

It's a Dog Eat Dog World



(Canine SubWooferus)

Subwoofers. The industry has a full smorgasbord of subs that all claim superior performance. Knowing that your purchase decision can effect the longevity of your studio, so many choices and proclamations make the selection process cause for serious indigestion.

Tannoy offers two simply powerful solutions. The PS110B (10 inch) project sub sports all the features and flexibility required for 5.1 multi-channel mixing. Most importantly, it's so affordable, multiple units can be obtained for true low frequency steering without putting you in the dog house. If you require high enough SPL to shake up your milk bone, then perhaps the exhilarating PS115B, (15 inch) sub may be the puppy you're looking for. Whatever your need, we guarantee a Tannoy sub will go down well.

Because the future of your business and perhaps your next meal ticket depends upon the performance of your mix, don't compromise by using inferior subwoofer products. Invest in proven performance because it's a dog-eat-dog world out there.



PS110B



PS110B with grill



PS110B Back



PS115B



PS115B Back



TOLL FREE DEALER ORDER HOT LINE: (FAX) 1-800-525-7081

Tannoy/TGI North America • 300 Gage Avenue, Unit 1 • Kitchener, Ontario, Canada N2M 2C8 • 519 745 1158 • Fax: 519 745 2364

www.tannoy.com

CIRCLE #003 ON PRODUCT INFO CARD

MIX[®]

PROFESSIONAL RECORDING • SOUND AND MUSIC PRODUCTION

JANUARY 2000, VOLUME 24, NUMBER 1

AUDIO

- 24 The Fast Lane:** Well, Y2Came...And Here We Are
by Stephen St. Croix
- 28 Insider Audio:** On Hold, Waiting for the Call Back—Who's Afraid of Tech Support?
by Paul D. Lehrman
- 34 Getting a Drum Sound:** Four Engineers Talk About the Challenge *by Randy Alberts*
- 42 Project Studio Projects:** A Look at Three Great CDs Made at Home
- The Foo Fighters Rock in Ol' Virginny
by Robyn Flans
 - Stan Ridgway: The Music Is the Movie
by Blair Jackson
 - Marshall Crenshaw: Thriving in His Own World
by Blair Jackson



PAGE 34



PAGE 124

144 Recording Notes

- Carlos Bess on Working With Wu-Tang Clan
by Dan Daley
- Jason Miles Pays Tribute to Weather Report
by Gary Eskow
- Classic Tracks: Thomas Dolby's "She Blinded Me With Science" *by Tim Morse*
- Cool Spins: The *Mix* Staff Members Pick Their Favorite CDs

SOUND FOR PICTURE

- 74 Walking "The Green Mile":** Designing the Soundtrack for Frank Darabont's Death Row Drama
by Tom Kenny

PAGE 64



- 56 The State of the 8-Bus Console:** Analog or Digital—Get on Board *by Roger Maycock*
- 64 Bryan Adams and The Warehouse:** One on One in the Studio *by Bob Clearmountain*
- 72 The Project Studio:** Dave Kershaw's The Glass Elevator *by Tim Moshansky*

PRODUCTS

- 88 **Preview/Hot Off the Shelf**
- 92 **Hardware and Software for Audio Production**
- 94 **Technology Spotlight:**
The Virtual Studio—
RocketNetwork Launches
Online Collaborative Recording
by Philip De Lancie
- 102 **Field Test:** WaveFrame Version
6.5 Digital Audio Workstation
by Michael Denten
- 110 **Field Test:** JoeMeek SC4 Stereo Compressor
by Barry Rudolph
- 114 **Field Test:** Requisite Audio PAL Tube Mic
Preamp/Audio Limiter *by Walt Szalva*
- 118 **Field Test:** Brauner Valvet Tube Microphone
by Ty Ford
- 208 **Power Tools:** Sonic Foundry Acid—Keeping
Time With Loop-Based Software
by Doug Beck



PAGE 110

LIVE SOUND

- 122 **Why Louder Sounds Better** *by Mark Frink*
- 123 **Tour Profile:** Laurie Anderson
by Chris Michie
- 124 **All Access:** The Bridge School Benefit
by Steve Jennings
- 142 **New Sound Reinforcement Products**

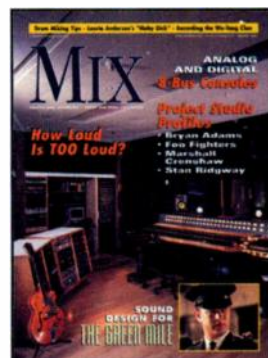


PAGE 28

DEPARTMENTS

- 8 **From the Editor**
- 10 **Feedback**
- 16 **Current**
- 20 **Industry Notes**
- 158 **Coast to Coast** (Includes
L.A. Grapevine, NY Metro
Report, Nashville Skyline,
Project Studio Spotlight:
Mixer Jamey Staub and
Blues Explosion's Russell
Simins Find Balance at
Astoria Lounge, Sessions
& Studio News)
- 170 **Studio Showcase**
- 176 **Ad Index**
- 185 **Marketplace**
- 191 **Classifieds**

On the Cover: A vintage 58-input Neve 8078 from Air Studios in London sits at the center of the main tracking room at Bryan Adams' The Warehouse Studio, in Vancouver, B.C. Designed mainly by technical director Ron Vermeulen, the three-studio complex inhabits a historic downtown building. For more on the studio see Bob Clearmountain's interview with Adams on page 64. **Photo:** Berndt Luchterhand/Flashpoint Photography. **Inset photo:** Ralph Nelson/SMPSP ©1999 Castle Rock Entertainment.



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



*Actual unit is 19" wide and will not fit in your computer drive bay.



Upgrade Your 600 MHz to 96 kHz

Introducing the world's first professional tube mic pre with dbx's proprietary Type IV™ conversion using the latest high-end A/D converters and **24-bit, 96kHz** all standard. The 386 also features our own TSE™ technology, which preserves the qualities of analog so you can take your signal straight to your desktop without sacrificing warmth. And taking the signal straight to your digital work station also means you no longer have to buy a separate converter box or rely on your sound card converters.

