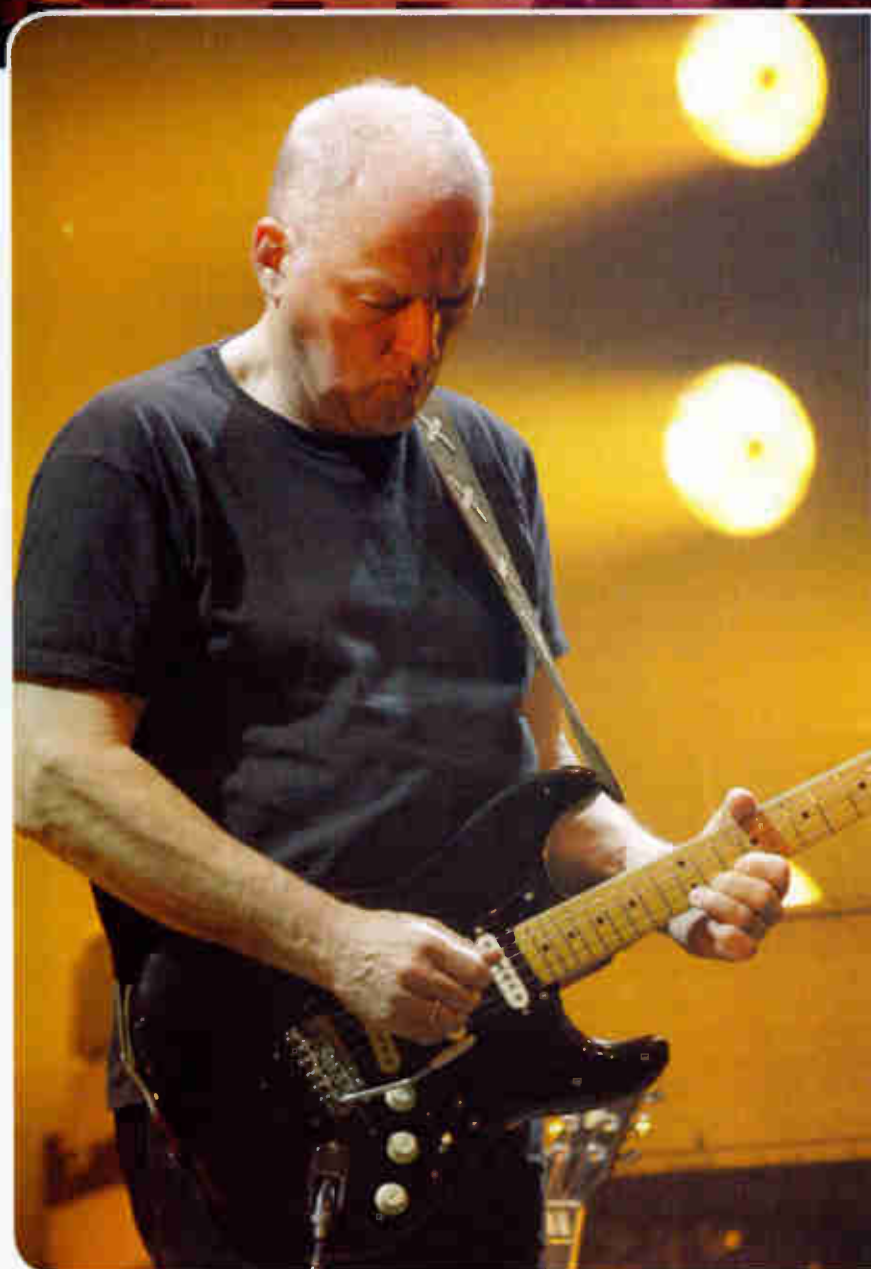
However, the show's audio crew was able to work out these bugs, partly because they are using two DiGiCo D5T mixers, which are modified for theater use. Andrew Bruce is the codesigner of the console; "He's also the owner of Autograph, a rental and design company based in the UK," Baker points out. "All of us who work at Autograph are familiar with the desk and have learned lots of little tricks to squeeze everything out of it that we can. For example, rather than numbered EQ presets, we have aliases that make it easy to switch between settings. Let's say a character wears a hat in one scene and not in another. We enter different names for the character that make it simple to coordinate presets with scenes. These things really help when there's a sudden change from folk music to orchestral underscoring. We've got separate reverbs for all of the keyboards, and they change throughout the course of the show. We tweaked the blend of reverb and predelay times on all of them to help ensure that they work well with the live instruments."

"For the first time, I'm using Logic for sound effects playback. Having the keyboards and the sound effects system using the same platform makes it easier to maintain the show. We've tried to get the electronic music and sound design to work as one department rather than two." ■

Gary Eskow is a contributing writer to Mix.

David Gilmour's "ON AN ISLAND" TOUR

By David John Farinella



FOH engineer
Colin Norfield
at the D5

Just a few hours before David Gilmour hits the stage in one of the most anticipated shows to come to the United States this spring, front of house engineer Colin Norfield and monitor engineer John Roden are sitting in the plush seats of the Paramount Theater (Oakland, Calif.) and laughing.

Any other audio duo might be a tad nervous before a show of this stature. But Norfield and Roden have been around the block; Norfield mixed the last Pink Floyd tour 12 years ago. They also know they have a team of seasoned veterans, both onstage and in support positions, and they have already worked one of the hardest shows of the tour.

"We rehearsed the band for a week and then we did David's birthday party—a private gig in front of his peers. It was a bit brave of

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Monitor engineer John Roden

him and it was a bit brave for us," Roden recalls while pointing to Norfield, "because we were off the stage side by side."

"I couldn't hear anything," Norfield adds with his own laugh, "and I spent the night leaning over the console."

After the birthday gig at Porchester Hall in London, the cast and crew of the *On An Island* tour made their way from Germany to France and Italy before North American dates in New York City, Toronto, Chicago, Oakland and Los Angeles. Gilmour's touring band includes keyboardist/singer Richard Wright (who sang the lead on Pink Floyd's first single "Arnold Layne," which was performed for the first time since 1969), guitarist (and Gilmour's co-producer) Phil Manzanera, bassist Guy Pratt, keyboardist Jon Carin and drummer Steve DiStanislaio.

The jump across the pond was made a bit easier by the fact that they carried the same gear in the States as they did overseas. "We are both running [DiGiCo] D5s," Roden reports. "Colin has the same [Turbosound] Aspect P.A. and I've got the same Turbo wedges [TFM-420s and TFM-450s]. Of course, the amps are different and the power is different, but in theory, it's the same gig. At the end of the day, it was the most sensible option, because at least there is some consistency to what the musicians see and hear coming off of the back of the cabinets."

At FOH, Norfield is using a D5 and out-board gear that includes a TC Electronic M6000, TC's D-Two and three Yamaha SPX990s. "That's about it," he says. "My view of all gigs is simplicity, because the simpler you make it, the more you can concentrate on mixing and not messing

around with other stuff."

Indeed, other than standard delays and reverbs that come from the players themselves, the only time that Norfield played up an effected track was when Gilmour sang "Coming Back to Life" and a delay was used in the first chorus. He doesn't believe it's his job to alter the band's sound to his ear. "Everything comes from the band, and to mess around with it too much would change the thing it's about. The dynamics are coming from the band, and I deal with it as it comes. I just put it in its right place, but the actual essence comes from the band. It would be wrong for me to try and change that."

The Turbosound Aspect system was selected before rehearsals started. "David told me he didn't really like line array systems, so my options were really cut down because that's all there was out there," Norfield says. "We used a Turbosound Flashlight/Floodlight combination on the last tour, and we went down and did an A/B comparison with the new stuff. It's nice. The high end is lovely and the top is very sweet. It's working very well."

Norfield went conventional while miking the band, putting a Shure Beta SM91 and Beta 52 on kick, Sennheiser 421s on the toms, an SM57 on snare, and Beta 98s on the Roto Toms; hi-hats are miked with an SM81, with AKG 414s on overheads. Shure KSM-32s are on guitar cabinets (for Gilmour and Manzanera). The bass inputs are direct, and the pair of Leslie cabinets (both Wright and Carin each use one) are miked with a 421 on the bottom of the Leslie and a 57 on the top. The sax microphone is also a Sennheiser 421. All of the vocal mics are Neumann KSM-105s.

Norfield has a stock of dbx 166 compressor/limiters, dbx 160As and Drawmer DS-201 noise gates, but they are used sparingly. "The more open the better," he says. "I'm pretty well known for open mixing and I try not to do too much. There's not much compression, because everyone is singing—nobody's really screaming."

Roden selected a D5 on monitors because he looked at the tour and realized, "big input, no room. I think we're both using the digital formats because of the limitations we've been given. It would not have been my first choice. If we were doing stadiums or arenas, I would probably have been using a couple of Midas H-3000s, but we just don't have the space."

The power of the D5 also gives a number of options, yet Roden points out he's mixing in a very analog way. "I'm not using any of the preset scenes. The basic thing is exactly the same on each song, but because of way they play, Rick [Wright] might get excited one night and you'll get loads of level off the Leslie, and one night he might not be quite so excited. You can put yourself in the ballpark, but it's not a machine playing. They are human beings and they make mistakes and we make mistakes and hopefully they make more than we do," he says with a laugh.

There was no talk of using personal monitors on Gilmour. "What I do for David is very simple: vocal, acoustic guitar, a couple of cues here and there," says Roden. "When he plays the guitar, he puts himself in a spot that's sweet for him, where he can hear everything he needs to hear, and plays—letting the band do all the work. He finds that sweet spot." The only person using a personal monitor—and only in one ear—is the drummer.

Of course, the use of wedges has caused Norfield some worry at FOH. "I did mention my concerns at rehearsal about volume at some of the venues, but after that it's up to me to deal with it," he explains.

As the clock ticks closer to showtime, Roden and Norfield think about the impact of this tour as well as Gilmour's catalog of songs on the fans. "When we were in Toronto, there was a woman who cried through every Pink Floyd song that David played," Roden remembers.

"People go right back to where they were when they heard these songs," Norfield adds. "When 'Wish You Were Here' comes on, people go back 30 years. They aren't here anymore." ■

David John Farinella is a San Francisco-based writer.

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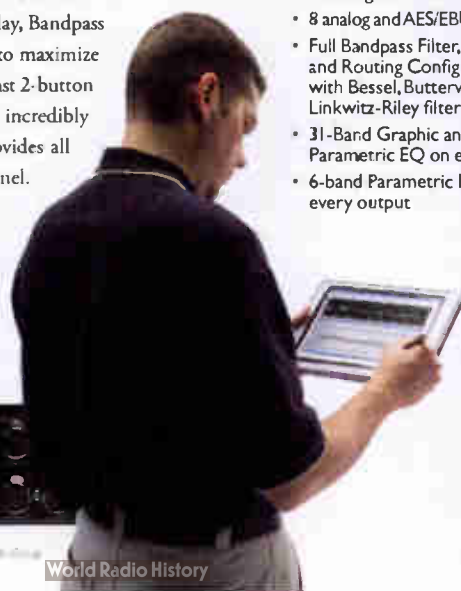
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RSA Audio Services

Growing With the Times

For more than 20 years, RSA Audio Services of Edgewood, New York (www.rsaudio.net), has been like a goldfish in a bowl: The goldfish grows, you get it a bigger bowl. It grows and grows some more, and it's ready for a 20-gallon tank.

RSA started, like many live sound providers, as the little spin-off business of a couple of bandmates. "We were working in the clubs, doing our best not to have to go find a nine-to-five job," recalls RSA co-owner/president Leon Esker. "The band dissolved, and we were left with a bunch of equipment, and me and a buddy started renting it out to other bands. There were a lot of people playing music in Long Island at the time, but not a lot of people doing P.A. So, we were able to make a decent living right off the bat."

A couple of years later, Esker's bandmate went his own way, and Esker took on another partner, Joe Light. "We rented a small, 2,000-square-foot warehouse, put the equipment in it, and all of a sudden we were a legitimate company—not just a couple of kids with equipment," Esker says. "Little by little, we started getting more legitimate shows in theaters and working with some smaller national acts."

Long before today's compact digital consoles and off-the-shelf line arrays became de rigeur, RSA developed an established client base and a reputation for full service: system design, manufacturing, installation, support and engineering when needed. "Back then, the industry was very different," Esker says. "A big part of what our company brought to the table back then was to manufacture and package equipment. Twenty-five years ago, you didn't have the packaged systems that exist now. We designed and manufactured a lot of our own stuff back then—all the rigging and the packaging that goes along with it."

"The older, more established companies that were around in the early '80s like Maryland Sound, Sound Image or Clair Bros., today they've moved toward manufactured speaker systems, because that's what people are looking for," he continues. "This affords a lot of opportunities for young companies, too, to get into the business. You can just go out and buy the tools that you need and get going, but what might seem like an easy way to get into the business is deceiving, because if everybody's getting into it that way, then they're not really bringing anything to the table that someone else can't also bring. We were lucky that 20 years ago that wasn't an option, so that protected us from competition."

Esker's proprietary P.A. system occasionally still gets jobs these days, but more in-demand are the JBL Vertec VT4889 line arrays RSA carries. "The system is extremely smooth and very easy to use," Esker says. "It's very easy to rig in terms of alignment."



RSA co-owners Joe Light (left) and Leon Esker

For most larger productions, Esker sends the Yamaha PM5D console, which he says has quickly become "very popular—it's probably going to be the workhorse as far as digital boards go." For smaller-budget events, the company offers less-pricey, lighter-weight Soundcraft MH3 boards. And, of course, there are racks and racks of outboard gear. "We've amassed an inventory of everything," Esker says, "the Lexicon gear, dbx, Drawmer, Klark Teknik...That's one place where a particular client is going to get particular."


RSA supports mainly one-offs regularly at major venues such as the Beacon Theater, Roseland Ballroom, Jones Beach Theater, Hammerstein Ballroom and the Nassau Coliseum. Recent concerts have featured The Black Crowes, Seal, Melissa Etheridge and Mary J. Blige. When we spoke, Esker was getting ready to mobilize gear for the Bamboozle 2006 festival to be held May 6 and 7 at the Meadowlands complex, where dozens of bands, including headliners Fall Out Boy, Taking Back Sunday and AFI, would appear on five stages. "Clair Bros. is doing two stages, and we're doing three," Esker says. "We'll also be in Battery Park this summer; they do a whole concert series out there that also will get started in May."

Gradually, RSA has outgrown not only its original 2,000-square-foot home, but also a second 5,000-square-foot space. Today, the company operates out of an almost 10,000-square-foot warehouse. Esker and Light employ ten full-time techs, including 20-year company man Mike Murphy, and they'll pick up as many as ten freelancers during the busy summer months. "We put on about ten shows during the course of a week, maybe three or four systems doing two or three shows each. We've got a niche market that is growing year after year." ■

Barbara Schultz is an assistant editor at Mix.



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ILAs can be bi-amped or tri-amped, and include rigging hardware. An optional subwoofer is offered.



LINK SB SNAKE SYSTEM

The SB Stage Box audio snake system from Link USA (www.linkusa-inc.com) is designed for applications using a single mixer. Stage extensions allow for separate I/O channels if the user runs one cable from the stage to

the mixer (black color for mixer in; red for mixer out). Built from 15/10 steel and finished in black-dust ebony, the SB features Amphenol XLRs, individually shielded Eurocable multipair cable and a 160cm fan out. Systems are available from eight to 48 channels in a variety of I/O combinations.



E-V TOUR-GRADE AMPS

Designed to provide high power and intelligent control in a lightweight package is the Tour Grade Series from Electro-Voice (www.electrovoice.com). Model TG7 and TG5 amps are based on three-stage Class-H grounded bridge design. From a 2U housing that's less than 15 kg, they provide 3,500 watts/channel (TG7) and 1,900 watts/channel (TG5). Both feature five-step fans and slots for IRIS-Net™ DSP modules to offer transparent network control.

STUDIO TECHNOLOGIES SPLNET SYSTEM

Studio Technologies' (www.studio-tech.com) SPLnet system provides a set of tools to measure, display and respond to sound levels for level compliance. Optional software allows level data to be stored, or users can view real-time level data using an integrated Java applet. In large venues, multiple applets can display the sound system level at multiple points—especially useful in situations where crowd size and weather conditions change during an event. The system can also trigger other equipment and serve as a “confidence monitor” for unattended venues, including remote monitoring over the Web.



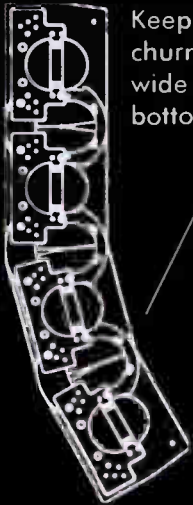
XTA EXPANDS DP4 LINE

XTA (dist. by Group One, www.g1limited.com) offers new I/O configurations based on its DP428/DP448 audio management systems. The series offers two or four inputs, with up to eight outs, and comprises the DP424 (2-in, 4-out), DP444 (4x4), the 4x6 DP446 and the 4x8 DP448, formerly known as the DP428. Each has a 28-band graphic EQ, eight filters, built-in delay and multiple 48dB crossover slopes. All outputs feature polarity switching, HP/LP filters, delay and up to nine filters. Any input can be routed to any combination of outs, and I/Os are phase-adjustable in 2-degree steps. The crossover offers Bessel, Butterworth and Linkwitz-Reilly selections in 6/12/18/24/48dB-per-octave slopes. Two-stage RMS and Clip/D-max limiters are available, with look-ahead for the clip limiter attack time. The series supports internal sample rates up to 96 kHz and external sample rates to 192 kHz. Options include AudioCore PC remote software for controlling one or 128 DP4 Series processors and a Walk-about Kit for wireless system tuning from anywhere in the venue.

EQUATION AUDIO DS-V9

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turntable rumble, wow or cassette tape flutter made it seem as if I had time-traveled to Abbey Road studios and stumbled into a session in progress. Now, everyone has access to the same playback quality we have in the control room. So maybe we should take advantage of it?

THE RAW AND THE COOKED

That early desire to get closer to the performance was, at the time, all I had. My turntable maintenance piece borrowed heavily from those early experiences. It also attracted the attention of Michael Fremer, the senior contributing editor for *Stereophile*, editor of *musicangle.com* and a hardcore vinyl enthusiast. It's one thing to be able to play records "just for fun," but if the grooves are treated as if they are the only master, the quest is on to minimize, if not subtract, as many of the idiosyncrasies as possible.

There aren't many people who are seriously knowledgeable about analog data-retrieval devices (record players). Fremer has made a profession out of getting the most from the grooves: whether he's tweaking the mechanics and auditioning cartridges or minimizing jitter and auditioning converters. The next step is finding "good" recordings—you know, the handful that everyone plays at tradeshows to show off their gear.