So, what else have we packed into the 386? For starters it includes features you would demand from a high-end mic pre such as:

- +48V phantom power
- 235V tube plate voltage
- Phase invert switch, and low cut filtering
- Selectable sampling rates of 44.1 kHz, 48 kHz, 88.2 kHz, or 96 kHz
- Selectable dithering and noise shaping
- Separate analog and digital output controls
- 12 segment LED meter for monitoring your analog or digital levels
- Convenient front panel instrument input jack
- Rear Panel mic and line inputs and outputs, word clock sync input and output, and both AES/EBU and S/PDIF outputs

How much would you expect to pay for a mic pre with all these features? A thousand? Eight hundred? Less than six hundred? **You're getting warmer.**

Visit www.dbxpro.com to find out how you can upgrade your home workstation to 96kHz for under six hundred bucks (and while you're there register to win some free stuff).

Tube Pre 386

dbx

PROFESSIONAL PRODUCTS

H A Harman International Company

www.dbxpro.com

CIRCLE #004 ON PRODUCT INFO CARD

WRN

FROM THE EDITOR

WELCOME TO THE NEXT MILLENNIUM: NOW WHAT?

Welcome to 2000. It's comforting to know that most of Earth's residents safely made the millennial transition, despite some guy's ominous predictions made five centuries ago. However, the truth can be found right here in *Mix*: Turn to Stephen St.Croix's column for an accurate accounting of Y2K's real effect. But now that we're here, where do we go?

Given today's rate of technological change, predictions from 20 years ago provide little help in seeing what's ahead. In those pre-CD, pre-MTV, pre-DVD, pre-MP3, pre-DAW, pre-DAT, pre-DOS, pre-MIDI, pre-MADI, pre-fax, pre-Mac, pre-AOL, pre-cell days, the consensus was that audio production would be all-digital by now, analog would be long forgotten and we'd be zipping across the cosmos in gravi-cruisers. Nobody expected that tube gear and vinyl records would have evolved into cult-worship status, and no one foretold the impact of the Internet.

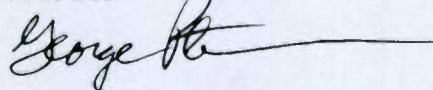
Beyond industry chat rooms, Web sites and newsgroups, the Internet holds possibilities we've barely explored. On-demand translations of Web text have removed the language barrier from browsing or information searches. And today's desktop video revolution will fuel Web-based TV networks. Aside from choosing from a million virtual equivalents of *Wayne's World*, this opens doors for broad-based and narrow-niche providers, and with decent—or even indecent—content, the audience is there. Who will be first to air *The Pultec Hour* or *M/S Mic Monthly*?

Meanwhile, Internet business-to-business commerce is poised to change the infrastructure of pro audio. Long-distance overdubs, ADR or file delivery for client approvals are obvious examples of electronic transactions, but studios or rental companies could offer virtual access to high-end outboard gear. Users could log on, send a file, parameter tweak via MIDI and then download the processed version, printing effects to virtual tracks on a DAW. Studios and sound companies could order parts and spares directly from manufacturer Web sites and have vital components delivered overnight. While we're at it, a specialized online store for common supplies—connectors, adapters, paper tape, duct tape, Sharpies, recording tape, CD-R blanks, maintenance chemicals, head cleaners, replacement bulbs, cases of batteries, etc.—could offer a quick, one-stop shop for studio operators and production tour managers. As for equipment purchases, online demos would let dealers or manufacturers provide real-time auditions using the buyers' own program material and onscreen ordering—without leaving the comfort of a studio's PC.

However, there is a dark side to this: The 'Net may have proved that Orwell was right—albeit 15 years late—and if Big Brother himself is not watching, then at least somebody's brother (or sister) is peering over our cyber-shoulders. Want proof? Enable your browser's "cookie alert" function and spend an evening surfing the Web: You may be surprised at the number of sites that keep records of your visit. And thanks to services such as the "Posting History" callout at *deja.com*, you can instantly tell whether the person who just flamed you on *rec.audio.pro* has been posting on the *alt.sex.aliens* newsgroup. Sometimes technology can be so sweet...

We're on the cusp of a revolution—a *real* revolution—and opportunities abound for the creative entrepreneur. The rest is up to you.

Make it so!



George Petersen



Mix magazine is published at 6400 Hollis St., #12, Emeryville, CA 94608 and is ©2000 by PRIMEDIA Intertec Publishing Corp. *Mix* (ISSN 0164-9957) is published monthly. One year (12 issues) subscription is \$46. Single copy price is \$5.95, back issues \$6.00. POSTMASTER: send address changes to *Mix* magazine, P.O. Box 1939, Marion, OH 43306. Address all other correspondence to *Mix* magazine, 6400 Hollis St., #12, Emeryville, CA 94608; 510/653-3307; fax: 510/653-5142. Periodical class postage paid at Oakland, CA, and additional mailing offices. Editor Responsible (Belgique), Christian Desmet, Viastraat 92, 3090 Overijse, Belgium. This publication may not be reproduced or quoted in whole or in part by printed or electronic means without written permission of the publishers. Printed in the USA. Canadian GST #129597951. Canada Post International Publications Mail Product (Canadian Distribution) Sales Agreement #0478733.