LES BITS

Many a professional career in this industry started with tinkering; some tinkerers became after-market specialists, while others became manufacturers outright. Bob Katz falls into more categories than that; he

is, after all, *the master* of his digital domain. I ran into him in Montreal. We were both there at the request of The Association for Professionals In Audio (www.aspraudio.org)—me to expand upon and provide sonic examples of my "Not a Mic Preamp Shootout" column.

Katz's presentation centered on the obvious benefits of relaxing mastering levels. He suggested that our industry adopt a calibrated monitoring approach similar to that used by film mixing engineers. By establishing a reference level to which monitoring and metering are calibrated (and to which reference recordings can be fairly assessed), it will be easier to prove to a customer that louder is not better. For a CD honor roll that lists examples above and below a handful of reference discs, visit www.digido.com.

Adopting a common language would improve communication and awareness among both professionals and our clients. For example, we should use the term "coding" to describe all data reduction (MP3, m4a, etc.) and reserve the term "compression" strictly for dynamics processing.

The examples Katz provided were spot-on and remarkably diverse, ranging from Black Sabbath to Marc Anthony, rap to salsa. He also did a simple subtraction—CD minus its coded offspring—to show just how frightening some MP3s can be *when* the source for the MP3 has been aggressively processed. I have a feeling that there will be a whole new type of hearing loss when the iPod generation rides that soft-knee into mid-life so that it qualifies for AARP membership.

SOME THINGS NEVER CHANGE

We had volume wars in the '60s, just like now. A.T. Michael MacDonald (not the singer, but the recording and mastering engineer at www.algorhythms1.com) recently asked whether jukeboxes had automatic gain control (AGC) to even out the discrepancies between disc levels. Indeed they did. But that didn't stop Epic Records from making some of the most awfully loud 45 rpm records, one of the most egregious offenders being Lulu's "To Sir With Love," with the Dave Clark Five's "Catch Us If You Can" also in that clubhouse.

Albums had much more conservative levels and were always pressed on vinyl. But 45s were pressed on both vinyl (soft and flexible) and polystyrene (hard and brittle). These days, excessive dynamics processing makes the worst MP3s. Back then, employing distortion to make louder records backfired when that record was pressed on polystyrene and played with a non-compliant (stiff) cartridge. The resulting additional distortion—of a stylus unable to negotiate the obstacle course—became permanent.

My point to this historical potpourri is simply to point out that *poorly* maintained, cheap consumer playback equipment—turntables, albums and bad cassettes—were the major obstacles in the reproduction equation. With those variables gone, we really should be taking advantage of current sound system capabilities. ■

Eddie would like to especially thank Chantal and Francois of www.aspraudio.org for booking him up with Bob Katz.

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NAB 2006

HD DEVELOPMENTS PUSH INTEGRATION, WORKFLOW

By the Mix Staff



Fairlight's HD DREAM Factory combines mixing, audio editing and nonlinear video.

Squeezing through the record-setting crowd of 105,046 at this year's NAB, the term on most people's minds was probably "compression." However, the real watchword of this NAB was "integration," with manufacturers looking for ways to improve workflow and users looking for means to move more channels of audio around faster, with greater efficiency. HD production is here to stay, and digital television is a reality, so there was a sense that the time to get serious about sound has arrived, which is great news for the entire audio community. We scoured NAB's gargantuan exhibit halls looking for audio excitement, and there was plenty to be had. Here are a few highlights.

CONSOLES

In earlier years, big boards at NAB snagged most of the headlines. This year the push was bigger feature sets and increased power from smaller console packages. Calrec's (www.calrec.com) new Bluefin technology lets existing Alpha owners upgrade from 226 to 480 (mono equivalent) channels by installing a couple DSP cards. Bluefin puts full EQ and dynamics on all channels, and can provide 78 full 5.1 surround sound

channels, eight 5.1 groups, four main outs, 48 multitrack outs and 20 aux outs. Who wants to buy a new console just to get more power and speed?

Fairlight (www.fairlightau.com) introduced a comprehensive HD production/encoding suite for audio finishing for HDTV and film. The HD DREAM Factory comprises a dual-bay Constellation-XT large-format mixing console and Fairlight's Pyxis HD nonlinear video system—an integrated platform for recording, editing and mixing to picture. The Constellation-XT multiformat mixing system is expandable up to 240 channels into 72 buses, with scalable DSP, integrated disk recording/editing and more than 80 third-party plug-ins. Pricing is \$99,950.

Under new ownership, SSL (www.solid-state-logic.com) has made a huge turnaround, with many new products, including the second generation of its popular AWS 900—the AWS 900+ shown at Musikmesse 2006. MORSE (Modular Resource Sharing Engine) expands SSL's C100 broadcast mixer with modular I/O, stageboxes and router hardware, concentrating audio I/O and router matrices for simple to large-scale applications. Its expandable and optional PC control software provides smooth workflow.

Three banks of 10 faders on Studer's (www.studer.ch) compact Vista 5 console can access up to 1,700 channels. The one-knob-per-job surface and integration of the rotaries into the TFT screen make it intuitive and easy on the eyes. Meanwhile, fellow Harman company Soundcraft (www.soundcraft.com) showed its Vi6 large-format digital board, which we saw at NSCA the month before.

Euphonix (www.euphonix.com) de-

moed new features of its System 5. Now with Apple as part of the EuCon protocol, Logic Pro 7 can be controlled along with Pro Tools and other third-party DAWs. DSP hardware and plug-ins. Other big news? Euphonix's MC Controller is now available as an "insert" for existing System 5 boards. Essentially, it's a EuCon Hybrid that allows DAW integration to existing System 5 users through a pop-in MC controller. Nice indeed!

Placing more than 1,000 DigiDesign (www.digidesign.com) ICONs in the past two years makes a serious statement Digi previewed Pro Tools 7.2, adding significant power to its mix platform, including VCA-style grouping, pan groups, plug-in parameter linking, support of third-party paddle controllers, SignalTools level and phase metering (up to 7.1) and more. Also new? A JLCoooper-designed Surround Panner Option for ICON D-Command and Pro Tools HD systems has a touch-sensitive joystick and knobs for individual parameter control. It's \$1,695, and ships in Q3 2006.

Not all console news involved big-money designs. The new IF-SM/DM card for Tascam's (www.tascam.com) DM-3200 essentially brings the power of its DSM-7.1 surround monitor controller to this affordable digital console. And the new Universal Binary drivers bring Intel-based Mac compatibility to Tascam's USB and FireWire interfaces, including the FW-1082. This combo audio interface and control surface can function as a fader/edit controller for Final Cut Pro and as a MIDI control surface in Motion for real-time effect control and color correction. It is also compatible with most DAWs.

MACKIE
ONYX 800R ANALOG MIC PREAMP WITH 192kHz DIGITAL OUTPUT



RIVALS THOSE TWEAKY, ESOTERIC, SNOBBY, ULTRA-PRICEY MIC PREAMPS... EIGHT TIMES OVER.

When you shell out thousands of dollars for a "boutique" studio microphone preamp, you should expect a tight, focused high-end, superior ambience retrieval, detailed bass octaves, and a highly articulated midrange. Not coincidentally, that's what you also get with Mackie's new Onyx 800R Eight-Channel Premium Microphone Preamp, eight times over—and at a decidedly less than boutique price.

The no-compromise Onyx 800R boasts all-new circuitry delivering 123dB dynamic range and an amazing 0.0007% THD. It also comes standard with high-quality multi-format

24-bit/192kHz digital outputs, as well as tweaky features like a Mid-Side Decoder and Variable Mic Impedance control, which let's you "tune" the preamp to get the most out of any microphone.

So how does the 800R sound? "Classy and versatile," says *Sound on Sound*; "Modern, clean and accurate," raves *Tape Op*; and "Extremely quiet and very revealing," according to *Resolution*. We couldn't have said it any better ourselves.

Find out more at www.mackie.com/onyx800r, or visit your local Mackie dealer to audition the Onyx 800R for yourself.



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PRODUCTION ESSENTIALS

NAB just wouldn't be NAB without some interesting new mics. Beyerdynamic's (www.beyerdynamic-usa.com) MC 840 large diaphragm mic features a double-diaphragm capsule, five polar patterns and low-noise electronics. Retail: \$1,695. DPA (www.dpa-microphones.com) introduced an ingenious little rubber pad that turns its great-sounding, 4061 mini-capsule mic into a boundary mic. Invented for boardroom, stage and low-profile applications, the little pad should also be perfect for tucking into a kick drum.

New mics from Holophone (www.holophone.com) make surround recording more affordable than ever. The 5.1 H3-D mic looks much like its higher-end H2-Pro, but uses proprietary capsules (instead of DPA) and is \$1,695. Holophone also debuted its H4 SuperMINI, a camera-mount unit about the size of a tennis ball that comes with a real-time encoder, letting the user record an encoded feed directly to any 2-channel device.

Zaxcom's (www.zaxcom.com) big emphasis on digital wireless has paid off again this year with the release of the TRX910 series transceiver (combo bodypack transmitter/IFB receiver) with timecode. Besides a TC feature, the TRX901 records .WAV format files simultaneously to a built-in SD memory card, so if the wireless gets stomped, you still have audio. Meanwhile, the ZFR100 recorder will record broadcast-quality .WAV or MP3 directly to a 2-gig Flash card. It includes a full-featured timecode reader/generator. The mono version is about \$1,000, and the stereo version is about \$1,500.

Sound Devices (www.sounddevices.com) announced two additions to its 7 Series line of portable digital recorders: the 702 and 702T. These 2-channel recorders share the sound quality of the successful 722 and 744T digital recorders. The 702 and 702T (with timecode) are Compact Flash-only recorders. The 702 and 702T retail at \$2,175 and \$2,650, respectively.

Certified Hits

NAB'S TOP 10 AUDIO PRODUCTS

Calrec Bluefin

Digidesign Pro Tools 7.2

Fairlight HD DREAM Factory

Holophone H4 Mini

SADiE V5.5

SmartSound SonicFire Pro 4

SRS CSE-06P Portable Circle Surround Encoder

Studer Vista 5

Tascam DM-3200/IF-SM/DM card

Zaxcom TRX901



Studer Vista 5 can access up to 1,700 channels from a compact frame.

DAWS, SOFTWARE AND BEYOND

Besides improved automation and ICON support, Digidesign's Pro Tools 7.2 includes enhanced capabilities for editing video (working with multiple video clips, tracks and playlists), a destructive record mode for punching into mix tracks without creating additional files, streamlined Avid-to-PT workflows and support for seven different field recorders. Slated for release in the second half of 2006, the \$199 upgrade is bundled with a lite version of Virtual Katy 2 conforming software. In other news, Pro Tools LE 7.1.1 starts shipping next month with Intel-Mac compatibility.

Virtual Katy (www.virtualkaty.com) audio post software integrates Pro Tools and Avid editing systems, greatly accelerating the post process. A quantum leap forward in processing speed, tracing and comparison engine techniques, the new VK2 version automates painstaking conform sessions for Pro Tools editors.

A new member of the Pro Tools control family is Aphex (www.aphex.com). Its popular 1788A 8-channel mic preamp is now directly controllable from within Pro Tools, or with the use of a hardwired remote or Mac/PC software.

Previously available only on SADiE and Pyramix, CEDAR Tools 3.2—a new plug-in suite for Pro Tools PC from CEDAR (www.cedaraudio.com)—introduces the high-end capabilities of CEDAR Cambridge and CEDAR Retouch v3 to the Pro Tools world. The restoration modules for the Pro Tools HD and LE (PC) platforms—Auto Declick, Manual Declick, Decrackle and Dethump—join Auto Dehiss, Delip and Retouch, all available as AudioSuite plug-ins.

SRS' (www.srslabs.com) Circle Surround TDM Pro 2.0 plug-in for Pro Tools 7.0 (and above) includes CS encoding/decoding along with Xtract up-mixing, creating realistic 6.1 surround mixes from mono and stereo material. The SRS CSE-06P Portable Circle

Surround Encoder is a belt-pack encoder for preparing 5.1 or 6.0 audio stored to 2-channel recorders/cameras, and has an SRS Headphone PRO surround monitoring mode, for listening to 5.1 mixes over conventional headphones.

SADiE's (www.sadie.com) Version 5.5 software features a radical user-interface improvement, with a coloring scheme to ease identification of individual streams and groups. SADiE also debuted its PCM-H16, a beefy and affordable DSP engine with I/O. Features include 16 channels of AES and high-quality A/D and D/A inputs and outputs, 64 streams of 24-bit/48kHz audio with real-time crossfades and punch-ins, and DSP processing power that's similar to its flagship PCM-H64.

Supporting Windows and Macs, SmartSound's (www.smartsound.com) SonicFire Pro 4 software helps users create soundtracks that are custom-fit to videos in just minutes and introduces Mood Mapping. From a Mood Map track, changes in the score's mix are selected, each having individual instrument layers set to different levels, depending on the desired feel. The software includes thousands of royalty-free tracks.

Dolby's (www.dolby.com) DP600 Program Optimizer offers intelligent audio analysis and automated loudness correction for most common broadcast media file/audio formats. Targeted for cable/satellite/IPTV/terrestrial TV broadcasters using a file-based infrastructure and workflow, the DP600 provides a consistent audio experience across all programming.

Obviously, there was more at NAB; visit www.mixonline.com for expanded coverage of product hits, and watch for ongoing coverage in our gear columns. Meanwhile, NAB returns to everybody's favorite desert paradise next year, April 14-19, 2007. See you there!



NEW

POWERCORE PCI MKII /
POWERCORE UNPLUGGED

POWERCORE EXPRESS

Who says all PCI cards are the same?

PowerCore Express is the latest member of the PowerCore family, a superior range of high-end plug-ins that run on tailor-made hardware. This new PowerCore PCI card supports PCI Express slots, and includes the same 14 high quality plug-ins as PowerCore PCI mkII. You can also create a custom PowerCore package by adding optional plug-ins to PowerCore Unplugged, the PCI card without bundled plug-ins. All 3 "PCI flavors" give you access to all optional TC processing tools like the VSS3 Stereo Source Reverb and MD3 Stereo Mastering known from TC's flagship System 6000, as well as a wide range of plug-ins from 3rd party developers like Sony Oxford, Access and TC-Helicon. PowerCore integrates with virtually any VST, AU and RTAS* based digital audio workstation for Mac and PC.

* Via the VST to RTAS adapter from FXpansion (optional)



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World Radio History

Tools of the Trade



GENELEC 8200/7200 SERIES DSP MONITORS

Genelec (www.genelec.com) has jumped into the DSP speaker control game with the introduction of its 8200 Series bi-amplified active monitors and 7200 Series active subwoofers. All employ the company's proprietary DSP (Digital Signal Processing), GLM™ (Genelec Loudspeaker Manager software) and AutoCal™ (Automated Calibration software) technologies. The 8240A (\$1,595 each) features a 6.5-inch woofer and ¾-inch tweeter with a free-field frequency response of 48 to 20k Hz (±1 dB). Peak SPL per pair is 115 dB driven by a pair of 90-watt amplifiers for each driver. The 8250A (\$2,550 each) offers an 8-inch woofer and 1-inch tweeter set with a free-field frequency response of 38 to 20k Hz (±1 dB). Peak SPL per pair is 120 dB, driven by 150W LF and 120W HF amplifiers. The 7260A (\$2,950) sub features a single 10-inch proprietary driver with a 120W power amplifier. The monitors can operate in one of three modes: stand-alone, using settings from the onboard DIP switches; GLM computer-assisted, where the DIP switches are bypassed and controlled by GLM through the network; or stand-alone GLM, where each speaker stores its own settings independent of the network.

NEUMANN TLM49 MICROPHONE

Building on lineage provided by the legendary M49 microphone from the 1950s, Neumann (www.neumannusa.com) has created the TLM49 (\$1,699), a

large-diaphragm cardioid mic optimized for vocal and speech recording. Like the original M49, the TLM49's high frequencies are more directional than lower frequencies; however, the pattern leans more to the hypercardioid (vs. straight cardioid) due to capsule construction. The capsule is the 34mm K 47, the same used in Neumann's U47 and M49. The sensitivity of the mic at 1 kHz into 1k-ohm is 12 mV/Pa, and it will take up to 110dB SPL with less than 0.5% THD.



SONOSAX MINIR82

Yes, it's true! Users can record eight tracks of high-quality audio to a box about the size of a digital camera. The MINIR82 from Sonosax (www.sonosax.com) records from 44.1kHz/16-bit up to 192kHz/24-bit audio on a Compact Flash card, and offers many other pro features including 0.1% pull-up/down, BWF file capability, metadata storage and 2x high-quality microphone preamps with limiter and LF cut, 2x line inputs, 8x digital inputs and full timecode functionalities.

PRIMERA TUFFCOAT WITH AQUAGARD

Had he been burning CDs at the South Pole, Ernest Shackleton would have loved Primera's (www.primera.com) TuffCoat with AquaGard, which promises to protect printed CDs and DVDs from runs, smudges or smears when exposed to rain, snow and spilled liquids. Discs can be printed with any inkjet CD/DVD printer and will remain legible even under the most dire of circumstances.

SMART LOOPS SAMPLE SETS

Three new drum sample sets from Smart Loops (www.smartloops.com) are available via download for use with Cakewalk's Dimension Pro sampler (Mac/PC) or any software sampler that can load WAV files. SL Acoustic Kit, SL Thunder Kit and SL Trap Kit (\$39 each, or \$89 for all three) provide the user with a complete drum kit, including toms, hi-hats, crash cymbals, ride cymbal, china cymbals, splash cymbals, cymbal chokes, cymbal rolls and cymbal swells. Each SL sample set includes multiple velocity layers and multisample mappings for Dimension Pro.

AUDIO EASE SPEAKERPHONE

The Speakerphone plug-in from Audio Ease (www.audioease.com) is perfect for those times when the user honestly wants something to sound bad (on purpose, of course!). Speakerphone emulates authentic speakers of any size together with their natural environments and will simulate a bad GSM connection on a busy sidewalk, a bullhorn with feedback and a helicopter overhead, or a 1952 rockabilly guitar amp in a recording studio. It will also add dial



tones, operators and static, and the user can select from a wealth of ambiances on either the caller's or receiver's end. With a click, the user can send anything from the sample-playback bay right to the cursor in a user's Pro Tools track. The user can call up one of the hundreds of carefully crafted and archived presets, or click on Show Controls and the whole dashboard slides out with the most minute detail.



AURALEX GREAT GRAMMA

Piling gear on Great GRAMMA is usually no way to treat a lady, but in this case, it provides excellent isolation of large instrument cabinets from the floor. The Great GRAMMA (Gig and Recording, Amp and Monitor, Modulation Attenuator; \$119) from Auralex (www.auralex.com) is an isolation platform that is 30x19x2 inches (LxWxH) and exceeds the 300-pound load capacity of the original GRAMMA. The new system comes complete with a carrying handle, road-ready carpet, Studiofoam Wedges (underneath) and PlatFoam (underneath).

AMS NEVE 8803 EQ

AMS Neve (www.ams-neve.com) expanded its 88 range of outboard gear with the 8803 (\$1,850) dual-channel equalizer and filter. The single-rack unit uses EQ circuits based on the classic Neve 8108 design with enhancements to the frequency and Q ranges. Signal flows from the balanced inputs and ± 20 dB of trim to two 12dB/octave filters. The highpass filter has a variable corner frequency from 25 to 300 Hz, while the LPF offers a range of 3 to 15 kHz. Four bands of EQ offer selectable shelving and switchable Q on high and

low bands, and continuously variable Q on the mids. Frequency selection is continuously variable on all bands, with ranges of 33 to 440 Hz, 120 to 2k Hz, 0.8 to 9 kHz and 1.5 to 18 kHz. The 8803 forms part of a family of products with the 8816 summing mixer and 8804 fader pack. The 88 range features recallable settings, a USB port connecting the unit to either a PC or a Mac, and software used to store and recall settings.

FOCUSRITE LIQUID MIX

Mixing liquid and electronics is usually a bad thing, but not with the Focusrite (dist. in the U.S. by American Music & Sound, www.americanmusicandsound.com) Liquid Mix (\$999). The versatile, 32-channel

hardware device with onboard DSP can host 32 classic EQs and 32 vintage compressors selected from a pool of high-quality vintage and modern-day classics. The units can be mixed and matched within a processor; for instance, a 7-band EQ can be constructed from separate EQ sections in each of the unit's 32 channels. Each channel appears as a separate VST/Audio Units/RTAS effect within the sequencer and will work within all major applications, including Pro Tools. Liquid Mix's DSP is housed within a desktop controller that connects to a computer via FireWire, which also provides bus power. Users can control each channel from the desktop unit or from within a sequencer using a GUI that functions like a plug-in.

An optional expansion card (sold separately) increases the number of available channels at higher sample rates. The Mac version is shipping now, with a PC version soon to be released.

AUDIO-TECHNICA AT3060

Audio-Technica (www.audio-technica.com) has come up with an innovative and price-busting mic in its 30 Series: the AT3060 (\$499) phantom-powered tube microphone. The mic operates on standard 48V phantom power, eliminating the need for a separate power supply and cable, and boasts a large-diaphragm cardioid condenser element, offering high sensitivity and low overall noise levels. The AT3060 ships with an AT8158 shock-mount and a protective pouch.





ADAM A7 STUDIO MONITOR

For the first time, the words "ADAM Audio" (www.adam-audio.com) and "below \$1,000" can be said in a single sentence. The A7 two-way near-field

studio monitors (\$999 a pair) feature the company's A.R.T. (Accelerated Ribbon Technology) folded ribbon tweeter with a state-of-the-art 6.5-inch carbon-fiber woofer powered by two 50W amplifiers. The front panel features a power switch and detented volume knob, while the rear panel offers controls for tweeter level and two high- and low-frequency shelving filters. Input is provided via balanced (XLR) and unbalanced (RCA) connectors.

SOUNDTECH LIGHTSNAKE USB

This innovative product from SoundTech (www.soundtech.com) allows users to plug their guitar, bass, keyboard or other electronic instruments directly into a PC or Mac without using a sound card. The cable features an imbedded A/D converter and signal booster, and features simple "live when lit" operation, a 1/4-inch-to-mini adapter and 1/4-inch male-to-dual-1/4-inch female splitter. It is compliant with USB 2, and works with Win 98 SE/Win ME/Win 2000/Win XP and Mac OS 9/X without an additional driver; driver software is included for older non-plug-and-play-compliant computers. Price: \$6.

M-AUDIO SPUTNIK

M-Audio (www.m-audio.com) has launched another high-end product into orbit with its Sputnik (\$699) tube microphone. The Sputnik features a military-grade 6250M vacuum tube, 3-micron evaporated-gold Mylar diaphragm, solid brass construction, and selectable cardioid, omni and figure-8 polar patterns. Borrowing a design idea or two from vintage mics, Sputnik has its tube mounted upside down to facilitate shorter connections that in turn make for more controlled impedance and less stray capacitance. The mic employs a socketless design, eliminating the potential for impedance mismatch, signal deterioration and contact corrosion, and features a precision-machined, solid-brass back plate that yields much greater crucial rigidity. To ensure consistent operation throughout the production run, each tube is handpicked and then burned in for a week.



Upgrades and Updates

VOSGAMES (www.vosgames.nl) has released **Version 5 of Boom Recorder**, a Mac OS X-based software field recorder specifically designed for use on a film set or during live performances. It can record up to 32 channels from a high-resolution audio interface and is now Universal Binary-compatible...**Merging Technologies** (www.merging.com) now offers **V. 1.2 software for its VCube SD and HD-2K** hard disk video recorder/player systems. The upgrade is free of charge to all users, and offers new features such as support of MPEG-2, playback of HD video, and easy adjustment of picture format, frame rate, pixel aspect ratio, synchronization and reference signals in just two mouse clicks...**MOTU** (www.motu.com) is now shipping a **PCIe version of its PCI-424**, allowing users of MOTU's flagship PCI-based recording system for Mac and PC to take full advantage of today's fastest PCIe-equipped Macs and

PCs...**Spectrasonics'** (www.spectrasonics.net) **Stylus RMX is now supported on Apple Computer's new Intel Macintosh platform**. The new version of Stylus RMX supports all Mac OS X Universal Binary VST and Audio Unit hosts, including Logic Pro 7.2, GarageBand 3, Ableton Live 5.2 and others...**Making diamonds even more valuable, Waves** (www.waves.com) has added **Q-Clone to its Diamond bundle**, adding \$1,000 of value to the bundle with no additional charge. The company has also announced the availability of Universal versions of its entire line for Intel-based Macs...**Speaking of drivers, M-Audio** (www.m-audio.com) is now offering support for **Apple's new Intel-based Mac computers** for its complete line of FireWire- and USB-compatible peripherals...**Live recorders, film and video post Pro Tools users will want to check out the previously PC-only reNOVator from Algorithmix** (www.algorithmix.com).

The high-resolution processor can remove unwanted disturbances from audio tracks without audibly affecting the original program, even if the impairment overlaps desired material...**Steinberg Media Technologies** (www.steinberg.net) has updated the **EuCon adapter module** for its Nuendo media production system to V. 3.2. The new version further extends the Nuendo functionality that can be directly controlled by Euphonix's MC and System 5-MC products. The best news is that it is available at no cost for registered owners of the Nuendo EuCon adapter...**Prism Sound** (www.prismsound.com) has launched a **major update to its dScope** audio test system software. Key features include dB SPL units, measurement mic sensitivity and frequency-response calibration, impulse response by MLS and swept-sine method, and dynamic LS impedance measurement via an external ballast resistor in series with EUT. ■

DM-3200 32-channel digital mixer/controller and the X-48 48-track digital multitrack recorder.

Fortunately, they use their powers for good, not evil.

DM-3200

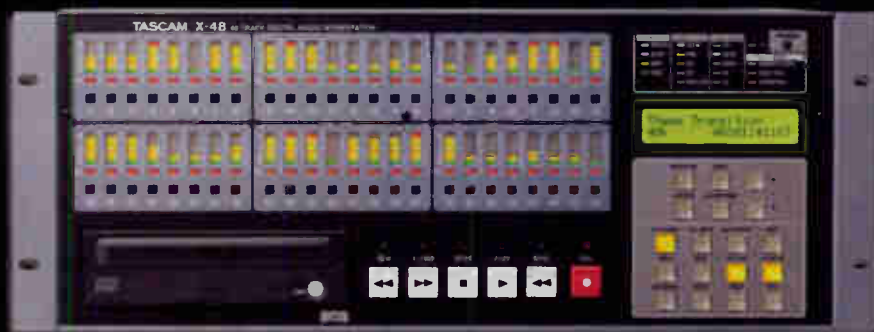
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- 16 analog mic/line inputs with new hybrid/discrete mic pres for rich, detailed sound quality
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- Optional 24-channel FireWire expansion card turns the DM-3200 into the ultimate audio interface for your computer
- Two built-in effects processors with TC Electronics reverb processing



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TASCAM 

Royer R-122V Tube Ribbon Mic

Legacy Design Enhanced With High-Output/Low-Noise Circuitry

At the past five or so AES shows, Royer's booth featured a mic with a larger-than-normal gold body. It was introduced as the company's one-off tube ribbon mic—designed only for test use and as a trade show head-turner. When I asked David Royer if it would ever be released, I always got a response that was hazy at best.

Well, it's finally here. The R-122V uses the same engine as Royer's popular R-121 and R-122 mics, based on a low-mass, 2.5-micron thick, 99.99-percent pure-aluminum ribbon and neodymium magnet structure. This is coupled with a triode-configured cathode-follower circuit using a military-grade 5840 tube and a Jensen 1:1 ratio transformer, providing an electrically isolated, fully balanced output signal. The body has been refined from its humble beginnings, making it look more like the slim, traditional design that Royer fans are used to.

INSIDE AND OUT

The R-122V has a dull satin-nickel finish; matte-black chrome is an option. The 1 inch-wide body is a bit more than eight inches long and weighs a mere 10.9 ounces. The kit comes with a multipin connector that screws to the mic and an XLR that attaches to the hefty power supply. From the supply, a standard mic cable connects the mic to the preamp of your choice. Like Royer's other active ribbons, the circuit eliminates the worries about proper impedance matching at the mic preamp, allows long cable runs without negative impact and boosts level enough so that the traditional noise-floor issues associated with the genre are not troublesome. In other words, any old mic preamp will work, although it's recommended you use something clean and beautiful with this \$2,995 mic.

The supplied shock-mount uses the "follow the logo" design used in other Royer models, meaning that once the mic is properly slid into the mount, wherever the logo points is on-axis. Ports on the side of the mic allow the tube to breathe.

IN THE TRENCHES

I had a matched pair of R-122Vs for this

review. I first tried the mics on a drum kit during two sessions, using the pair as overheads, room mics and as knee-highs. I must admit I preferred them when used in the room where their color and transient response were less in evidence. My dream setup combined a pair of BLUE Bottles as overheads with the R-122Vs in the room about eight feet back from the front of the kit in a Blumlein pair. The combination of the brightness of the condensers with the Royers added to taste was a beautiful thing.

Next, I used them on a percussion overdub through a pair of Rupert Neve—designed Summit MPE-200 preamps. The percussionist was playing a Tumba Cajón drum, basically a medium-sized wooden box shaped like and mimicking a conga. The cajón family can have a very sharp transient, especially when played by a drummer who wears a ring. The R-122Vs were placed in an over/under Blumlein pair centered on the drum. They handled all the transients without a problem, yawning where a condenser would flinch. The ribbon's transient roundness was in evidence, especially when the drummer picked up the pace, producing deliciously warm and rotund peaks. The R-122V nicely tamed the sharp ping of a Vibratone, a metal tube with a hole in it that can be played with a rubber mallet or a stick.

The pair excelled when placed about 1 foot above the hammers of a Yamaha C5 piano, proving to be a bit brighter when compared to Royer's SF-24 active ribbon. It was simply luscious when put on a raging guitar amp and then a Leslie cabinet, producing a rich bottom end, smooth top and great grind when the Leslie was

pumping at full throttle.

The mics were also used to capture a vocalist playing acoustic guitar. Here, the vocal mic was pulled back about 18 inches from the singer while the guitar mic was closer. The pair worked very well together, with great isolation due to the ribbon's off-axis character. The high-end detail on both the vocal and guitar was beautiful.

RIBBONY SMOOTH

Anyone who has ever discounted a ribbon as too dull or limited for all but a few situations should check out the R-122V. I've reviewed quite a few ribbons, and this one has some serious chops on acoustic and electric guitars, percussion, piano and especially on vocals. I heard it used on two male vocalists and in both situations it enhanced the track, sat nicely in the mix without compression and captured a decent amount of top end.

In most situations, surprisingly, the usual woof associated with close miking is reduced, while there is a silky and uncharacteristically extended top end. The R-122V also offers a subtle compressed flavor, explained by David Royer as a bit of a crunch provided when the transformer that follows the

tube is hit hard.

Yes, it's pricey, but quality is always cheaper in the long run. This mic will have legs as long as you own it. It carries a lifetime warranty for the original owner and a 10-year warranty on the tube, and matched pairs are available at no surcharge. What's not to like about this one?

Royer Labs, 818/847-0121, www.royerlabs.com. ■

Kevin Becka is Mix's technical editor.



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From desktop studio to stage, the SOLO/610 and SOLO/110 are the go-anywhere essential preamp & instrument DI. Choose either the all-tube SOLO/610 for that silky vintage warmth or the SOLO/110 (from the mighty 8110) for lightning-fast transients, and sheer tonal versatility— ultra-clean to crunchy Class A. The SOLO series preamps will flatter the humblest to the most esoteric microphones with their own signature sound. The best news of all is that UA's innovative engineering and meticulous manufacturing mean you don't have to make a choice: you can afford both!



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Buzz Audio MA 2.2 TX Class-A Mic Pre

Versatile Model Offers Transformer-Coupled, Transformerless Outs

Buzz Audio might not be a familiar name to recording engineers in the U.S., but the New Zealand-based pro audio manufacturer has been cranking out high-end mic pre's, compressors and equalizers since its formation in 1985. The company's MA 2.2 TX dual-channel, solid-state mic preamp offers two outputs for each channel: one transformer-coupled, the other transformerless, and each provides a slightly different timbre.

LET'S BE UPFRONT

The rackmountable (1RU) MA 2.2 TX features the same front panel controls for each channel. A rotary gain switch delivers from 16 to 65 dB of gain in 41 steps. Five toggle switches execute the following functions: 20dB pad, phase reversal, input-impedance switching, 48-volt phantom power and channel mute. The channel mute function is particularly handy when the engineer is switching the MA 2.2 TX's phantom power on or off, as it prevents loud level spikes at the channel's output. The input-impedance switch toggles between 1.2 and 3k-ohm settings, producing subtly different timbres.

A clip LED for each channel lights to indicate that the output level is within 6 dB of overloading. An internal adjustment can be made to raise or lower the LED's level threshold for lighting. A power switch and associated status LED finish off the unit's front. All controls have a sturdy feel and positive action.

ON THE FLIPSIDE

The MA 2.2 TX's rear panel provides three I/O connectors for each channel: a female XLR for balanced mic input, female TRS for unbalanced output and male XLR for transformer-coupled (balanced) output. The preamp uses unbalanced internal audio paths, and the Sowter Type 8403-A line output transformers simply balance the output signals using a 1:1 ratio (providing no additional gain boost). On the preamp's unbalanced TRS outputs, the tip provides positive (hot) signal, ring carries signal ground, and sleeve provides chassis ground. A transformerless version of the preamp, the MA 2.2 (no "TX" in the model name) offers only unbalanced outputs using the same



type of connectors.

The MA 2.2 TX's maximum output level is +24 dBu—not huge, but respectable. The unit's THD (0.005 percent at 1 kHz), bandwidth (response out to 250 kHz at 64dB gain) and EIN (-133.5 dB, A-weighted) specs promise super-clean audio.

MUSIC TO MY EARS

My first test of the MA 2.2 TX was recording a sweet Santa Cruz Orchestra Model acoustic guitar, miked with a spaced pair of B&K (now DPA) 4011 condensers. The Sowter outputs rounded the guitar's transients and made the low-midrange band sound slightly veiled compared to what I heard using the transformerless outputs, which were superior for this application. Comparing results obtained by using the preamp's transformerless outputs to results achieved with my trusty Millennia HV-3D preamp, I was surprised that the Buzz Audio unit lent slightly more open mids and more sparkly and detailed highs. I can't remember the last time my HV-3D didn't win an A/B test with another pre on acoustic guitar.

Next up was the stellar Euro-American jazz quintet Labirynth. The MA 2.2 TX's Sowter outputs provided warm, wonderfully balanced kick and snare drum tracks. I always record traps using my SPL TD4 Transient Designer to fine-tune attack and sustain envelopes, and the combination of the TD4 and MA 2.2 TX's Sowter outputs was magical. The snare drum needed absolutely no EQ, while the kick (miked outside its closed front head) benefited from some boost at 4 kHz, but had all the bottom end I desired.

Recording male lead vocals using an AKG TLI1 mic (in omni mode) patched through the Buzz pre's transformerless output and then through my Universal Audio LA-2A, the sound was clear and articulate, but a bit too clinical for my taste. I much preferred the Sowter output's fuller, richer and more musical timbre for recording vocals.

Miking up my Roland MicroCube amp with a Royer R-122 ribbon mic, the preamp's Sowter output lent my '62 Strat's tone a wonderful balance of low-midrange body, upper-midrange crunch and beautifully tapered highs. I needed to boost my Apogee Rosetta's (A/D) trims to a +4dBu reference level of -12 dBFS (i.e., nearly max) to preclude the preamp's clip LED from lighting on peaks below digital full scale.

Next, I used my Aguilar DB900 tube DI box to feed electric bass to the preamp (which lacks DI inputs). The Sowter output gave a nicely balanced tone, but I thought it sounded too ordinary. But by boosting the preamp's gain so that the clip LED lit up on almost every note played, the sound came alive with colorful, burpy overtones that made for a huge-sounding track.

On the downside, the MA 2.2 TX's titling is very hard to read from a moderate distance or in low light, and there are no status indicators for the phantom power switches. I found myself constantly shoving my face in the unit's front panel to confirm status when I was using condenser mics on rotating overdubs.

The ability to use either transformer-coupled or transformerless outputs on any channel makes the MA 2.2 TX a versatile recording tool. If you're looking for a mic pre that can produce both pristine and subtly colored tracks, check it out! Prices: MA 2.2 TX, \$2,975; MA 2.2, \$2,600.

Buzz Audio, dist. in the U.S. by Atlas Pro Audio, 866/235-0953, www.buzzaudio.com. ■

Michael Cooper recently engineered Academy Award-winning actor William Hurt's narration of Ernest Hemingway's novel The Sun Also Rises for Simon & Schuster Audio.

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TC-Helicon VoicePro Voice Processor

Pitch and Time Stretch, Gender Bending and Multi-Effects

The best gear is often focused on a specific design goal instead of trying to handle every task imaginable. To that end, the TC-Helicon VoicePro was deliberately created to process the human voice, both in singing and spoken-word applications, although monophonic instruments can also be treated effectively. VoicePro offers a wealth of digital algorithms, including pitch and time stretching, character modeling (including gender bending), intelligent harmonization, transducer emulation (band-limited radio voices and more), multi-effects, equalization and dynamics processing. Whether you work in the studio or a broadcast booth or in sound design, VoicePro has much to offer.



sources—access to the unit's μ Mod (flange, chorus and related effects), delay and reverb effects. The sensitivity of each analog input can be independently adjusted in 3dB steps to accept line levels from +3 dBu to +30 dBu via 24-bit A/D converters operating at any standard sampling frequency from 44.1 to 96 kHz. The rear panel's two remaining XLRs provide stereo mix analog outputs, each handling levels up to +24 dBm and graced with a virtual meter on the unit's LCD.