PUBLISHER Jeffrey Turner

EDITOR George Petersen

EXECUTIVE EDITOR Blair Jackson

MANAGING EDITOR Tom Kenny

ASSOCIATE EDITOR Barbara Schultz

TECHNICAL EDITORS Sarah Jones Chris Michie

COPY EDITOR Kimberly Chun

EDITORIAL ASSISTANT Anne Eickelberg

SOUND REINFORCEMENT EDITOR Mark Frink

NEW TECHNOLOGIES EDITOR Philip De Lancie

LOS ANGELES EDITOR Maureen Droney

EAST COAST EDITOR Dan Daley

NEW YORK EDITOR Gary Eskow

CONSULTING EDITORS Paul Lehrman Stephen St.Croix

TECHNICAL CONSULTANT Roger Maycock

FILM SOUND EDITOR Larry Blake

CONTRIBUTING EDITORS

Rick Clark Michael Cooper Bob Hodas

ART DIRECTOR Tim Gleason

ASSISTANT ART DIRECTOR Kay Marshall

GRAPHIC DESIGNER Mika Chisaki

GRAPHIC ARTIST Wendy Shiraki

PHOTOGRAPHY Steve Jennings

MARKETING DIRECTOR Karen Wertman

SALES PROMOTIONS MANAGER Julie Dees

SALES PROMOTIONS COORDINATORS

Lauren Gerber Robert Irwin

SALES PROMOTIONS GRAPHIC DESIGNER Alex Butkus

EASTERN REGION

5 PENN PLAZA, 13TH FLOOR

NEW YORK, NY 10001

EASTERN ADVERTISING DIRECTOR

Michele Kanatous 212/613-9711

EASTERN ADVERTISING MANAGER

Gregory Sutton 312/609-4295

WESTERN REGION

3575 CAHUENGA BLVD., SUITE 350

LOS ANGELES, CA 90068

WESTERN ADVERTISING DIRECTOR

Terry Lowe 323/845-1881

WESTERN ADVERTISING MANAGER

Shawn Yarnell 510/653-3307

MIX MAGAZINE

6400 HOLLIS ST., SUITE 12, EMERYVILLE, CA 94608

510/653-3307

SALES ADMINISTRATION MANAGER Dan Hernandez

SALES ASSISTANTS

Alex Boyd Marianne Moro Mari Stancati

CLASSIFIEDS & MARKETPLACE MANAGER

Robin Boyce-Trubitt

CLASSIFIEDS SALES ASSISTANT Jef Linson

CLASSIFIEDS ASSISTANTS Monica Cromarty Mark Hopkins

FACILITIES SALES MANAGER Shawn Langwell

DIRECTOR, SPECIAL PROJECTS Hillel Resner

DIRECTOR OF OPERATIONS AND MANUFACTURING

Anne Letsch

PRODUCTION DIRECTOR Georgia George

ADVERTISING PRODUCTION COORDINATOR

Jessica Durtlinger

ADVERTISING PRODUCTION MANAGING COORDINATOR

Liz Myron

PRODUCTION COORDINATOR Jeremy Nunes

PRODUCTION ASSISTANT Douglas Ausejo

COMPUTER SUPPORT TECHNICIAN Erik Shank

CIRCULATION DIRECTOR Phil Semler

CIRCULATION COORDINATOR Austin Malcomb

BUSINESS MANAGER Cindy Elwell

ADMINISTRATIVE COORDINATOR Michael Devine

ADMINISTRATIVE ASSISTANT Elizabeth Price

RECEPTIONIST Carla Green

An INTERTEC®/PRIMEDIA Publication

CHAIRMAN Ray Maloney

PRESIDENT AND CEO Cameron Bishop

CHIEF OPERATING OFFICER Ron Wall

VICE PRESIDENT, ENTERTAINMENT DIVISION John Torrey

DIVISION DIRECTOR OF MARKETING Stephanie Hanaway

PRIMEDIA Information Group

PRESIDENT Curtis Thompson

PRIMEDIA Inc.

CHAIRMAN AND CEO Tom Rogers

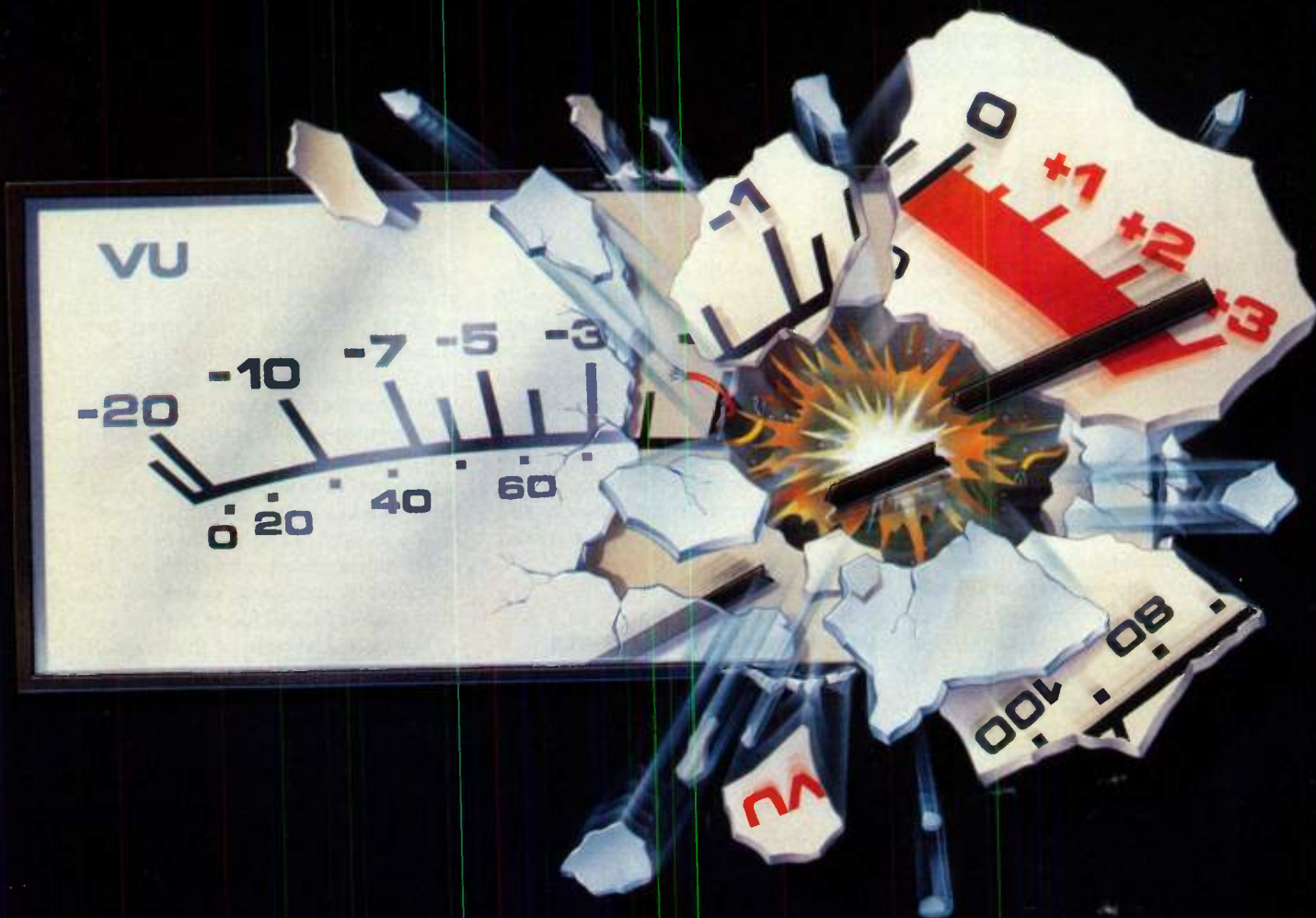
PRESIDENT Charles McCurdy

VICE CHAIRMAN Beverly C. Chell

Subscription Information: For subscription inquiries and changes of address contact: *Mix* magazine, P.O. Box 1939, Marion, OH 43306 or call 800/532-8190. Outside the U.S., call 740/382-3322. Send back issue requests to *Mix* magazine, 6151 Powers Ferry Rd. N.W., Atlanta, GA 30339-2941 or call toll-free 877/296-3125. Outside the U.S., call 770/618-0219.

NATIONAL EDITORIAL, ADVERTISING AND BUSINESS OFFICES, 6400 Hollis St., #12, Emeryville, CA 94608; 510/653-3307; fax: 510/653-5142. Web site: www.mixonline.com. PHOTOCOPY RIGHTS: Authorization to photocopy items for internal or personal use of specific clients is granted by PRIMEDIA Intertec Publishing, provided that the base fee of U.S. \$2.25 per copy, plus U.S. \$00.00 per page is paid directly to Copyright Clearance Center, 222 Rosewood Dr., Danvers, MA 01923 USA. The fee code for users of this Transactional Reporting Service is ISSN 0164-9957/1997 \$2.25 + \$00.00. For those organizations that have been granted a photocopying license by CCC, a separate system of payment has been arranged. Before photocopying items for educational classroom use, please contact CCC at 508/750-8400. Organizations or individuals with large quantity photocopy or reprint requirements should contact Cherie Woods at 913/341-1300. Microfilm copies of *Mix* are available by calling/writing Bell & Howell Information and Learning, 300 N. Zeeb Rd., P.O. Box 1346, Ann Arbor, MI 48106-1346; 313/761-4700; 800/521-0600.

Founded in 1977 by David Schwartz and Penny Riker Jacob



PUSH IT TO THE PEGS.

Introducing GP9, Grand Master™ Platinum. The ultimate in analog audio mastering media from the global master of sound – Quantegy.

With GP9's increased output and lower noise, you can lay down a signal hot enough to melt your



meter. GP9 is also virtually shed-free, so you never risk losing a note or your sterling reputation.

It took Quantegy 40 years to produce a tape this good. It'll take you about 40 seconds to realize it was worth the wait.



Phone 800-752-0732 | www.quantegy.com
CIRCLE #005 ON PRODUCT INFO CARD



FEEDBACK

You may have noticed that our "Letters" section has been missing from the past few issues. Well, we had our own Y2K bug a little early here and the routing system went down on our e-mail server. So here is a little catching up. More to come. —Eds.

LEHRMAN THE WEB MASTER

Paul Lehrman's piece in the June issue, "Fuss and Bother over Internet Audio," is the only intelligent, well-balanced writing I have ever seen on the subject. The bulk of the overwrought drivel that's been put out on this, from John Dvorak to Jim Seymour to Jim Heid, is so far off the mark that it's downright dangerous.

Well done. You've helped keep things in perspective, no mean feat in this age of soundbites and hyperbolic headlines.

John Boylan

Record Producer

jboylan@ix.netcom.com

I'M THE CUSTOMER, DAMMIT!

I wanted to comment on Paul Lehrman's article "Perils of the Free Market" in the July issue. While I agree that people should not take advantage of pro audio retailers' return policies dishonestly, I feel he neglected the fact that it is difficult to find and establish a relationship with a local retailer. Going into a store, I am greeted by an ever-changing group of employees, and I am not taken seriously by the salesperson. I find I have to beg the salesperson to let me purchase the item I want and not some item they are pushing that week. I have also found that mail order and the Internet are extremely helpful for a woman. I always walk away from a retailer feeling like I got the "chick" price. For example, I recently bought a Tascam MMC-38. I went to my local store first to see what their price was (\$400). I then went to a mail order company, which gave me a price of \$200! When I asked if the first store could meet the mail order company's price (I bought about \$3,000 worth of equipment a few weeks before and figured I would try to continue the relationship I had thought I had established), they refused and rudely said if I could find it cheaper some-

place else I should go there...so I did.

I would love to start a relationship with a retailer that would not treat me like an idiot, would give me at least an average price on gear, and who would do what they could to help me (I recently had another problem with a retailer that refused to do a special order of a matched set of \$1,000 microphones for reasons I have yet to understand). All I want is some good old customer service!

Sherri Hendrickson

hendrick@scf.usc.edu

LIKE FATHER, LIKE DAUGHTER

You know, as I got to Maureen Droney's great interview with Leslie Ann Jones, I was intrigued with the picture of her on page 54. That wry smile seemed to just barely conceal some mystical kind of impishness bubbling under the surface. As I read the article it popped out at me: She's Spike Jones' daughter! Of course! That's it! I have always admired and respected Ms. Jones' illustrious career through the years, but NOW I know why I really like her. The first time I saw her dad on television (back in the "golden years") a light went on in my head. From that point on I knew that you could be funny with music while at the same time be a professional player. Spike (and his band) were some of the greatest players I had ever heard, and I still collect Spike memorabilia to this day, and constantly blow people's minds by putting some Spike video on during some session downtime! Leslie, I hope you still have your dad's checkerboard outfit! Wear THAT sometime to a showbiz outing! And congratulations on an outstanding career in a male-dominated industry!

Bob Ketchum

Cedar Crest Studio

cedarcrest@oznet.com

FRIENDLY FIRE

I can't pass up replying to Larry Blake's "Open Letter to Production Mixers" in the August '99 *Mix*. I agree with a lot of what Larry has to say, but we cross paths in a few key areas. Larry is vehement that production mixers should not EQ (except for rolling off wind noise and giving a slight EQ boost to help a

radio mic buried in the wardrobe). He's absolutely correct. But often post can't tell if we are EQ'ing or not. Every time an actor moves in relation to the mic, the EQ is changing. Every time we mix between a boom, a radio or a plant mic, or every time an actor does a Linda Blair (what the boom person says of an actor when you never know which way their head is going to spin), the EQ changes. Most of this should be apparent from the picture, but we'll still be criticized by the sound editor (via the producer) of EQ'ing too much.