A rear panel DB-25 connector uses a supplied XLR breakout cable to provide two digital ins and eight digital outs in AES/EBU format. VoicePro can sync to internal crystal, external AES/EBU clock or word clock input (the latter via a BNC connector) at any of the above-mentioned sampling rates.

GO WITH THE FLOW

Internal signal flow and a few proprietary definitions need to be explained before you fully grasp the myriad ways in which VoicePro's digital I/Os can be used. The unit's Voice input is internally multed into two signal paths: One path, called Dry Lead, can be processed by equalization and a compressor/limiter and de-esser placed in series; Dry Lead can also be sent to the effects processors. The other mult delivers the unprocessed Voice input to the same types of processing blocks followed by a 4-voice harmonizer, transducer emulator and the same effects (reverb, delay and/or μ Mod) to which the aux input has direct access. The Dry Lead can also access VirtuaLead algorithms, which execute time and pitch shifting, character modeling and transducer emulations. An internal mixer adjusts levels and stereo widths independently for the Dry Lead, VirtuaLead, harmony voices and effects. Individual processing blocks can be toggled on and off with the push of one or two buttons.

You can separately route each of

VoicePro's four generated harmony voices and the Dry and VirtuaLead voices to six digital outputs. Alternatively, separate stereo mixes of harmony voices, multi-effects, and combined Dry and VirtuaLead voices (three stereo mixes in total) can be routed to six digital outputs. In any case, digital outputs 1 and 2 always carry a stereo mix of the combined outputs. The internal Voice and aux audio paths can each grab signal from their corresponding analog input jack or the AES/EBU input's left or right channel.

Also on VoicePro's rear are MIDI In and Out jacks (useful for parameter control), Ethernet jacks (to facilitate software upgrades) and an RS-232 port (not yet assigned a use at the time of this writing); a detachable AC cord and Ethernet cable are supplied. The unit's auto-sensing power supply allows for worldwide use. The Vyzor Editor (Mac/PC) VST plug-in facilitates VoicePro's operation and can be downloaded (at no cost) from the company's Website.

WHAT A CHARACTER!

High-quality pitch and time shifting and character modeling are intensive processes that incur about 34ms latency (for VirtuaLead and harmony voices only) from VoicePro's input to output. Using these algorithms to process my live vocal performance, I found the delay in a processed signal output to be very distracting. By moving my pre-recorded track 34 ms forward in time in my DAW before sending it to VoicePro, I could lock the processed return signal to other tracks. The latency for the VirtuaLead voice can be reduced to as low as 15 ms for live applications, but only with a trade-off in audio quality.

Accessing VoicePro's character-modeling processors, I shifted the resonance (harmonic content) and pitch (including formants) of a deep male speaking voice to

LOOK WHO'S TALKIN'

The 2RU VoicePro's main attraction is its front panel 320x240-pixel color LCD screen, which displays the current preset and its active algorithms, parameter values, etc. Each processing block—as well as utility, preset management, bypass and other functions—has its own direct-access buttons, facilitating fast setup and editing. Four cursor buttons and four detented soft knobs on the front navigate the LCD and edit parameters, respectively. Other buttons provide control over levels and routing for input signals and internal effects.

A scroll wheel lets you advance or retrograde through up to 500 stored user and factory presets (250 each). Alternatively, you can use a Browser function to search by source and application for a suitable preset. For example, you can choose "singing" and "transducer," and then specify that all relevant factory or user presets be listed in numerical order. If you ever have a "senior" moment while staring at the LCD, VoicePro's context-sensitive Help function will display the information you need to get back on track quickly. A tap-tempo button (for setting delay time) and power switch round out the VoicePro's front panel controls.

Four XLRs on the rear panel provide analog connections. One is for a mono Voice input (alternatively useful for a monophonic instrument) and provides access to all of the unit's processing blocks. An aux input allows any type of input—including polyphonic

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HS10W

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make it sound uncannily like that of a woman. Bypassing the pitch-processing block and choosing a resonance setting modeling a younger voice, I could make a male lead vocalist sound progressively younger by increasing the Amount parameter. Decreasing the (vocal) Tract Ratio parameter made the vocalist sound like a person with a smaller build, with high settings evoking memories of Herman's Hermits. I could also make the singer's voice sound breathy or raspy using VoicePro's Breath processing.

One of my favorite character-modeling processing blocks was Inflection, which randomizes pitch, timing and levels to create awesome doubling effects, perfect for pop vocal hooks. While heavy amounts of some types of character modeling caused the sound to become audibly phasy, muddy, artificial-sounding or just plain weird, moderate processing generally yielded excellent results.

When VoicePro's automatic pitch corrector couldn't initially correct wildly off-pitch vocal notes that fell roughly halfway between two scale notes, I could get the job more or less done by playing MIDI target notes into the unit's MIDI In jack at the correct moments. That said, graphic editing in Antares Auto-Tune yielded better results for such demanding tasks.

It was a snap for me to set up four-part, scale-based harmonies. (Intervallic and chord-based harmonies are also offered.) I could set the level, scale interval, pan and gender-bending processing for each of the four voices independently, and then humanize all the voices (dialing in portamento and detuning and randomizing pitch and timing) to create a rich and natural-sounding texture. Awesome!

Dialing in moderate amounts of time stretching (expansion or contraction). I could easily increase or decrease the program time for a voice-over spot without altering the distinctive timbral character of the voice talent or introducing audible artifacts.

FINAL CHORUS

VoicePro is a bit expensive at \$3,495 list, but the quality, power, musicality and sheer variety of algorithms under the hood justify the price. This user-friendly vocal processor provides wide enough parameter ranges that the indiscriminate operator can get bad (or good, but bizarre) results, but judicious use will generally reap excellent rewards. If you're looking for a powerhouse processor that will transform vocals in dozens of practical applications, VoicePro delivers.

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A-Designs Audio Pacifica Microphone Preamp

High-End Stereo Version of a '70s Classic

For recording engineers who are in a retro state of mind, A-Designs Audio has created a stereo preamp that emulates the tonal character and quality of the original 1970s-era Quad Eight Ventura console. Pete Montessi and Jon Erickson of A-Designs Audio examined and ultimately re-created the best part of this console: the QE preamp. Working with Tom Reichenbach of Cinemag (son of the original designer of the Quad Eight

A quick look inside shows the attention to detail that went into manufacturing this preamp. It's great to see I/O transformers tightly locked down and wires strapped and dressed neatly out of harm's way, with all heavy-use components (XLRs, etc.) securely fastened to the chassis. This kind of construction makes the unit robust enough to take on live remotes and to use in any studio setting. It's also attractive enough (with its decidedly "West Coast" look and styling)

Pacifica created a sizzling combination: no coloration of any sort, with seemingly endless gain and no clipping.

Next up I used the Pacifica in dual-use mode for a World Café Live (WXPB FM) event with Philadelphia Orchestra solo bassist Hal Robinson using both a bridge pickup on one channel and a microphone (MXL V6) in the other. The dual, but independent, channel implementation here was ideal: clean, solid pickup for the bass DI, with all



transformers), Montessi and Erickson spent more than two years testing and listening to prototypes in the lab and in studios with other engineers.

Aside from a newer onboard power supply, the Pacifica's look and feel strongly resemble the original Quad Eight, which (with Neve and API) was one of the three big consoles popular during the '70s.

THE COOL, BLUE PACIFICA

The Pacifica is a no-nonsense, solid-state stereo (dual-mono) preamp that meets all the professional requirements of a stand-alone, single-space, rackmounted unit. Input impedance is 600 ohms at 400 Hz, with a gain range of 72 dB and a noise floor of -128 dB (EIN). Stated frequency response is 9 to 101k Hz, and distortion is rated at less than 1 percent. Each independent channel features custom input and output transformers, level controls, -20dB pad switch, 48V phantom power switch (with red LED), phase switch and a hi-Z ¼-inch jack for direct input. A cool blue LED power indicator tells you the unit is on and ready for business.

Weighing in at a serious 11 pounds, the large toroidal power transformer adds considerable heft to the package. The construction is rock-solid, as it has to be for something this heavy.

to show off in any setting.

MAKING WAVS

On several recent classical and jazz recording projects, the Pacifica excelled in a variety of ways. For orchestral recording with a pair of DPA 4006 TL microphones (read the mic review at www.mixonline.com), the Pacifica delivered an impressive level of effortless detail and *lots* of gain as compared to other preamps in this class. When I initially experimented with the levels, I ran without the pad and found the output levels almost too high to be useful (no distortion, but simply *lots* of very hot level). I reluctantly engaged the -20 pads (without any audible clicks, either—always a good thing) and found a bit more headroom without sacrificing the gain structure. Noise was seemingly nonexistent, and the orchestral tracks absolutely sparkled.

In use for a recent Mozart tribute with pianists Uri Caine and Charles Abramovic at Philadelphia's Kimmel Center for the Performing Arts, the signal from a pair of Audio-Technica 4050s placed above a Steinway Model D was routed through the Pacifica. The -20dB pad was, of course, required here, resulting in a rock-solid stereo image, crisp, detailed highs and surprisingly articulated mids. The A-T mics with the

the articulation and detail in channel 1, plus the rounder, warmer sound of a cardioid mic in front of the instrument in channel 2.

In the studio, I put the Pacifica through a variety of tests, including an acoustic 12-string guitar's pickup going DI into one channel and a Neumann KM184 for a more natural blend. As with the acoustic bass recording, I got a lot of sound—plenty of sturdy mids and lows with plenty of air on top.

BACK ON DRY LAND

The Pacifica exhibits just enough color in the low and midrange to give recordings a great character, but not at the expense of the top end. That combination makes for a very musical preamp that works on a wide variety of sources. Any mic I ran through it sounded its best, and that's saying a lot for any preamp out there. There are many exotic flavors and colors available with today's crop of tube preamps, but the ultraclean, no-compromise sound of the Pacifica (at \$1,995 MSRP) is something every studio or location recording engineer should have.

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Lynx Studio Technology Aurora 16

Multichannel AD/DA Converter Brings Quality, Affordable Sound

Combining flexibility with its moderate price (\$3,295 list) and high-quality AD/DA conversion, the Lynx Aurora continues the traditions of a company known for its enthusiastic customer support and dedication to multiplatform digital audio. Both 8- and 16-channel versions of Aurora can function as stand-alone converters, yet the optional AES16 AES/EBU PCI slot interface card (with its companion virtual mixer) lets users set up complex routings with remote capabilities.

Aurora has the necessities for audio acquisition/playback without some of the

solid when locked. SynchroLock can be disabled for wide-range analog PLL.

One signal source routing switch toggles among three analog sources: analog in, AES in and LSLOT in. Press the switch a fourth time and the front panel enters Bypass mode, with routing managed by external control. The To Digital Out switch selects from analog in, the AES in port and LSLOT in. Similarly, a fourth press of that switch selects routing by external control.

Aurora uses the IrDA protocol to control parameters, meters and settings via handheld, laptop or desktop PC with infrared capabilities.

decided to forgo the electronic gain stage to reduce distortion and provide 16 channels of A/D and D/A in one rackspace. However, two versions of Aurora with fixed gains of +18 dBu and +24 dBu are available.

A REAL-WORLD APPLICATION

I've been recording and mixing in surround for nearly a decade. Often I'll find myself dissatisfied with stereo sound effects, so I'm gathering samples for 5.1FX, a company that will specialize in online surround sound FX.

To test Aurora, I set up JamSync's Soundfield Mark V multichannel mic in two



pricey extras that mastering facilities and careful audio engineers tend not to use, such as soft distortion or soft clipping limiters. At the same time, its SynchroLock™ feature provides immunity to jitter, making it ideal for both audio capture at high sample rates and precise playback for critical listening.

Although Aurora operates as a stand-alone converter, for optimal use, it's better to pair it with the Lynx AES16 PCI interface card for individual channel control, levels and monitoring from your computer.

LOOKING AT THE FRONT

Aurora's layout is clean, intuitive and visually appealing. Settings are easy to see, even across a dim control room. Users can select from six supported sample rates (44.1, 48, 88.2, 96, 176.4, 192 kHz) from internal sync. Locked to external sync, the corresponding sample rate LED glows.

A sync source switch has LEDs to indicate internal, word clock, EXT/2 (with word clock at half the sample rate for dual-wire AES/EBU devices), and AES A or AES B. An LSlot setting derives sync from an optional LSlot/LStream card in the LSlot expansion port. LSlot is currently used for the LT-ADAT Lightpipe card. A FireWire LSlot card is slated for Q3 2006. The SynchroLock LED flashes while the converter is seeking and locking to incoming clock, and it glows

You can also program the firmware via IR or MIDI. A large front panel window has a MIDI/IR activity LED and two rows of LED peak meters displaying I/Os.

With the meter switch set to analog, the Trim/AES Mode sets the analog inputs to +4 dBu or -10 dBV. Set for digital inputs, Trim/AES Mode sets AES I/O to Single-Wire I/O mode, Dual-Wire Input mode, Dual-Wire Output mode and Dual-Wire I/O mode. Switching any set of channels to dual wire reduces the set of channels by half.

ON THE FLIPSIDE

Aurora's back panel has six 25-pin D-Sub connectors: four for analog I/O in sets of eight channels, and two for AES I/O in sets of eight (port A and port B). Analog pinouts conform to the Tascam DA-88 standard, while digital pinouts are in the Yamaha MY8AE96 YGDAI standard.

MIDI in/out ports let users control or update firmware through a computer's MIDI interface. The LSlot expansion port accepts the LT-ADAT Lightpipe I/O card and provides for other future formats, such as FireWire. BNC word clock in/out connectors allow the unit to be externally clocked (or to clock) downstream devices.

Normally, when I'm working with AD/DA conversion, I like to see a sensitivity adjustment for the converter's I/O. Lynx

different ambient environments. I wanted to test differences in capture at 48, 96 and 192 kHz. To experience the difference in two rooms (kitchen and bathroom) regarding perception of room size, I recorded an egg-shaped shaker, ring of keys, Martin D-41L, a flute, ponytail holder with two hard plastic beads, tambourine and suspended triangle.

An SP451 processor was connected to the Aurora 16's analog input; Aurora's analog out was overpatched into the third bank of the room's Studio Technologies' StudioComm Model 59 Control Console. I used Aurora's internal clock; SynchroLock was on for both Aurora and AES16.

I installed Nuendo Version 3.2.0.1128 on my kitchen's modest Gateway disk printer server (Celeron 2.93 GHz with 496 MB of RAM) running XP Professional V. 2002 with Service Pack 2. I popped in the AES16 card (installed the WDM driver for XP), plugged in the two 8-channel CBL-AES1605 cables between Aurora and the internal card, and inserted the CBL-AIN85 and CBL-AOUT85 cable pairs for analog I/O.

I created six different Nuendo projects: "kitchen" at 48/96/192 kHz and "bathroom" at the same rates. I recorded the instruments taking output from the SP451 as L, R, C, LFE, Ls and Rs. Watching for overs in the signal chain was important, but I let a few slip to hear how they sounded.



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PUT IN PLAYBACK

I wanted to hear playback in the control room, but with the computer in the kitchen, I devised a solution for remote playback. From a Gateway notebook, I could control Nuendo via XP Professional's Remote Desktop feature with a wireless connection.

At this point, I depended on the Aurora Mixer applet to change sample rate when I switched project playback. I wish the ASIO driver could feed that metadata to the mixer so I could just swap sessions. The mixer helped me troubleshoot playback when I realized I was hearing Ls and Rs out of my

side dipole speakers. In a matter of seconds, I could track down my routing mistake.

Aurora sounded very good at all three rates, and I got a good perceptual sense of the two spaces. The ponytail bead bounced from the bathroom floor into the bathtub on one trial, and I laughed out loud at the obvious bathtub ambience. On flute, a couple of bursts that tripped the overload on the SP451 were rendered as a kind of "dup-dup" sound rather than a hideous burst of noise or a mute. Strings on the Martin rang true, but at 192 kHz, the fact that they weren't brand new was more

apparent, as was the horrid, cramped space of the tiny, reverberant bathroom.

The surprise was the triangle recording. In "real life," a triangle's decay is a series of complex intertwining drones that wax and wane as the volume decreases. At 48 kHz, these drones seemed to be punctuated by beats, as though the triangle was being restruck softly over and over. At 192 kHz, the drones developed more smoothly into one another. In the middle was 96 kHz, with perceptual elements of the other two sample rates.

All three sample rates provided fine results, but I preferred 192 kHz for imaging and "room feel." For surround sound effects capture, the Aurora 16 with the AES16 card proved a very flexible system that allowed the capture of sound effects at multiple sample rates with just a few keystrokes.