But on to the heart of the beast. To summarize Larry's article, he doesn't want us to mix to mono, he wants us to split tracks, but he doesn't want us to use more than two tracks because it makes more work in post. There are two big issues here. The first is the difference between Movies and Episodic TV. In episodics, the two tracks are routinely summed to mono. If you split tracks, everyone sounds like Donald Duck in dailies due to the phasing and the sound mixer is fired. Splitting tracks on movies is fine because post will actually read the sound reports and has the time to deal with two tracks, but the dilemma is what to do for dailies. Only one track will be transferred unless you give a copy of the day's sides (script) to the transfer house and ask them to do the mix at an additional \$200/hour. My solution has been to use the 4-track Nagra D. I do a mono mix on one channel and send prefades of up to three mics used to the other channels. The mono mix is transferred for dailies. It's used by the picture editor, and when the sound editor comes on, he/she has the choice of either using my mix or going back to the original elements.

The second issue is that splitting tracks is beneficial when you are using two mics. But not every scene uses two mics. In normal production I use anywhere from one to nine (though not happily, believe me). On NYPD Blue (when they shoot their NYC exteriors) I have to mix in eight radios through my board and a boom on the center pot of my PD-4 and mix it all to mono. Most episodics shot in New York are like that. I would love to be able to do them mul-

Capricorn. Great clients Great business

Recent Capricorn
clients at Right Track

include:

ELTON JOHN

SPICE GIRLS

MARIAH CAREY

CELINE DION

PAT METHENY

"Right Track pioneered the use of digital consoles in high end studios. We were the first facility in New York to install a Capricorn. Today we have the bookings, client list and Grammy-nominated projects to confirm our decision."

– Barry Bongiovi, General Manager

Right Track
RECORDING

Tel: 212-944 5770

Barry Bongiovi (right)
and independent
engineer, Rob Eaton at
Right Track Recording

Digital First



HEAD OFFICE – AMS Neve plc · Billington Road · Burnley · Lancs BB11 5UB · England · Tel: +44 (0) 1282 457011
Fax: +44 (0) 1282 417282 · LONDON – Tel: 0171 916 2828 · Fax: 0171 916 2827
GERMANY – Tel: 61 31 9 42 520 · Fax: 61 31 9 42 5210 · NEW YORK – Tel: (212) 965 1400 · Fax: (212) 965 3739
HOLLYWOOD – Tel: (818) 753 8789 · Fax: (818) 623 4839 · TORONTO – Tel: (416) 365 3363 · Fax: (416) 365 1044

Toll Free: 888 388 6383

e-mail: enquiry@ams-neve.com – <http://www.ams-neve.com>

CIRCLE #006 ON PRODUCT INFO CARD

titrack but there is a lot of resistance from post. They request, and we give them, a 1-track mix. There is hope, though. I'm happy to see some TV episodics in L.A. moving to the 4-track DEVA. I wish there were an 8-track DEVA so I could do a mono mix and still give post each mic clean. I think Larry's problem with multi-track is when mixers DON'T mix and give post eight tracks to work with. We field mixers get it right most of the time. When we don't, we ask for another take. The additional clean tracks are there if post needs them. They shouldn't be seen as a hindrance.

One last comment. After all this, I wish Larry were doing the post on all the films and shows I work on.

Billy Sarokin

STEPHEN, YOU MASTER THE MYSTERY

If I only read one thing in *Mix*, it is Stephen St.Croix. For all his ego and arrogance and need to show off, he is never dull; he is always interesting, always an individual. His worst column was wonderful—they only get better from there—but "Rock of Ages (Oct. 1999 issue) is the finest tribute to the importance of music ever penned. I was overwhelmed with the power, the emotion, and the just plain "rightness" with which Stephen captured the mystery of our craft. Change the songs, change the geography, change the times, it is the same universal message. Thanks, SSC, for putting into words what we all feel, but do not express nearly enough.

Dennis Bohn

*V.P. Research & Development
Rane Corporation*

WHY ROOMS "SOUND GOOD"

While Manny LaCarrubba's ultra-wide-dispersion loudspeakers may or may not "sound good" ("The Wide-Dispersion Listening Space," November 1999), his conclusions about control-room design are a misapplication of basic acoustical principles.

Mr. LaCarrubba would be correct that lateral reflections from a room's side walls are important for localization cues, if the loudspeaker were a guitar or a singer or a violin. But it's not. The information necessary to form a sound image (a.k.a., the localization cues or "room sound") is already contained within the audio signal, owing to the complex set of reflections that have combined at the microphone in the recording space, whether it's happening

right now on the other side of the glass or during a session recorded 40 years ago. If the reflection information already present in the sound you're trying to reproduce is convoluted by early reflections in the control room, you can no longer say with certainty whether what you hear is actually in the signal or just a consequence of the peculiar characteristics of the listening space.

Being able to tell exactly where the loudspeakers are as you listen to music is not a goal in optimizing a listening environment. Quite the opposite—a well-defined image (particularly in a multichannel system) should not seem to emanate from discrete monitor locations. The importance of lateral reflections to a listener's sense of envelopment and spaciousness has been well known in the acoustical community for decades, and they are essential in any performance space. In a properly designed control room or listening space, however, early reflections and comb filtering are not "good data." Confusing these two room types does not help to further the science of control room acoustics.

Richard Schrag

*Russ Berger Design Group
Dallas, Texas*

*David Moulton, Manny LaCarrubba's
associate, responds:*

Loudspeakers have a GREAT deal in common with other musical instruments from an acoustical standpoint—they are essentially the same device and subject to the same physical rules. Much of the information contained in Mr. Schrag's complete set of reflections that have combined at the microphone has actually been lost at the microphone, which cannot detect that complex set of reflections except as a comb-filtered, two-dimensional map of pressure over time. Unlike a microphone, our auditory system is extraordinarily well equipped to make good use of acoustical reflections, and does so with ease, integrating them with the direct sound artifacts in a way that microphones cannot approach.

Mr. Schrag suggests that accurate localization of a loudspeaker is undesirable. Not so. If we are going to get stereo to work reliably, it is essential that we should perceive a unique signal sent to a single loudspeaker as coming from that loudspeaker. If the speaker is supported by subsequent early reflections from the room that are spectrally and temporally accurate, the phantom image becomes much stronger, palpable and precise. This is why we call such reflections good data. And, the

more accurate the reflections, the MORE data about the recording and LESS data about the playback room is transmitted via those reflections.

Mr. Schrag suggests that the early reflections of the playback room mask the reverberant artifacts of the recorded signal(s). This is not so. The real problem is the playback room's reverberance. It is this reverberant sound that muddies up the playback of recordings, masking details and obscuring images.

Actually, I don't think Manny and I are confusing control rooms and performance spaces at all, and I DO think we are furthering the science (and art!) of control room design.

LIFE LESSONS

I found your August '99 issue to be very interesting and humorous, especially "Insider Audio" and "Zen and the Art of the First Gig." (Stephen St.Croix is still the greatest consistently.) It made me think about my recording heritage and first gigs. I was taught in recording school that, "This is a DAT. You will probably never work for a studio that can afford a digital multitrack, so we won't waste our time talking about them...instead, let's align the Ampex MM-1000 tape machine." The year following my graduation, affordable digital multitracks came out, and you know the rest. Luckily, I was taught the theory of how things worked rather than gear-specific facts, so I was able to adapt and thrive.

I must admit, though, that my first 100-hour internship at a "real" studio resulted in about 25 hours of splitting wood, laying carpet and painting window sills. I questioned these things at the time, but in retrospect, I think some valuable lessons were learned. Foremost, if you want to achieve success (a relative term), sometimes you must take the long way around. As Norman Vincent Peale once said, "If you ask God to move a mountain, watch out, He might hand you a spoon and tell you to start digging."

I hope that future engineers get ahold of these articles and read them end to end several times.

Eric Kilgore

Chief Engineer

*Primeau Productions Inc.
Southfield, MI*

*Send Feedback to Mix, 6400 Hollis
St. #12, Emeryville, CA 94608;
fax 510/653-5142; or e-mail
mixeditorial@intertec.com.*

This Mic Is Anything But Flat...



The Neumann M 147 Tube

For years, vintage Neumann tube mics, such as the venerable U 47, have been high-priced, highly prized commodities. Why, when advances have created mics with near-perfect, virtually transparent reproduction, have producers and engineers travelled to the ends of the earth in search of these vintage relics? Because of the way they sound (especially the way the sound sits in the mix).

Enter the M 147 Tube.

Using the same capsule as the classic U 47 and its smaller cousin the U 47 FET, the M 147 Tube microphone brings a warmth, presence and detail to vocals that is simply unattainable from any other mic being produced today, regardless of how much it looks like a Neumann. The fact is, there is really only one way to get that classic sound you seek. Fortunately, it's priced well within your reach.

...That's Why The Pros Love It.



Neumann|USA

TELEPHONE: 860.434.5220
FAX: 860.434.3140
WEB: WWW.NEUMANNUSA.COM

Neumann – The Choice of Those Who Can Hear The Difference

What The Professionals Are Saying About The Neumann M 147 Tube:

"So far, I'm thrilled to pieces with the Neumann M 147 Tube. I don't think there's any instrument that I wouldn't try them on. Whatever instrument I used them for, I was very impressed with the sound. I wish I had about five or six of them!"

- **Al Schmitt**,
as quoted in *EQ*,
March 1999

"I would recommend the M 147 highly for rock, rap, pop, jazz or blues vocals; drum room and/or kick drum miking; all tube and solid-state instrument amplifiers; nylon string guitar; and low-volume or indistinct sound sources that need some extra presence. And for any type of digital recording. In short, I like the M 147 a lot -- so much so that I bought one."

- **Myles Boisen**,
Electronic Musician,
August 1999

"The particular kind of presence it adds is really unique and desirable, and it's really not available from any other mic or easily obtainable with an equalizer. Typically, condenser mics that have a forward character are really just brittle and edgy, and the M 147 is completely different from that."

- **Monte McGuire**,
Recording,
July 1999

"I asked the singer on my session which mic she preferred and, when presented with a finite budget, her pick (and mine) was the M 147. Classic Neumann sound, tube electronics, the U 47 legacy, and a price that won't savage your bank account. Gotta love it!"

- **Rick Chinn**,
Audio Media,
February 1999

"The M 147 proves again that however close the imitators get, there is no substitute for the genuine article. This is the real McCoy and although it cannot be called cheap, its simple approach means that it is far more accessible than a valve Neumann would normally be expected to be. Another classic in the making."

- **Dave Foister**,
Studio Sound,
February 1999

"It's my opinion that the tone of the Neumann would not require much EQing during mixdown; a decided advantage. Its high end would sit nicely in a mix, and its round but controlled low end would not have to be cut to provide room for other instruments."

- **Mitch Gallagher**,
Keyboard Magazine,
June 1999

HOW TO SOUND BETTER WITHOUT HAVING TO REHEARSE MORE...



©2000 Mackie Designs Inc. All Rights Reserved. "Mackie," and the Running Man figure are registered trademarks of Mackie Designs, Inc. FMAC, FR Series and CFX Series are trademarks of Mackie Designs Inc.
"Could I have more of me in the monitor mix?" and "I loaded in. YOI' load out." are trademarks of being a musician. News flash: E.D. the Corporate Chihuahua just celebrated her eleventh birthday!

THE CFX/SRM450 COMBO

ULTIMATE PERFORMANCE & CONVENIENCE.

It's easy to transport, simple to set up and it delivers a level of accuracy that's never before been possible with a compact sound system. Just plug a CFX•12, CFX•16 or CFX•20 mic/line mixer into a pair of active SRM450s, the first sound reinforcement loudspeaker accurate enough to sound like a studio monitor. Only way WAY louder.

The first effects mixers you won't be embarrassed to be heard in public with. Our CFX Series™ start with a typically feature-laden low-noise high-headroom Mackie mixer design...and then add ultra-

realistic EMAC™ 32-bit digital effects, derived from our Digital 8•Bus recording console. Plus a lavishly over-engineered 9-band stereo graphic EQ that doesn't degrade sound quality the way cheap ones do.