THE FINAL TALLY

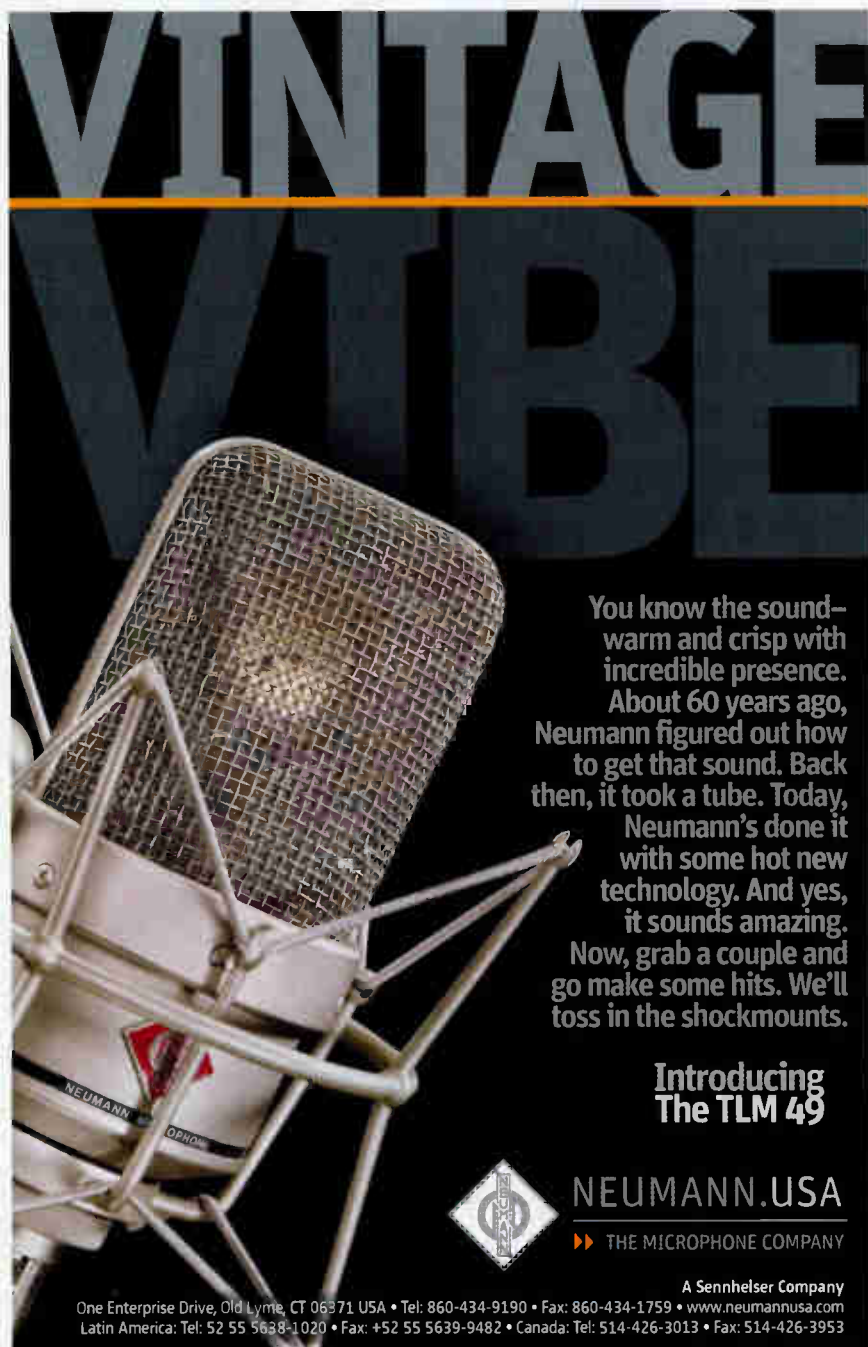
Lynx consistently produces quality products at moderate prices, so it's no surprise that the Aurora provides superior sound for less than other converters with similar features. With a larger system, the integration of the Aurora and the AES16 is definitely the way to go. The mixer application is perfect for those of us who like to leave our equipment in the machine room.

I liked the Aurora 16, and I'm definitely considering it for a portable surround sound capture rig. For me, the most important part of the recording process isn't mastering; it's at the other end. I especially liked the Aurora's 96kHz and 192kHz results.

The only addition I'd like to see is a sensitivity adjustment for the I/O and the forthcoming FireWire card for portability. With the next revision of Final Cut Pro supporting multichannel 96kHz audio—it's stereo at the moment—it will be intriguing to learn how well portable systems can capture HD video and multichannel audio simultaneously. I'm hoping on-site recording with a Mac Book Pro, the Aurora and a PDA with IR becomes a workable reality in the near future. But overall, the Aurora delivers high-quality conversion at a modest price, with system integration that works with modern studio technology. Note: Lynx just announced LSIO interfaces for connecting Aurora 8 or 16 converters to Pro Tools|HD systems, with parameter control from the PT environment.

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K.K. Proffitt is chief audio engineer of Jam-Sync, a Nashville facility specializing in multichannel mixing and DVD authoring.



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PHOTO: WABE ELDERRIN

SERGIO MENDES AND WILL.I.AM TEAM UP FOR "TIMELESS"

By Chris J. Walker

Brazilian-born pianist/composer/arranger Sergio Mendes' name is synonymous with pop bossa nova. He became an international icon in the late 1960s, recording with numerous hit-making incarnations of the group Brasil '66. With the success of their light, jazz-flavored pop records, Mendes also developed as a high-caliber producer, working with the likes of Sarah Vaughan, Johnny Mathis, Gilberto Gil and others. Mendes settled in the United States permanently

in 1964. He had always had an affinity for mainstream jazz, and he jumped at opportunities to work with legends such as saxophonists Cannonball Adderley and Stan Getz, trumpeter Dizzy Gillespie, and fellow countrymen Antonio Carlos Jobim and Joao Gilberto.

In strong contrast, William Adams, better known as will.i.am—rapper-singer/leader of the red-hot Black Eyed Peas—was born in 1975, years after Mendes' most successful period, and he comes from the hip hop world. But he's very versatile, playing keyboards, drums and bass, and his diverse musical tastes include bossa nova. In fact, the rapper/producer is one of Mendes' biggest fans.

This unlikely pair formed a relationship in 2002 when the Peas were recording their breakout CD, *Elephunk*. They decided to do a take on Jobim's "How Insensitive" and wanted Mendes to play piano on a song called "Sexy." Mendes says he met with will.i.am mostly out of curiosity, but then was amazed when will.i.am came over to his house with a crate full of Mendes music on vinyl, dating back to his instrumental years at Atlantic and including albums that Mendes himself didn't have. After the session with the BEPs, where Mendes was exposed to Pro Tools for the first time, he and will.i.am talked about working together in the future.

"My last record was about ten years ago and I wasn't really thinking about doing another one," Mendes recalls from his Woodland Hills, Calif., home. "But I enjoyed that experience [with the BEPs]. So I said to will.i.am, 'Why don't we make a record? You love Brazilian music and we can reintroduce those great melodies to the kids of today, and you can bring the hip hop world. So it's like two generations, two different cultures, doing something very fresh and unique.'"

—CONTINUED ON PAGE 108



DRESDEN DOLLS

TRIUMPH OF THE TWO-PIECE

By Bryan Reesman

You've probably heard very little that could compare with The Dresden Dolls. This mesmerizing duo have caught many listeners off guard with their colorful stage presence (goth meets burlesque), manic musical aesthetic (punk meets cabaret) and edgy songwriting (romantic sentiments and deep thoughts doused with biting sarcasm and extremely frank observations). The group's latest album, *Yes, Virginia...*, features performances that are fiery, furious and spontaneous—indeed, the twosome's raw energy proved an asset when they were touring last year with Nine Inch Nails, of all bands.

On hearing *Yes, Virginia...*, the listener is immediately struck by how powerful the sound of just two musicians can be. It may just be piano and vocals (Amanda Palmer) and drums (Brian Viglione)—okay, there's a little more hiding in the background—but the Boston-based Dolls create a surprisingly full and gripping sound. The songs on the new album—which was co-produced and mixed by Sean Slade and Paul Kolderie—range from the thought-provoking ballad "Sing" to



the thrash cabaret of "Modern Moonlight," and lyricist Palmer tackles everything from relationship manipulation to transgender operations to abortion.

Slade discovered this most unusual duo two years ago when a mutual friend suggested he catch their live show at the Middle East club in Boston. "I went, and halfway through the first song, I said, 'Oh my God, this is the next big thing,'" he recalls. "At the time that



was not the conventional wisdom in Boston. They were considered way too weird—a woman playing piano and singing the songs with a drummer, and that's the whole band. And they sound like they're straight out of the Weimar Republic."

After that show, Slade and Palmer chatted and hit it off, and he later cut a couple of demos with them as an experiment at Camp Street Studio. After the Dolls signed with Roadrunner for their sophomore album, they asked to work with Slade and Kolderie, who had championed them when others had not.

Initially Palmer wanted to go to a studio in Ireland, but Slade had read about Allaire Studios in *Mix* and convinced the Dolls to work there. The location in the Catskill Mountains of New York was intriguing, and he knew and respected studio manager Mark McKenna, who used to manage Bearsville Studios, where Slade and Kolderie had cut several albums and even lived for one year.

"[Allaire's] in this huge old house that's been completely refurbished," Slade says. "The playing room is the old ballroom of the house. It's all wood, with two huge fireplaces, 40-foot ceilings and just amazing ambience. They had two iso booths. They had a side room where we could set up the 1893 Steinway grand for Amanda to play on solo stuff, and then they had an iso booth between the [large] playing room and the control room, which is where we cut the live tracks. That worked out perfectly because she could sit there [in the smaller booth] and play her Yamaha grand, and then we set up Brian so that they were facing each other. Their interaction is so much a part of the music,

and for them to have sightlines like that was just ideal. We actually got basics very quickly. We were there for nine or ten days to get as much as we possibly could, and then we retired to Camp Street to do further overdubs and mix on the Neve board."

Palmer admits that she felt a little claustrophobic in the small iso booth between the control and playing room, viewing it more as a hallway. She only recorded a couple of songs ("First Orgasm" and "Me & the Mini-bar") in the larger side room, while Viglione recorded all his drum parts in the large main room. Palmer was set up mainly in the smaller room because of its visual connection to Viglione.

"I realized at one point, too, that because she's so particular about the piano she plays, which I really admire, it would be cheaper just to ship her piano to the studio," explains Slade. "She has a Yamaha grand, and piano movers can work miracles. They shipped it out of her window of her apartment on a crane, drove it down to upstate New York and had it set up. Allaire was really, really good about keeping the piano tuner schedule happening. I can't say enough good things about Allaire. It's one of the finest recording facilities I've ever set foot in."

Slade and Kolderie have worked together on numerous albums. Twenty years ago they opened up the now legendary Fort Apache Studios in the Roxbury section of Boston. The duo worked on Radiohead's first two albums, the first two Uncle Tupelo albums, *Live Through This* by Hole, *The Burdens of Being Upright* by Tracy Bonham and several

—CONTINUED ON PAGE 110

BILLY IDOL'S "REBEL YELL"

By Bryan Reesman

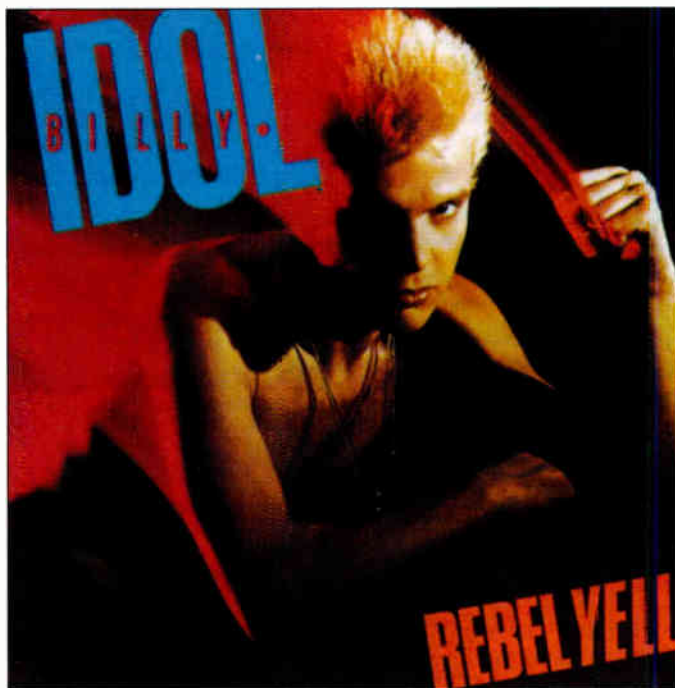
The title track to Billy Idol's second album, *Rebel Yell*, is one of the 1980s' most durable rock anthems, a fist-pumping ode to doing the nasty that transformed the former Generation X singer (born William Broad in Middlesex, England) into a bona fide star. Fueled by throbbing drums, and with guitars and keyboards alternately dominating the mix, the song spotlighted Idol's powerful vocals and was a breakthrough fusion of punk, metal and dance, synthesized through a meeting of the minds—Idol, guitarist Steve Stevens and producer Keith Forsey—at the legendary Electric Lady Studios on Eighth Street in Manhattan. The title might as well have also referred to the recording sessions, which were ripe with drama, including an album whose drummer was snatched from another album project, a title track that needed re-recording, and a battle between the artist and his record label.

"That record was amazing," gushes Stevens. "It put him on the map as an arena-rock artist, and it also cemented our working relationship that is still intact today. There's no denying that there was definitely a sound that was created with his voice and my guitar that hadn't existed before." The guitarist notes that while numerous hard rock bands had high-pitched shriekers at that time, Idol's crooning style gave their partnership a special edge. "It enabled me to play in a lower, more rhythmic way that I don't think other guitar players were doing."

Flashback to 1983: Idol's eponymous debut scored a major hit with "White Wedding," and the charismatic punk with the signature snarl was preparing for his important sophomore album. Working with Forsey, Stevens and future Alannah Myles bassist Steve Webster, along with keyboardists Judi Dozier and Jack Waldman, Idol was recording without a drummer, utilizing an electronic Linn drum. Former Giorgio Moroder protégé Forsey had no problems with it, but obviously the group needed a live skin beater. They had recorded some tunes, including the future Top 10 ballad "Eyes Without a Face," in Studio A downstairs before migrating to the smaller, more intimate Studio B two stories up.

While working in Studio B, Stevens and Forsey heard drummer Tommy Price thumping away with Scandal, who had taken over downstairs. The duo told Idol they should bring him in, so he did. "He was fantastic," declares Stevens. "He was so perfect. I think the first thing he played on was 'Blue Highway,' and I was like, 'Thank God we found a guy who can do this!'"

With Price behind the kit, Idol and his team recorded "Rebel Yell," but the low-key break in the song was left open because nothing had been written for it yet. "This was in the early days of combining dance elements with rock 'n' roll, so we always built in 32 bars, not knowing exactly what we'd do in the middle of the song," explains Stevens. "We did that with 'White Wedding,' 'Eyes Without a Face' and 'Rebel Yell.' We gave Billy a cassette, and he'd go home and come back with



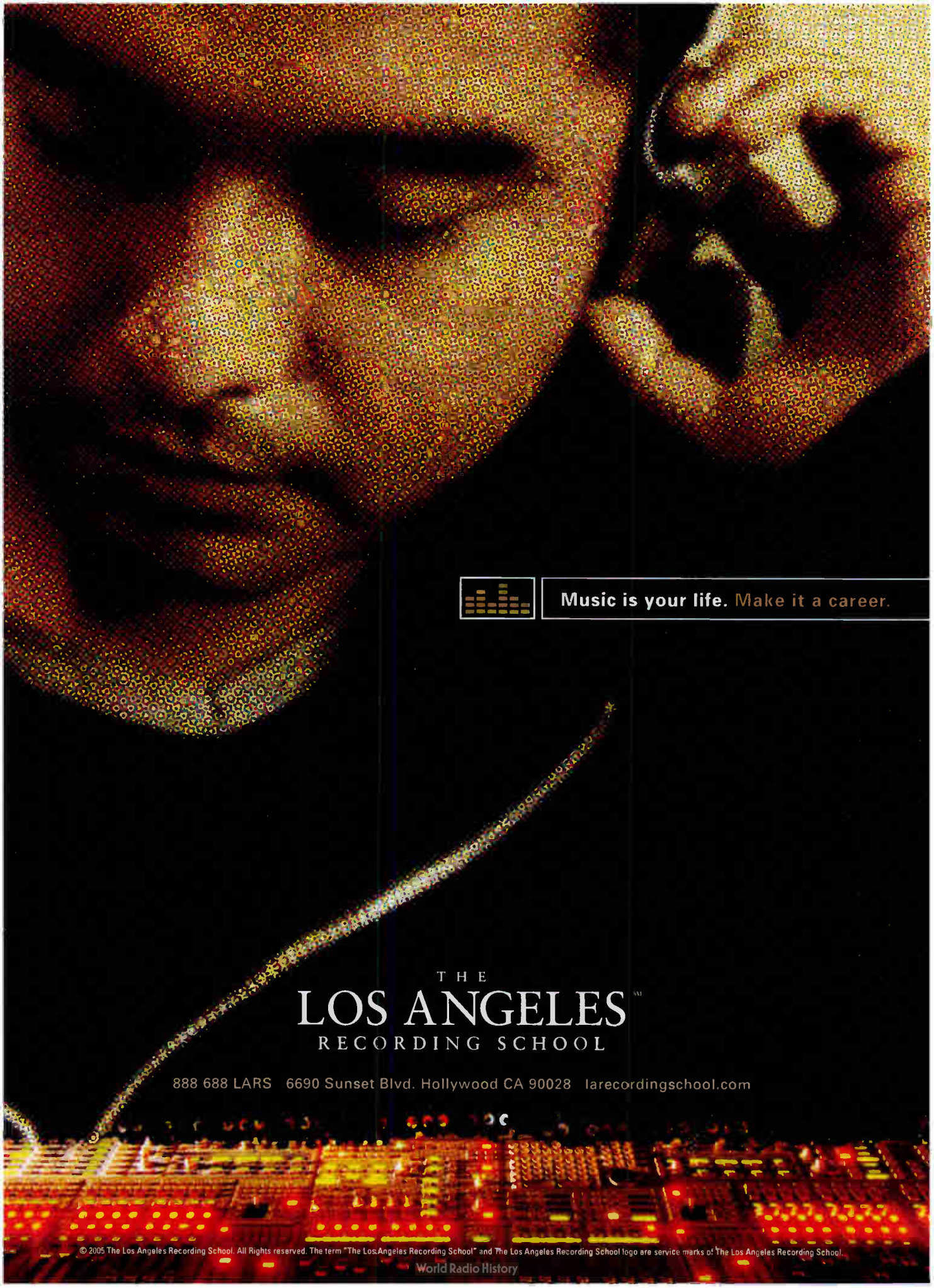
something, then we'd just make it somehow work."

"I waited for Billy to come up with a genius line," adds Forsey. "He came in and tried singing on that part several times, and nothing happened. Then we moved to another studio downtown, and I gave him a [Shure] 57, no mic stand, and he just wandered around the studio and sang. All of a sudden, 'I walk the ward for you, babe' just dropped out right there, and it was fantastic. It was really one of those moments in the studio where you get the chills and the hair stands up on your arms, and you know you've got something really good. Of course, the guitar line at the top of that song from Steve Stevens is fantastic. That whole concept was fantastic."

Actually, a previous version of "Rebel Yell," a song that developed in rehearsals, was completely recorded but scrapped at Forsey's behest. He did not like the tempo. "I had already done overdubs, and I was like, 'You gotta be kidding,'" recalls Stevens. "He was right, though; he was absolutely right. I believe the first version was a little bit slower, so we re-cut it."

A man who came from the school of "pocket and groove" rather than frantic punk, Forsey believes that the song was too *fast*. (Listening to the demo on the expanded *Rebel Yell*, it's hard to tell.) Forsey recalls, "We couldn't time-stretch it in those days, and I kept replaying it. The intent was fantastic, but it just made me feel uncomfortable. The tempo was just too on top, so we went back and re-cut the whole thing again. The record company loved the song and thought we were crazy. Whether it needed to be slower or not, I don't know, but at the time it meant so much to me that it had to be slower!"