CFX Series mixers are easy for non-technoids to set up and use, yet are packed with features seasoned pros appreciate, such as 3-band EQ with sweepable mid-range, variable effects parameters, and a way-cool Break Switch that mutes all channels and automatically switches to tape input (which has its own level control, no less).

Active accuracy: better than powered; *way* better than passive. Our SRM450 active speakers are re-defining "small" PA sound performance. First and foremost, they're incredibly accurate

The highest fidelity compact SR system available today. Just add mics, instruments, stands and a modicum of talent.



with crisp, clean treble, sweet natural midrange and loads of tight, low bass. Second, they're capable of awesome output without a hint of distortion. And finally, SRM450s have ultra-wide, even dispersion at all frequencies...so everyone hears the same great sound.

The reason? Custom-transducers that we make ourselves, a unique multi-cell aperture horn design, true active servo-coupling between transducers and internal FR Series™ high-current amps...and electronic time and phase correction.

Call us or visit our web site for more info. Better yet, hear (and buy) the unbeatable CFX/SRM450 combination at your nearest Mackie dealer.

If you're a good musician, you'll sound better. If you're an OK musician, at least those wrong notes will be *really* loud and *really* clear.



CFX SERIES MIXERS INCLUDE:

- True 4-bus design
- 16 built-in 32-bit EMAC™ effects, each with two variable parameters
- 9-band stereo graphic EQ
- 3-band EQ with swept mid on channels with mic inputs
- 4-band fixed EQ on stereo line channels
- 60mm log-taper faders
- 2 Aux sends (AFL/PFL) + internal and external EFX level controls on each ch.
- Extra utility output with level control
- 75Hz subwoofer crossover with XLR output
- Level-setting LEDs on all mic channels
- 18dB/oct low-cut filters on all mic channels
- BNC lamp socket & EFX footswitch jack

CFX•12 12 total channels • 4 buses
• 8 mic/line channels • 2 stereo line-level channels • 8 channel inserts

CFX•16 16 total channels • 4 buses
• 12 mic/line channels • 2 stereo line-level channels • 12 channel inserts

CFX•20 20 total channels • 4 buses
• 16 mic/line channels • 2 stereo line-level channels • 16 channel inserts



- Transducers servo-coupled to internal FR Series™ amplifiers (300 total watts)
- Built-in electronic crossover + time and phase correction circuitry
- Multi-cell high dispersion horn for ultra-wide audience coverage
- Damped titanium HF transducer
- 12-inch LF transducer outplays most passive 18-inch systems
- Built-in mic preamp with level setting control & LED + line input
- Contour EQ and remote turn-on feature
- Rugged trapezoidal cabinet with three balanced handles for easy transport

SRM450 ACTIVE 2-WAY SR LOUSPEAKERS:

CIRCLE #008 ON PRODUCT INFO CARD

www.mackie.com • 800/258-6883

Made by Mackies in
Woodbridge, USA and
Vergato Emilia, Italy.

CURRENT

CONNECTSOUND GOES ONLINE

The first exclusively online music store offering pro audio and A/V products for musicians, DJs and houses of worship, ConnectSound combines an Internet retail store with an extensive data warehouse. A division of mVest Technology Solutions Inc., this Newtown Square, Pa.-based business offers a searchable database of hundreds of products—from cables to consoles—both as individual items and prepackaged systems. The site offers a “technical data warehouse,” where consumers can read or download specs and product info, and customers can make purchases via a secure SSL-encrypted ordering system.

A planned feature of the ConnectSound site is the “Configurator” software, which allows users to configure small or portable sound reinforcement systems, with built-in qualifiers that recognize when a customer may need additional assistance from a contractor. In such cases where a contractor's advice or services would be a better plan of action, ConnectSound will recommend a local NSCA contractor to the user, and during the first quarter of this year, ConnectSound will provide a special section for contractors who would be interested in offering their profile to visitors. For more information, visit www.connectsound.com or call 610/359-9488.

JOEMEEL ACQUIRES TRIDENT-MTA

PMI Audio Group announced that Fletcher ElectroAcoustics, makers of JoeMeek equipment, has purchased the assets of Malcolm Toft Associates. Toft, founder of Trident consoles, formed MTA after leaving Trident.

The new company will carry the original 1972 name, Trident Audio Developments Ltd., but will be known as Trident-MTA. Toft will supervise the console division of Fletcher ElectroAcoustics, which has distribution in the Americas by PMI Audio Group, based in Torrance, Calif.

MIX READER PROFILE AVAILABLE

The 1999 Mix Reader Profile—a biannual survey of subscribers' preferences,

purchasing intents and equipment use—is now available. The survey, mailed to 1,000 randomly selected readers in July, profiles a typical reader's involvement with the music/recording industry, identifies their intent to purchase equipment and picks out trends, and gathers key demographic information.

Some of the more notable results include: 41.4% of *Mix* readers have been involved in professional audio or related activities for 20 years or more; the median household income is \$67,808; 31.5% of readers' primary work takes place in a commercial facility, while 31.2% takes place in a personal or project facility; and 45.2% list their primary business activity as “owner/manager,” with 24% listing “sound engineer/mixer” as a primary business activity (42.8% list “sound engineer/mixer” as a secondary activity).

On the equipment front, 32.9% plan to buy microphones in the coming year, 28.1% plan to buy CD recorders/burners, 28.8% plan to buy outboard signal processing, 24.3% plan to buy signal processing plug-ins, and 24.3% plan to purchase high-capacity hard disks.

For more information, or for a complete copy of the survey, contact the

Mix marketing department at 6400 Hollis St. No. 12, Emeryville, CA 94608; 510/653-3307; fax 510/653-5142; or e-mail karen_wertman@intertec.com.

EXPOLATINA 2000 DATES SET

The second annual ExpoLatina trade show and conference will take place May 23-25 at the Miami Beach Convention Center. Targeted toward the burgeoning Latin American market, ExpoLatina is the only conference of its kind, with a focus on entertainment design and technology.

More than 200 international manufacturers are expected to attend, with products aimed at live performance, film and television production, themed environment, club, concert and professional audio markets. The conference program is presented primarily in Spanish, with roundtable discussions, project portfolios and hands-on workshops led by industry professionals.