It seems that Forsey was right to be obstinate. The re-cut song became a radio and MTV hit that broke Idol through to the big time. Strangely enough, though, a key ingredient—Stevens' hell-raising solo—was nearly trashed. "I think when most of the solos on the record were done, Billy wasn't actually there," the guitarist reveals. "I remember with 'Rebel



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Yell' he didn't like the solo, and me and Keith were jumping up and down. 'Are you kidding? You've got to keep it!'"

The guitarist says that the "ray gun effect" on the climax to that solo was achieved by using a Lexicon PCM 41. "There's a setting on it that you can get this super-modulation, fluttering thing," Stevens says. "The inspiration for that was on Billy Cobham's *Spectrum* record. Tommy Bolin played a solo song called 'Quadrant 4.' He does this weird kind of Echoplex thing in the middle that overtakes [everything]. I just loved the idea that it's a guitar solo, but at the same time there's some kind of sonic blast that's way beyond just being a guitar."

The "Rebel Yell," mix, courtesy of engineer Dave Wittman, achieved a strong balance of the booming drum sounds of the '80s, popular synth sounds of the time and Stevens' snarling guitar. "After Dave came in, my guitar sound immediately improved a gazillion percent, and that dictated being able to have heavier drums," notes Stevens. "But obviously I was always pushing for more guitars in the mix. We reached a happy balance featuring some keyboard elements. And Keith Forsey, being a drummer himself, always wanted the drums at the forefront."

Stevens recalls that he played a Kramer guitar, possibly a Pacer model, with a Floyd Rose tremolo on it. Miked with a combination of a Shure 57 and a Neumann 87, he played through "an [unmodified] Marshall, late '60s plexi, non-master volume—just turn the thing up as loud as you can—and a vintage Marshall cabinet with 25-watt Celestions in it." He adds that Wittman turned him onto a unit by Publison that acted as a Harmonizer but with more subtlety. "I remember when we used it on guitars, it thickened it up without sounding fake or overly processed. I was really adamant that we use the reverb tank that was at Electric Lady, and not use any digital reverb on my guitars." All rhythm guitars were doubled left and right.

Studio B had a new Neve console and an analog Studer 24-track 2-inch tape machine. Michael Frondelli recorded the album, while Wittman mixed it. "We had things multed," Forsey says of the Studer. "We had tambourines on the holes, and on other tracks we had things split up and multed. It was all split up and hand-mixed. There was no automation. We did all the panning by hand. We had three or four people hands-on. It was fun.

"You know what I found about those days?" Forsey continues. "It really got you in touch with songs because you were actually

touching the faders. You went over and over and rehearsed it and got it good. You really got in touch with the song, whereas now everything is automated, and there's a distance between you and the track."

While the original version of "Rebel Yell" was cut to a Linn drum, the re-cut version built up from a live base of rhythm guitar, bass and drums. "I loved that room upstairs [with] the near-field monitoring," exclaims Forsey. "The room wasn't so big that the drums were flying everywhere. You could control it pretty well, and we stayed there."

The intro to "Rebel Yell" is a fast guitar motif from Stevens that sounds like a manic keyboard riff. The six-stringer, tired of hearing so many Roland Junos on rock and pop albums, wanted to emulate some keyboard parts on guitar. With the right riff, and a little gated reverb, he succeeded. "It's a fingerpick thing, and that came, believe or not, from listening to things like Leo Kottke," says Stevens.

All in all, Forsey reckons that "Rebel Yell" took two to three days to record—not bad for an instant classic. But then, plenty of time was spent engaged in other drama during the making of the album. At one point, Idol, who was known for battling with executives over the creative direction of his work, was feuding with his label, Chrysalis Records, and stole the master tapes for the *Rebel Yell* album. When Forsey learned of the heist, he had his second engineer check the tape library, and he discovered that the singer snatched the wrong tapes. But he remained silent about the slip-up.

"He was trying to make a statement to the record company," explains Forsey. "I've always been band-oriented. It's me and the band against the record company. That was always my position. I would do what I thought the record company needed but within the realms of whatever the band wanted. I tried to move the band to where I thought it should be, but if they didn't want to go there, they had total override."

Still, it was funny when Idol returned to the studio victorious. "I let him think he had the masters," chuckles Forsey. "He did whatever he had to do with the label. Everything was squared away, and then he came back and I said, 'By the way, Bill, I've got the real masters.' He's like 'Ohhhhh, great!'"

In the end, the song and album (which made it all the way to Number 6 on the *Billboard* charts) made a strong statement that has endured through the years. And Idol is still rockin' today at 50, having released the superlative comeback album, *Devil's Playground*, last year, and a whole new generation is hearing that "Rebel Yell" again. ■

SERGIO MENDES

FROM PAGE 104

In 2004, will.i.am and the Peas were in Sao Paulo, Brazil, performing; Mendes happened to be there as well, vacationing with his family. Because he had never seen the Peas perform, he came out for the show and was astonished by both the crowd and group's energy. Afterward, will.i.am invited Mendes to a late-night session. Without a record deal or clear concept, they recorded a hip hop version of the Brasil '66 hit "Mas Que Nada" and a few other songs over the course of several days at Mosh Studios. Mendes also cut a song with the Maogani Quartet, whom he brought in from Rio de Janeiro. Weeks later, back in Southern California, Mendes and will.i.am met again; this time they started formulating a coherent plan, which resulted in Mendes' most recent album, *Timeless*. For the album sessions, will.i.am brought in more Brazilian records, including albums by Jorge Ben, Joao Gilberto, Baden Powell and Joao Donato. "Whenever I dive into something, I do my homework," will.i.am stresses from his home studio in Southern California's San Fernando Valley, "We picked 'Berimbau/Consolacao,' 'Bananeira' [Banana Tree], and 'E Menina' [Hey Girl]—they just spoke to us."

Because of will.i.am's busy schedule touring with the Peas and producing other artists' CDs, he didn't get back in the studio with Mendes until Spring 2005. However, leading up to that meeting, Mendes and will.i.am worked on sessions with other contributing artists at Mega Studios in Paris, Chung King Studios in New York, Pacificque in North Hollywood and Wild West Studios in Malibu. Once they got together again in L.A. the work shifted to House of Blues Studio in Encino.

In the studio, will.i.am is highly energetic and quite adept at using Pro Tools—he's a triple-threat combination of artist, engineer and producer. "Engineers slow me down—those guys are like turtles," he says with a laugh. "I'll request a mic be placed next to the Pro Tools screen while I do my vocals. I sequence, program, edit, submix and mix on it. A lot of people think of it as a tape machine, but I don't look at it like that—it's my palette that I draw on. But I need an engineer for the patchbay, especially on the older, vintage equipment. I never had the patience to learn it and I don't like reading manuals. Also, I hate MIDI, think it sounds terrible and prefer humans playing those parts."

Jason Villaroman, who's been associated with the Peas and will.i.am for about five years, did the bulk of the recording. He also catalogued every session that could be potentially used for *Timeless*. "Just about everything



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I know [about Pro Tools] I've learned through [will.i.am]," he says. "We tailor sounds for the songs using Pro Tools when we work with an artist, miking stuff up and implementing gear outside of a computer—what he likes to have an engineer for."

During sessions at House of Blues Studios, Mendes would usually roll in around noon, work into the evening and go out for dinner afterwards. Villaroman's and will.i.am's days were longer—they had usually worked on another project, such as Macy Gray's album, before Mendes arrived. "Sergio is different than the Black Eyed Peas because he's a lot more musical," Villaroman says. "He's made, like, 70 records and my grandparents even know who he is. will.i.am tends to formulate as he goes and he just wanted the project to sound hot. No EQs and very dynamic unless you're tailoring a sound [such as bass, which was EQ'd heavily]."

"It really was all about mic placement for me, and will.i.am doing his thing on Pro Tools. The rough mixes throughout the whole thing were amazing and texturally deep—I mean [mixer] Tony Maserati killed it! But if I played what we mixed you would still be saying, 'Damn—those are cool.'" Villaroman used the House of Blues' vintage API console with 550A EQs, along with a Neve 1076. Most of the instruments were captured using Neumann U87s and 67s—the latter was the favored mic for Mendes' wife, Gracinha Leporace, who provided the vocal foundation for the project. Other microphones included an AKG 414 for piano and C 12 for guitars.

From the audience's standpoint, *Timeless* is laden with top-selling pop artists, who are certain to interest even listeners with little knowledge of bossa nova and samba. During the song selection process, Mendes asked will.i.am whom he envisioned on the record. The rapper/producer casually responded, "Justin Timberlake and Stevie Wonder." "I was just dreaming," will.i.am says. "When it came time to try to put it together and deliver, that's when I thought, 'I'm in over my head with these promises I made.' To expect Justin Timberlake to like samba as much as I do is hard. But when he heard India.Arie's song, 'Timeless,' I didn't have to ask him—he wanted to be part of the project. India.Arie and Jill Scott really set the tone for some of the people who traditionally wouldn't accept that kind of collaboration. I saw Stevie Wonder coming out of the Record Plant at four in the morning and told him who I was, that I was working on a project with Sergio and asked if he would play harmonica on a track. He said he loved my band and hadn't seen Sergio in 30 years, but wanted to hear the track and take it home so he could learn it.

He came by the next day at three o'clock, did one take and left an hour later."

Throughout the making of *Timeless*, the greatest challenge was maintaining a balance of bossa nova and hip hop. Sometimes will.i.am wanted to try a rap or rhythm that was slightly incongruous, and Mendes would complain that it didn't sound Brazilian. Singer John Legend's track was one where will.i.am

So I said to will.i.am, "Why don't we make a record? You love Brazilian music and we can re-introduce those great melodies to the kids of today, and you can bring in the hip hop world."

—Sergio Mendes

had to make some creative adjustments to satisfy Mendes' views. Other times Mendes told will.i.am to add *more* rapping, so it went both ways. "When you're fusing genres like that you have to be careful," will.i.am says. "Sergio has been doing bossa nova for over 40 years. I don't want to insult all of his other records, and I want to have some of the same colors of samba."

When it came time to mix, will.i.am brought in Tony Maserati, who has worked extensively on projects by the BEPs and many other pop and hip hop acts. The two had been talking about working on a Mendes record almost since the mix of the Peas' "Sexy" three years earlier. Toward the end of the summer of 2005, Maserati, who has his own custom room at Chung King in Manhattan, got down to business on the Mendes record.

"It was an interesting project because everything is played live," he says. "Sergio's band did most of the original tracks. Then will.i.am had several guests and members of his band play along with Sergio's hits to fill in. will.i.am was always on the road and did all the programming and editing before I got it. I mixed about ten songs and communicated [live in real time] through iChat with will.i.am. I'd send mixes and he would give me comments, while Sergio was here most of the time making his comments. Sometimes will.i.am would get inspired, add a guest and make a song longer, then I would clip it here and there to fit the format of having another

singer or rapper. It ended up that all the songs were mixed about three times; basically the project grew as it developed and sometimes the songs changed form.

"Sergio and will.i.am worked together really well, with Sergio being the consummate musician and always had great comments about vibe and aesthetics," Maserati continues. "will.i.am has great sensibility about that as well. It all worked out because we approached it as a whole project and we didn't have to worry as much about studio time because I had my own place." Maserati affectionately called Mendes "the Brazilian police" because he made sure the Brazilian/jazz flavor was always present.

Mendes notes, "It was great and clear, with very good sounds. At the end of the process, I had my dear friend Bernie Grundman, where I've always ended my projects, master it. He brought the final magic to it, with the beautiful spices he adds, combined with will.i.am doing most of the Pro Tooling and Tony Maserati mixing."

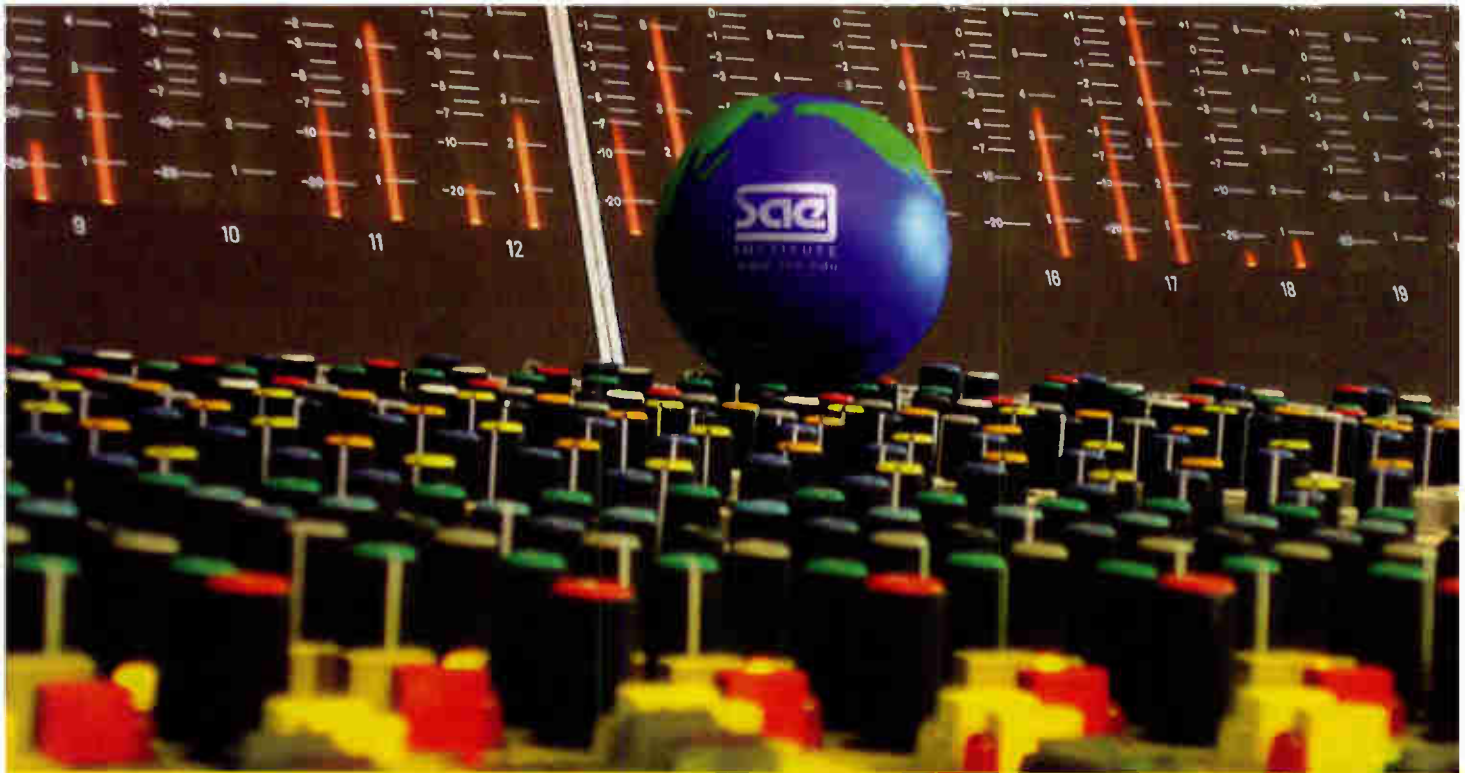
will.i.am sums up the project: "Sergio planted a seed and people picked the fruit, and now we replanted it for people to come and enjoy the same tree that was there, just in a different shape than in 1966. To me that's *Timeless* and I don't care if this record doesn't sell but ten copies. The fact that that it was made honestly—with no record company and nobody saying 'You guys should...,' with just two people that appreciate each other—hasn't been done before. Sergio is a producer, and the reason all his records sound a certain way is because of him. But for him to sit back and let me produce with the limitations of not knowing theory, but having lots of imagination and just being a hip hop producer—that's dope. He appreciated and found beauty in the whole thing." ■

DRESDEN DOLLS

FROM PAGE 105

albums by the Mighty Mighty Bosstones, starting with 1997's *Let's Face It*. Even with that extensive resume, the pair found something new with the Dresden Dolls.

"Most of the bands we've worked with have been guitar bands," says Kolderie, "so the biggest challenge was trying to turn the piano into a whole band basically, so you could cover all the jobs that drums, bass and guitar normally do." Yes, *Virginia...* took 14 days to record, with overdubs requiring an additional 21 days. The whole creation process, from recording to mixing, took two months. Most of the album was recorded using Neve and API mic preamps to a Studer



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827 analog 2-inch through an SSL board. Later the tracks were dumped into Pro Tools HD for editing and fixes.

For recording the pianos, the producers generally used a Telefunken 251 on the bridge end of the strings and an AKG C 24 stereo mic over the hammers. "You have to be careful of phasing when you're overdubbing piano, but some of the songs have three or even four passes," says Kolderie. "They're not all doing the same thing all the time." Vocals were recorded with Slade's personal Klaus Heyne-modified Telefunken U47, including the yodeling of singers Whitney Moses, Mali Sastri and Holly Brewer on "Delilah" (all recorded separately), and the background vocals by Brewer and Mat McNiss on "Sing."

Drumwise, Kolderie experimented with a pair of Schoeps C-5 overhead mics to get the right cymbal sound. He used Neumann U87s on the toms. "For the snare, we taped a Shure 57 and an AKG 451 with a 20dB pad together on the top, and then we used a Sennheiser 441 underneath," he reports. "We had probably 10 or 12 channels [for the drums]. It was such a big, crazy room, we put a lot of room mics up. It might have been five or six."

The main room had such a booming

sound that Slade and Kolderie did not need to use processing. "The sound of the drums is very much the sound of that giant room that we were in," notes Kolderie. "Cutting it to tape gave us that big bottom end." The album was mixed at Kolderie and Slade's Camp Street Studio in Cambridge, Mass., through a unique Neve Tweed console. "It was the last board on the Neve assembly line when they went bankrupt in the late '70s," Kolderie says. "The employees formed a company called Tweed to finish it. Also, we're big fans of the Alan Smart C2 mix compressor, which we use religiously."

Viglione reports that all of the drum takes were full takes and that he strove to maintain the integrity of each song with one continuous performance. The vocals, on the other hand, were almost all overdubs. "There is one song that is a completely unadulterated live take, and that's 'Me & the Minibar,'" says Palmer. "The vocal and piano were done straight onto tape and mixed straight down. I didn't do any of the other vocals live. I did scratch vocals for most of them, and I don't think there's a single take on there where I did the vocal in one take. It took two or three takes. I could have done the vocals live, but it was a mix issue because we recorded on an

acoustic piano." Beyond drumming, Viglione also plays guitar and bass. His acoustic guitar playing opens up the single "Sing" before the piano comes in.

Palmer says that the Dolls tried to do a minimal amount of extra overdubs on *Yes, Virginia...*, preferring to keep the sound design simple. While there are plenty of vocal harmonies, and some bass and guitar in spots, most of the added extra ingredients are subliminal in their integration. "One of the things that was the strong point of Sean Slade is that he was a master of sneaking in these hidden textures that you really don't notice," observes Palmer. "For instance, on 'Sing' there is a Mellotron, and you can just barely hear it, even if you're listening for it. It's just this little, warbly texture that opens everything up just a little bit. On a few other songs, we added one of those old-school church organs and [used] bass pedal here and there just to flesh it out a little bit. I was really skeptical of all that stuff at first, but almost everything we tried we kept."

"We wanted you to get the impression that you were listening to just two people playing," adds Kolderie, "and then if you listen closely, you'll realize that there's more there." ■

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L.A. GRAPEVINE

by Bud Scoppa

Starting my second month as *Mix's* L.A. columnist, I figured it was time to start making the rounds, and despite the current climate, which some in the business have described as survival-of-the-fittest, I was heartened to find the mood to be upbeat wherever I went.

First, I paid a visit to an old friend—Jeff Greenberg, who has helmed The Village for 11 years, taking the West L.A. landmark from the verge of liquidation to a decade-

PHOTO: JOSHUA BENDER



From left: Brad Wood, Greg Jehonian, Richard Mazzotta, Michael Weiss, Aaron Weiss and Christopher Kleinberg at Seagrass.

long period of prosperity that shows no signs of slackening. The studio hosted the Dixie Chicks through much of 2005, from the writing phase onward. "We built a nursery for their babies," Greenberg says. Other recent clients included Nine Inch Nails, Oasis, the Darkness, Wolfmother, Cassandra Wilson, Dave Sardy (who mixed a Stones single) and Switchfoot with Steve Lillywhite. Among the soundtracks recorded at The Village were the T Bone Burnett-produced smash *Walk the Line* and the upcoming *Omen*.

Additionally, the facility has recorded a variety of live shows for KCRW, iTunes and others, with acts including R.E.M., the White Stripes, Yo Yo Ma, the Polyphonic Spree and Ben Harper. The Village now has four studios, three private studios (two of those occupied by producer John Alagia

and longtime resident Robbie Robertson) and a top floor containing four more rooms, which were used exclusively by Jimmy Jam & Terry Lewis for the past three-plus years while they awaited completion of their new Flyte Tyme Productions facility in Santa Monica (see March *Mix*, Coast to Coast). "It's such a cool combination of artists and residents," says Greenberg, "and with all this cross-pollination going on, it's becoming kind of a modern-day Brill Building."

Sound City, where Tom Skeeter has been overseeing things since 1970 (that's gotta be a record for a rock 'n' roll studio), has weathered plenty of music biz ups and downs, and it's still rolling along like a locomotive on the nearby train tracks. According to studio manager Shivaun O'Brien, herself a 15-year Sound City veteran, Ry Cooder has been tracking new material in Studio A, with Don Smith engineering. Greg Fidelman mixed some Johnny Cash tracks for a future release on American/Island Def Jam.

Bret Gurewitz was in tracking and mixing Bad Religion bandmate Greg Graffin's solo record for Epitaph, with Pete Martinez engineering. Nick Raskulincz is producing Casino for Polydor U.K. in Studio B with Paul Figueroa engineering. And Joe Barresi engineered and produced Australia's *The Butterfly Effect* for Modern Music. What's revealing about this activity is that several of the above-mentioned producers—including Fidelman, Raskulincz and Barresi—began their careers and learned the ropes as runners at Sound City and still consider it their studio of choice.

Another owner who has continued to prosper in this challenging climate is Ocean Way's Allen Sides, whose facilities in Hollywood and at Sherman Oaks' Record One continue to be booked solid.

—CONTINUED ON PAGE 120

NASHVILLE SKYLINE

by Rick Clark

Last night, I had the good fortune to catch the premiere of Jonathon Demme's new film, *Neil Young: Heart of Gold*. It documents most of the concerts Young gave last fall at the Ryman Auditorium. I was lucky enough to catch that show when it happened, and it was pure magic. The sound, mixed by FOH engineer Tim Mulligan, was impeccable (the best I believe I've ever heard at the Ryman) and the stage production was so seamless that it was easy to forget that a major film shoot was taking place.

The concert debuted Young's latest album, *Prairie Wind*, and he played it in its entirety during the first half of the show. It is always interesting to go to a concert and hear an album unfold before me—a totally fresh experience—and be rewarded with music that sounds so rooted and timeless. Young's *Old Ways* and *Comes a Time*, both albums recorded in Nashville, offered similar treasures.

Before the recording of *Prairie Wind*, Young had to check into the hospital for a brain aneurysm. *Prairie Wind* and the film of the Ryman concert are rich, thoughtful meditations on the preciousness of the time we have on Earth, and on the priceless nature of family, true friends and simple acts like sitting and playing, and being one with a guitar or a pet. The album is one of Young's best and the film cradles these reflections on life with a lot of love (to cop a Young song title).

"It's a Dream," "The Painter," "This Old Guitar" and "When God Made Me" are classic Young ruminations, and he delivers them in that distinctive and unmistakable fashion that is simultaneously world-weary and childlike, with stripped-to-the-bone lyrical sparseness. The tender, vulnerable "Falling off the Face of the Earth" is another real gem. During the second half of the concert, Young focused on his past catalog, from "I Am a Child" through his first Nashville album, *Harvest* ("Heart of Gold," "Old Man") to the title song of *Comes a Time* and a stirring version of Ian & Sylvia's "Four Strong Winds." Throughout the night, Young sounded totally in the moment, emotionally, and

NEW YORK METRO

by David Weiss

he got magnificent support from Emmylou Harris, the Fisk Jubilee Singers, the Nashville String Machine and his great band.

I wondered, as I was driving to the premiere at the Green Hills Cinema, if the movie would capture the magic, but from the moment the picture started to roll, it was clear that this was a beautifully rendered labor of love; every moment is exquisitely framed, and each of the players and singers is highlighted.

The music, recorded in David Hewitt's Remote Recording Services truck and engineered and mixed by Chad Hailey and Rob Clark, is every bit as good. People sitting around me were so taken with the "you are there" quality of the mix that they were moved to applaud when the audience in the movie reacted. It sounded about that real from where I sat. The pre-concert interviews and between-songs chatter all added to the significance of the event. Even the shots of Nashville and its landmarks actually made it look like a "real" city, but with the kind of magic and mojo one might find in films shot in Memphis—a place that certainly has no shortage of murky vibe.

The music for the movie was mixed in surround at Blackbird Studio D on a Trident 80B. The mix went to a 2-inch, 8-track Studer

—CONTINUED ON PAGE 122

How many millions of tons in raw materials would it take to build a bridge from Manhattan clear to Ethiopia? If the mind boggles at the thought of all that concrete and steel, take comfort: The feat has actually been accomplished with a single CD. That's the idea behind *Bole2Harlem* (www.bole2harlem.com), an astonishingly original new album created by a visionary artist and two singular producers.

The roots of this only-in-New-York record aren't so unusual, starting with Saturday night jam sessions in an out-of-the-way downtown nightspot. In this case, however, the site was a Moroccan/French restaurant called L'Orange Bleue, which had become a favorite weekend haunt for the busy production team of Steve Mac and David Schommer and their friend Maki Siraj, an Ethiopian transplant with a day job as a computer whiz and a sharp gift for rhyme and rhythm.

"I have a collection of drums at this restaurant," Schommer explains. "On Saturday nights, we have a couple of drinks, get crazy, and after midnight, it turns into a dance club. Maki and I were always playing drums together, and then I started experimenting with remixing Ethiopian tracks, just to hear what it would sound like.

"My father was a teacher in Ethiopia in the 1950s, so I grew up with Ethiopian friends," Schommer continues.

"They have such a rich cultural heritage, and it's the most distinctive musical style I've ever heard. I took a trip there about five years ago, and when I was there, I found there was a new version of hip hop coming out and it was kind of bad. Big pimping works here, but maybe not so well in Ethiopia with this 3,000-year-old culture. I was interested in taking traditional Ethiopian song themes and traditional sounds and mixing them

PHOTO: DAVID WEISS



Bole2Harlem producers David Schommer (front) and Steve Mac

with what is in Harlem right now, because Harlem is the gateway to African music in New York City. Likewise, Bole is the airport in Addis Ababa, which is the gateway to Ethiopia."

Realizing that they had a unique opportunity to fuse up-to-the-minute production techniques with deep flavors of hip hop, reggaeton, global music and traditional Ethiopian rituals, many of which are rooted in highly rhythmic—often politically charged—chants and boasts, Schommer and Siraj got to work making simple song shells in Spectrasonics' Stylus RMX and Atmosphere for Siraj and other singers to work over. While the pair collaborated at Schommer's spacious personal studio, Sounds of the Mushroom, the fifth floor of a Harlem walkup on 123rd Street, they speeded production via the efficient workflow honed in Mac's commercial music facility, Mac Sound (www.macsoundmusic.com), located 95 blocks downtown within the post facility wild (child).

"We have the best of both worlds," Mac says. "Up here [in Harlem], we have this amazing vibe: It's like going to the woods

—CONTINUED ON PAGE 122

PHOTO: BOB CLARK



Emmylou Harris tests out microphones at Brian Ahern's studio.

CHAPMAN RECORDING REVISITS ANALOG KANSAS CITY STUDIO EXPANDS TRACKING ROOM

While many studios have either converted to digital consoles or opted for a workstation-compatible control surface, Chapman Recording (www.chapmanrecording.com) in Kansas City, Mo., decided to revert back to the analog format, purchasing a Studer A827 2-inch 24-track machine and replacing the Yamaha O2R in Studio B with a tried-and-true SSL 4056 E/G console. They're not completely old-school though; the studio still has its 56-input/output Pro Tools HD Accel 3 rig, which they use in tandem with the SSL/Studer combo.

"Our business changed," explains studio owner Chuck Chapman. "We still bring in a lot of corporate and ad agency work, but we've developed more band business, which wasn't as prominent two to three years ago."

With an increase in full-band tracking sessions, Chapman upgraded Studio B "at the highest level we could afford." They bought the Studer first, and then acquired the SSL. Their 16 channels of Neve mic pre's, which previously served as a sidecar to the O2R, remain on hand, as well as the studio's Tube-Tech, Avalon, Summit and Focusrite pre's; EMT stereo plate reverbs; and a wealth of microphones. Chapman also purchased a Rupert Neve-designed Legendary Audio Masterpiece analog mastering system. Clients who prefer to work on a digital desk can record or mix in Chapman's smaller, but identically equipped (save for the SSL), Studio C.

Chapman also added about 800 square feet to the Studio B live room, nearly doubling its size. Ben Harris of Nashville-based Southeastern Design oversaw the expansion, which includes the addition of a large drum booth, a guitar booth and two amp closets. A new Formula Sound Cue 10 headphone



Chuck Chapman (front) and chief engineer Rob Rebeck at Chapman Recording's "new" SSL

system was also installed.

Most of Chapman Recording's music clients are local artists of various genres, although the studio does host a fair amount of regional talent from Detroit, Chicago, and other parts of the Midwest and Southwest. Rapper Tech N9ne wrapped up his latest album on the SSL, as did Grant Rice with producer Seven. Major-label acts such as Jewel and John Hiatt, among others, visit Chapman Recording if they need to cut a quick vocal while on the road, for example.

Most of Chapman Recording's music clients hail from Kansas City, although they do bring in a fair amount of regional talent and touring national acts.

BEHIND THE GLASS

A TEMPEST IN TEMPE DEFRANDESCO RECORDS



Vibist Bobby Hutcherson and Joey DeFrancesco (right), cool off at Tempest Recording after working on Organic Vibes.

Hammond B3 soloist Joey DeFrancesco stopped at Tempest Recording in Tempe, Ariz., to record material for his new Concord Jazz disc, *Organic Vibes*. He brought in not only a 1959 B3 belonging to another master jazz organist, the late Jimmy Smith, but also an ace band that included Jake Langley on guitar, Bobby Hutcherson on vibes, George Coleman on tenor saxophone, Ron Blake on saxophone and Byron Landham on drums. Studio owner Clarke Rigsby engineered the album; Seth Pleasant mixed.

CLEARLY HOUSTON TIERRA HOSTS JOHNNY NASH



From left: Engineer Randy Miller, Johnny Nash, producer Pat Hunt and engineer Glenn Wheeler share a whole lotta love at Tierra Studios.

Reggae artist Johnny Nash came out to Tierra Studios in Houston to finish his upcoming album, which features a remix of the classic song "I Can See Clearly Now." Pat Hunt produced the track, while Randy Miller and Glenn Wheeler engineered. An essential force behind the mainstream acceptance of reggae music, Nash scored his first chart hit in 1958 with his version of Doris Day's "A Very Precious Love." In 1965, his R&B ballad "Let's Move and Groove Together" reached the Top 5 in the States, and was an even bigger hit in Jamaica. He's recorded off and on ever since.

MASTERS CORNER

LOCKETT'S OPUS BASSIST MASTERS AT CAPITOL



Tommy Lockett (left) and mastering engineer Robert Vosgien at Capitol's Mastering Room 1

Bassist Tommy Lockett mastered his new solo CD, *Opus*, at Capitol Records Mastering in Hollywood. The disc features Lockett on bass, Steve Weingart on keyboards, Jeff Miley on guitar and John Lewis on drums. The self-produced album was recorded at Heat Records' Woodland Hills, Calif., studio. Robert Vosgien mastered the project.

INDIE MASTERING RULES NASHVILLE PROJECT UPDATE



Eric Conn (right) and Don Cobb flank Warren Pash

Independent Mastering in Nashville has seen a variety of projects lately. Namely, metal band Loadstock's new CD, *Beautiful Mistake*, was mastered by Eric Conn and Don Cobb; country artist Mark Collie's upcoming release was mastered by Conn and Cobb; and there was power pop singer/songwriter Warren Pash's latest, with his band, the Plastic Rulers.

TRACK SHEET

MIDWEST

Engineer James Harley stopped by Rax Trax (Chicago) to mix the upcoming release from KFAN's Chris Hawkey...Chicago artist/producer Wil Diaz worked on his new reggaeton project at Up on the Roof Recording (Lombard, IL) with engineer Mark Blas and co-producer Carlos Claudio.

SOUTHEAST

The Raconteurs recorded their debut, *Broken Boy Soldiers*, at Ardent Studios (Memphis), which celebrates its 40th anniversary this year...Doppler Studios (Atlanta) has been slamin' with work: Stacie Orrico worked on her next album with producers Novel and Toy Reyes, and engineer Carlton Lynn; Andre 3000 produced sessions for *OutKast* with engineer Ralph Cacciurri; Bobby Valentino recorded vocals for his next album, produced by Polow, 1500 and D-Lite, and engineered by Cacciurri and Nico; Ludacris tracked some verses for his next release with producer L.T. Moe. Monica recorded vocals with producer Sean Garrett and engineer Scott Naughton for her next CD; and Ruben Studdard continued work on his upcoming release.

SOUTHERN CALIFORNIA

Levels Audio Post (Hollywood) mixed and provided audio post for the Rock and Roll Hall of Fame induction ceremony that aired on VH1 in March...Guitar whiz Jonny Lang mastered his new album at Bernie Grundman Mastering (Hollywood). Drew Ramsey co-produced with Lang, and Brian "Big Bass" Gardner engineered. Mixer James Hartley also stopped by to work on Chris Hawkey's upcoming release with engineer Chris Bellman...Ozomatli recorded basic tracks for their forthcoming album in Ocean Way's (Los Angeles) Studio B. K.C. Porter co-produced the album with the band, with longtime Ozomatli engineer Robert Carranza at the board...Matt Dusk and his co-producer Terry Sawchuk visited Capitol Studios (Hollywood) to record and mix portions of Dusk's new album with Al Schmidt.

NORTHWEST

Nettleingham Audio (Vancouver, WA) engineer Kevin Nettleingham mastered releases for Portland area artists Seven Year Tango, Tim Jensen, Professor Gall, Filthy White Trash, Blood Freak and Tapas Musica. He also began tracking a new solo piano release by Vancouver's Colleen Adent; Copenhagen, Denmark's Gorilla Angred; and a new lullaby CD from Emile Pandolfi. Producer Terry Robb also came in to master new CDs from Eric Riley and Renee Hill...Dave Matthews recently recorded new material at Robert Lang Studios (Seattle) with producer John Alagia and engineer Justin Armstrong. He was followed by rock band Drop Six,



In town for the inaugural San Jose Drum Pro Live, Dennis Chambers stopped by Studio Hibiki (Mountain View, Calif.) to track drums for Scott Woods' new CD. Myron Dove produced, Hibiki's Peter Thomas engineered. Pictured from left: Dennis Chambers, Scott Woods, Peter Thomas and Myron Dove.

who was in mixing with producer/engineer Toby Wright. At Michael Cooper Recording (Sisters, OR), Mix contributing editor Michael Cooper engineered Academy Award-winning actor William Hurt's narration of Ernest Hemingway's novel *The Sun Also Rises* for Simon & Schuster Audio. Simon & Schuster senior producer Elisa Shokoff produced the sessions.

NORTHEAST

Ron Carter came to Bedford Studio (NYC) to record album tracks with Andy Tommasi...Avatar (NYC) welcomed David Kahne, in producing *Astra Heights* with engineer Rob Brill; Paula Cole came in with producer Bobby Columby and engineer James Farber; *They Might Be Giants* stopped by with producers the Dust Brothers and engineer Pat Dillet; The Cringe recorded with producer John Cusimano and engineer Steve Hardy; Roberta Flack rerecorded with producer Jerry Barnes and engineer Roy Hendrickson; Dave McNair mixed a new album for Icarus Line, produced by Mike Mussmano; James Farber recorded and mixed projects for Dave Holland and Joe Lovano; John Mayer came in to overdub for his next release, produced by Steve Jordan and engineered by Dave O'Donnell; and Fred Kevoikian mastered new releases by Spider Rockets, Joan as Police Woman, Papercranes, Don Byron and Sonny Rollins.

SOUTHWEST

SugarHill Recording Studios (Houston) has partnered with Pacifica Radio Network to launch *The SugarHill Sessions* music radio show on 90.1FM KPFT. Local funk/rock group ASHS recorded and mixed their debut at SugarHill with engineer John Griffin, available now at www.ashs.us...Michael Stevens Productions (Houston) finished production on an upcoming *Classic Fairy Tales* DVD set for Alpha DVD. The set features the voices of local broadcast personalities Kelly Ryan and Heather Walters. ■

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L.A. GRAPEVINE FROM PAGE 116

"The high-end clients are still working," Sides points out. "In the case of acts like the Stones and Neil Diamond, their core audience guarantees them at least a million in sales; the problem is there are no longer any platforms for artists who are over 40 years of age, and yet they have a vast audience and they're making a fortune touring. But all these guys have to do albums, and budget's not an issue, and the label's not even paying for it—it's *them* paying for it." Furthermore, Sides believes the music biz is rebounding. "It's like night and day from where it was two years ago," he asserts. "I thought the music business as

striking three-room facility in the Santa Monica Mountains above Calabasas Village. "We appeal largely to the Calabasas community," says staff engineer Franklyn Jones, whose father Frank built Castle Oaks in 1984 and still manages the facility. "There are a lot of local producers and artists who use our place quite a bit. We also do a lot of Foley and post-production—television series for Disney and Comedy Central, and major features as well." When I spoke to Jones, smooth jazz group Seawind was tracking with engineer Steve Sykes, with the Rippingtons and Russ Freeman due in next. Dave Grusin has also booked some time.

"The main room that everyone's tracking in is Studio A, and that's the one that's most consistently booked," Jones points out. That studio is equipped with a Neve 8038—"a great old board with really warm, beautiful sound," according to producer Marshall Altman, who worked at Castle Oaks recently.

On the pro-level residential studio front, it has now been a year and a half since Brad Wood turned the garage of his Valley Village home into a studio and the guest house into his control room. Wood's first project at Seagrass, as he calls it, was Ben Lee's well-received *Awake Is the New Sleep* for New West, and the latest is with MeWithoutYou, his



Moby and engineer Andy Brohard in the Village's Studio A

I knew it had ended. It either changes or it goes away, and obviously it *is* changing."

In Studio City, Randy Alpert decided to close high-end mix room Scream after more than 18 years—but he isn't leaving the business. Instead, he's shipped all the equipment to a newly built facility on the shore of Merritt Island, Fla. After Alpert shows me some photos, I'm forced to agree that the setting is somewhat more picturesque than the stretch of Ventura Blvd. where the purple-painted building now sits vacant. He explains that A-list mix engineer Mark Endert will use the new room "90 percent of the time," and he expects fellow radio mix specialist Tom Lord Alge to come up from South Beach to work there as well. "I modeled the room to be exactly like the original Scream," Alpert says. "I'm also building a place in Hawaii and looking at building another place in Aspen. With things like iChat and ISDN, we can work simultaneously with artists and producers whether they're in a Holiday Inn, on tour in Iowa or on vacation with their families in Madagascar." Randy will run the show from his home in Calabasas.

Speaking of which, I checked in on activities at Castle Oaks, an architecturally

second project with the buzzing Christian hard-rock quintet. In between, Wood has made constant use of his cozy backyard facility, recording six albums there last year. While all the foot traffic has trampled his lawn, Wood isn't complaining. These projects enabled him to upgrade to a Pro Tools HD 3 Accel system. "I also purchased a really nice Krups coffee maker and electric tea kettle," Wood points out, "along with new sod for the backyard."

Jim Scott, one of my go-to guys when I was doing A&R—because he's a skillful, entertaining and confidence-inspiring dude—has opened his own studio in Santa Clarita, equipped with a Neve 8048, two Neve BCM 10s and Pro Tools HD 3, as well as his personal collection of vintage mics, compressors, amps, guitars, drums and keyboards. He's currently mixing and overdubbing there, with plans for a tracking room.

Similarly, while Marshall Altman gets ready to start work on his home studio, he's very pleased with his current situation. "I have a little overdub room at Oasis Mastering, Eddie Schreyer's place on Burbank between Pass and Hollywood Way," he tells me. "Eddie's busier than ever,

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I'm doing a ton of work—it's pretty exciting. It's really comfortable and his room sounds amazing. I have a room upstairs with an iso booth and I'm using it just for vocals and guitars." Altman likes House of Blues and Eldorado for tracking. "Eldorado is a great room in Burbank. Rob Strickland bought it from Gary Gunton. Rob Cavallo's holed up in there right now. Eldo, which is a big gray building smack in the middle of Burbank, is completely the opposite of House of Blues, which is a comfortable, vibey, cool room and away from everything up in the hills of Encino."

I caught up with my old pal Bruce Duff, who's been bouncing between playing music, producing it and writing about it for longer than he cares to admit—and who for the last several years has been working as the publicist for Hollywood's Knitting Factory. Messiaz, a production team consisting of Duff and Streetwalkin' Cheetah Frank Meyer, is remixing *The Old #2*, a solo country album from Supersuckers leader Eddie Spaghetti, which he promises will be "beyond hick-hop." Says Duff: "We work at the illustrious Toneduff Studio, which is in my home. The gear is so modest I hesitate to mention it—a simple Digi 001 Pro Tools system made all the more efficient by a zillion plug-ins and a bunch of old analog effects. The only things we don't record here are the loud rock 'n' roll rhythm sections, which we track at Ton in Redondo Beach. We do everything else right here and it sounds great."

So, from The Village to Toneduff, people are making music and feeling good about the work they're doing. It would appear that reports of rock 'n' roll's demise have once again been greatly exaggerated. ■

Send L.A. news to Bud Scoppa: bs7777@aol.com.

NASHVILLE SKYLINE FROM PAGE 117

827, and along with the stems, was converted through 24 channels of Pacific Microsonics HDCD converters. Then, all that information was sent to the soundtrack and re-recording mixer Tom Fleishman, who was assisted by FOH Mulligan. Post-production was done at Soundtrack in New York City.

Hailey says the Pacific Microsonics conversion is "very fine. Neil is adamant about maintaining quality all the way through the entire recording and mixing process."

Hailey was also very complimentary to Arthur "Midget" Sloatman, the chief technical engineer at Blackbird: "Arthur was instrumental in maintaining all the machines and the lock that was necessary to complete

the mix. Blackbird is a great facility, and the studio service was outstanding." All I can say is, if you are a serious Neil Young fan, you'll absolutely love this picture.

As I'm in this groove, I have to mention that Harris is working on her next album with Brian Ahern, the production visionary behind her great early albums. I've heard a couple of tracks, which were engineered and mixed by Donovan Cowart, and the album is shaping up to be a classic. One of the songs I heard is a version of Joni Mitchell's "The Magdalene Laundries," which takes the song to an even more emotionally direct place than Mitchell's original does. It is like hearing this relatively overlooked song for the first time.

I managed to pull Ahern—who was working with Cowart at Easter Island Surround on a 32-song surround mix of *Jimmy Buffett Live at Wrigley Field*—to get some thoughts on how he approached making "The Magdalene Laundries." "I wanted to focus on the intimacy of the composition, which I felt was lost in the original Joni Mitchell recording," Ahern says. "I wanted Emmy's lips at the mic, while also recording resonance from her head and chest cavity. There is this whole thing about ribbon mics—how you can't get close to them. Well, I called Wes Dooley and he had such a mic that would deal with the requirements of both intimacy and proximity. It was a prototype DJ version of his highly successful R-84."

In approaching the mix, Ahern adds, "The multitrack recording was loaded with goodies, which I kept stripping away until the story of the song was compelling." One of the other songs slated to be on the upcoming album is "The Connection," an Ahern-produced recording of a song you can also find on Rhino's recent *The Very Best of Emmylou Harris: Heartaches & Highways*. Ahern says he had the song stashed away for years, awaiting the right time for it to be recorded; his instinct about this beautiful portrayal of longing paid off handsomely, winning the 2005 Grammy for Best Female Country Vocal Performance. ■

Send Nashville news to mrblurge@mac.com.

NEW YORK METRO FROM PAGE 117

and recording, this place is so vibey and quiet, and every room has a different acoustic architecture. When we go downtown, you have an amazing acoustically correct listening environment. During the day, you have this chaos of a commercial post facility, but at night, everybody goes away, and all of a

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sudden a string section and horns show up, and [the common area there] is incredible to start recording.

"At the same time, when I'm working on a commercial spot and I need some percussion, we'll exchange music files via Instant Messenger and Dave will record it [at Sounds of the Mushroom]. He's got a huge array of percussion instruments, and it would take a U-Haul to travel with it. This way, I can let him know what I need and get a session back in 20 minutes. We have a whole group of guys we're working with this way, contributing their specialty from their own natural environment."

Up in Harlem, the songs were happening quickly. The first tune written, "Bole2Harlem," came together in just 90 minutes, as Schommer, Siraj and two female backup singers laid down the vocals for the darkly strutting song, which matches Siraj's confidently engaging rap-style delivery against the women's sultry textures, evolving into growling line repetitions paired with high calls that go out like sirens into the darkness, all over hypnotic percussion and programmed beats. "Amet Bale" sways in the traditional Ethiopian 6/8 time, reflecting on holiday traditions with a deeply funky bass line. The entrancing "Enseralen Gojo" tells a love story that celebrates the ancient city of Harar, a fabled 900-year-old walled city that was built by a fierce king with five daughters of great beauty. For pure emotional inspiration, it may be hard to beat the intense groove, sprinting percussion and swelling triumphant vocals of "Endegena," toasting the subtle similarities of Ethiopia, Brazil and the music, energy and rhythms of its peoples.

Schommer took advantage of the flexibility of his space, using mics such as the Neumann M147 and U87, RØDE NT2 and AKG C1000 ("great on percussion") going into John Hardy M-1, Avalon 737 and Focusrite ISA mic pre's before hitting Pro Tools HD3 to capture spontaneous performances in the private-party atmosphere that pervaded each recording session. "No one else that I'm aware of has taken rap to this extent, lyrically," Schommer says. "Maki's like Jay-Z meets Humpty Hump, and the Amheric language is not as literal as English, so you can paint these really funny stories. So the notion was, 'Let's try a song. Come back next week, let's try another.' We wanted it to feel more like a collective than a solo album, and every song was about featuring different players, like Henok Temesken, who's a famous Ethiopian bass player, and Balla Tounkara, who plays a 21-string instrument called the *kora*. It was a very magical process. The most important thing is we were making

a record as an artistic experiment—we didn't set out to say 'We're going to write a hit song.' Let the music happen first, allow it to be the best song it can possibly be, push itself to its limits and push the next song as well."

As the songs multiplied in Harlem, the files made their way through cyberspace down to Mac's facility, where he applied his high-level talents working with Pro Tools HD 3 and listening on Dynaudio AIR 15 monitors to create advanced mixes, constantly sustaining the album's feeling that another exciting sonic event is always just a moment away. "It goes back to what we said earlier about the whole production process," Mac says. "Someone wasn't telling us to make this mix a hit. Instead, it was about treating each song individually with no pressure. I used plug-ins like SoundToys FilterFreak to turn instruments into percussive elements using filters. As far as EQ'ing and compression, there's nothing like mixing on Neves and APIs, which work at set detented gains and frequencies. When you have a plug-in, you have the ability to make frequencies super-thin and gain at micro-dBs, but then you're overdoing it. Instead, I would use plug-ins as if I were using old APIs so I wouldn't over-compress stuff. That comes from my experience working with real gear.

"When we recorded the horns, they went through a great mic and a clean pre, and sounded nice and clean, like on a Sting record," Mac recalls. "But that really wasn't what we were looking for, so to get the horns to sit in a spot so they weren't so in your face, we used the Pro Tools plug-in Lo-Fi, which has been around forever. It lowers the bit rate, I added a little distortion and it crapped the horns out and put them back. Also, the Sony Oxford is an amazing reverb. The sound is incredible—it feels like a Lexicon 300—and there's emulations in there of old EMT plate reverbs, which I use a lot on horns."

Though hit status was a low priority to its creators, the powerful sounds of *Bole2Harlem* make it an instant success story—uniquely capable of filling Western listeners with fierce national pride for a land they will probably never see. Meanwhile, the album's impact is already being felt in Ethiopia: The intrigue of a new kind of Africa-inspired music recorded in New York City is propelling Siraj to stardom in his homeland. "Ethiopia is the kind of place that literally responds to the music," Schommer says. "There's a political environment there, and right now, we know they need a little celebration. This is our gift back to Ethiopia." ■

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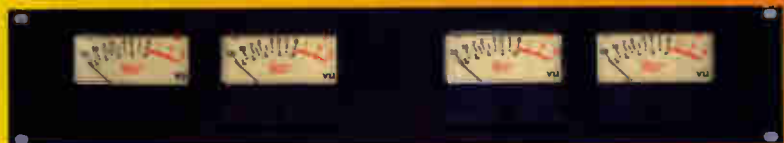
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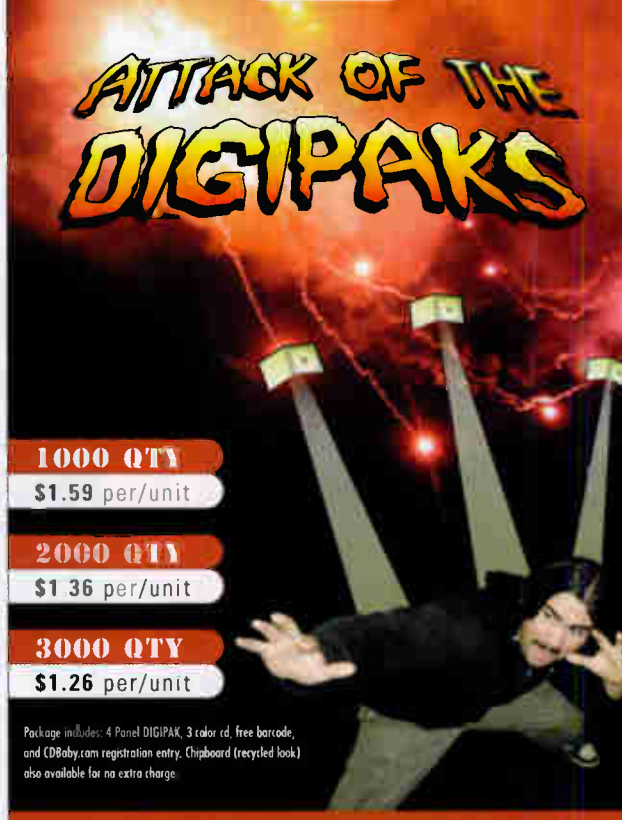
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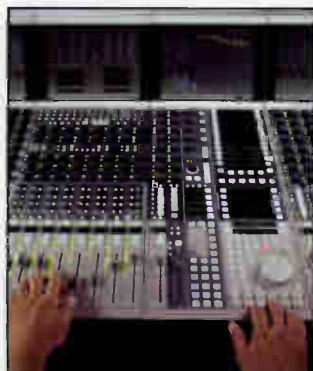


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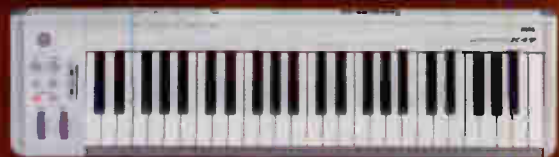
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MAKING IMPULSE RESPONSES

IRs are typically made two ways: the first method is playing a tonal sine sweep in any environment and recording it. The second method is firing a starter pistol in an environment and recording it. The recorded sweep (or gunshot) is loaded into the software, which analyzes the sound and models a reverb from it.

Sine Sweep: According to Audio Ease, using the sine sweep method is the most accurate method of reproducing the natural reverb of an environment. Altiverb has a sweep generator that will make an audio CD you can play on location. Be aware, though, that the software is finicky and requires that you record the head tone, the sweep, the silence that follows, and the tail tones for the software to do its job. On *Superman Returns*, we recorded a set of large spaces using JBL powered speakers and four Schoeps cardioid microphones in a dual ORTF configuration to get some great quad 'verbs.

Starter Pistol: This approach is useful for very big or remote environments like canyons, where lugging speakers powerful enough for big distances is cumbersome. However, in my experience, any sound that makes a crack and decay can be used. CO₂ pistols give a nice round sound, often translating better for voices than their sharper counterparts. Clapper boards and even balloon pops achieve great results as well, and these are particularly recommended when recording in public locations where a gun might lead to legal complications.

Any of the above methods can create very realistic sounding reverbs, but let's focus our attention to some of the more *unrealistic* possibilities—specifically, how to use Altiverb to achieve otherworldly sounds.



Altiverb offers samples of real acoustic spaces, and lets users capture their own favorite environments.

MANIPULATING IMPULSE RESPONSES

I often manipulate the impulse responses before loading them into Altiverb; I'll EQ out hums and do noise reduction with Waves X-Noise before using a new IR. But why stop there? Try pitching down an IR to create longer, deeper reverbs. Altiverb features a Room Size dial next to its Reverb Time dial; adjusting this knob will actually adjust the pitch up or down.

In fact, *any* sound can be used as an impulse response. This allows Altiverb to be used as a powerful sound design tool, not merely as a reverb device. Try replacing your starter pistol crack with an explosion, a thunder roll or a wave crash and you'll get some pretty insane results. I've run dialog through Altiverb using an underwater bubble as an IR to simulate underwater voices. On *Superman Returns*, we used the “ding” of a crystal vase as an IR for Marlon Brando's voice to resonate his dialog in the Fortress of Solitude. The “glassiness” of the crystal convoluted with Brando's voice creates an ethereal chime that matches his vocal inflection but sounds like it might be emanating from inside the crystal cavern's walls.

Try using the gear clicks of a ratchet as an IR to create a mechanistic voice or effect, or a computer beep to go robotic. A bumblebee's buzz or wind whistle will render other wacky results.

Altiverb's Reverse button is another great tool for manipulating IRs. Click this to reverse your IR sample. This is often useful if you want to ramp into a sound, and its effect on an IR is no different. For example, if you use a thunder crack as an IR and

reverse it, running a sound through Altiverb will create a “whoosh” effect. The tail of the thunder builds as we ramp up to the attack, creating the sense of building power that's very different from simply reversing the sound itself.

SURROUNDED BY 'VERB

You can even generate your own exotic pans (stereo or surround) with the IRs you make, creating your own surreal reflection patterns. Try some funky quad panning with your sound before loading it into Altiverb as an IR. Swirl your sound around the room with a surround panner and bounce it down to a quad set of files, each with the appropriate “.1,” “.2,” “.3” and “.4” extensions for Altiverb to interpret. When you run your sounds through this quad IR, they'll swirl around you in the same pattern. Sometimes, long decay tails will muddy up these intricate moves, so you may need to trim the tail down in Altiverb using the Reverb Time dial in the main screen or Reverb Tail Gain under the Damping & Gains screen.

DON'T LET YOUR 'VERB PERTURB

The Altiverb Forum at www.audioease.com is a great resource for solving problems and getting new ideas. There's also a treasure trove of free impulse responses available for download.

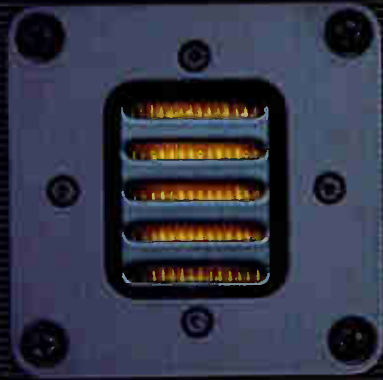
Altiverb will put sounds in *great*, realistic spaces. But a little experimentation will yield some exciting and unexpected results. ■

Erik Aadahl was a sound designer on Superman Returns.



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