ExpoLatina is sponsored by the Entertainment Division of Intertec Publishing, parent of *Mix* and publishers of *Mix Edición en Español* and *Electronic Musician*.

For details, visit www.expolatina

—CONTINUED ON PAGE 20

16TH ANNUAL TEC AWARDS CALL FOR ENTRIES

The Technical Excellence & Creativity Awards Nominating Panel is now accepting entries for product nominations for the 16th Annual TEC Awards, to be held September 23, 2000, in Los Angeles. To be eligible, products must have been released and in commercial use during the period from March 1, 1999, to February 29, 2000.

Categories are Ancillary Equipment, Amplifier Technology, Mic Preamplifier Technology, Computer Software & Peripherals, Microphone Technology, Sound Reinforcement Loudspeaker Technology, Studio Monitor Technology, Musical Instrument Technology, Signal Processing Technology (Hardware), Signal Processing Technology (Software), Recording Devices/Storage Technology, Workstation Technology, Sound Reinforcement Console Technology, Small Format Console Technology and Large Format Console Technology.

Companies wishing to nominate products should send complete product name and qualifying category, date first commercially available (proof of shipment may be required; beta test sites do not qualify), and a contact name and telephone number.

Send all information to: TEC Awards, 1547 Palos Verdes Mall No. 294, Walnut Creek, CA 94596; fax 925/939-4022; or e-mail KarenTEC@aol.com. All entries must be postmarked by Tuesday, February 1, 2000. For more information, call Karen Dunn at 925/939-6149. ■

Getting the Right Gear Should Be Hassle-Free & Risk-Free.



Free Shipping on All Orders!
Expires 2/29/00

{And Sometimes Just Plain Free.}

Welcome to zZounds.com

At **zZounds.com**, we're changing the way you buy gear. You'll find top-name guitars, keyboards, drums, recording equipment, MIDI gear and software—even sheet music and books—all in one place. Add unbeatable prices, great service, and tons of free resources to the mix—and you can see why thousands of musicians have already made **zZounds.com** their music store on the Web.

- The best prices on Earth—guaranteed
- 30-day, no-questions-asked money-back guarantee
- More than 120,000 products with instant Real-Time Stock Checking™
- 1000s of user & expert product reviews
- Late-breaking product news
- Expert advice before & after you buy

Oh yeah, about the free gear. (After all, that's why you stopped to read this ad, right?) Every day, until the boss comes to his senses, we're giving away gear. Not last year's left-handed kazoo, but cool stuff you'll actually be happy to win, like Mackie mixers and Roland keyboards. Just go to www.zZounds.com/free and find out what we're giving away today.

zZounds.com—all the gear you need, with no hassles, no risk, and (just maybe) no cash. How's that for a change?



Recording & Live Sound



Guitars & Basses



Keyboards, MIDI Gear & Software



Drums, Percussion & World Instruments



Books & Sheet Music



Reviews, Buying Guides & Product News



You bring the passion. We'll supply the rest.

CIRCLE #009 ON PRODUCT INFO CARD

Since we introduced the MX-2424 hard disk recorder, there has been a lot of speculation about its price (which is so low it seems too good to be true).

So we get questions. Like...

"24 tracks is an upgrade?" (No, it's 24 tracks right out of the box.)

"24-bits is an upgrade?" (No, all the bits are there too.)

"Do I have to pay extra for inputs and outputs?" (No. At \$3,999 estimated street price* you get a full set of 24 TDIF-1 or ADAT® optical digital inputs and outputs — plus an assignable stereo AES/ EBU - S/PDIF pair. For a little more you can get 24 channels of AES/EBU digital I/O, or analog — or both digital and analog!)

"Does it need an external computer?" (No. The MX-2424s front panel has a full set of professional transport, editing, and track assignment controls, including a shuttle/ scrub knob. So you don't have to have a computer to run it. But — if you happen to own a Mac or a PC, you can take advantage of the digital audio editing and control software that comes standard with each MX-2424 to do even more. Your choice.)

"Before I start recording do I need to buy a monitor, a keyboard, or a hard drive? Or anything else?" (No. Nyet. Nope. Not at all. Just hook up power and start recording.)

So let's make this as plain as we can: The MX-2424 is an amazing, full-featured professional 24-track digital recorder. And there's never been anything like it at this size or price.

I*ts sonic performance is outstanding.* Lots of companies claim 24-bit 48k performance, but only the MX-2424 is part of TASCAM's M Series family of multitracks — the products chosen for their sonic performance by such discriminating facilities as Skywalker Sound, Universal Studios, and 20th Century Fox.



\$3,999^{ESP*}

S*uperior reliability is guaranteed.* The MX-2424 was designed from the bottom up to be a great recorder, and nothing but a great recorder. Its processors and circuitry are fully optimized for audio - not video games, spreadsheet software, or surfing the web. And isn't that absolute focus and rock solid performance exactly what your music deserves? Over the last three decades we've designed and built literally millions of professional recorders and recording systems; the MX-2424 is the culmination of everything we've learned.

S*o easy to operate, you could do it blindfolded.* Of course that way you'd miss the great light show from the 24 tracks of level metering and channel status displays... but the real point here is simplicity. When you want the MX-2424 to start recording, just reach over and press REC + PLAY (just like a traditional tape recorder). In a fast-paced production environment, you can record to hard drives that mount into standard Kingston® carriers and plug into the front panel drive bay. Just pop in a new drive at the start of each session. It doesn't get any simpler than that.

Copyright © TEAC America, Inc. 1999 • All rights reserved.



✓ Back panel ports include Fast/Wide SCSI, ethernet, MIDI, RC-2424 remote, and TL-BUS!

Really.

Professional recorders need to interface with increasingly complex systems.

- ✓ It provides video and time code lock capabilities as standard features, making it easy to integrate with external workstations.
- ✓ It resolves to AES/EBU, S/PDIF, word clock, TDIF-1, ADAT optical, SMPTE Time Code (LTC), and video, and chases MIDI Time Code.
- ✓ Available Input/Output modules include TDIF-1, AES/EBU, ADAT optical, and analog.

MX-2424 shipments are about to start, and there is already a waiting list. To get yours sooner instead of later, contact your authorized TASCAM dealer!

**So... what's this Estimated Street Price? Instead of quoting you some meaningless "List Price," ESP is what we expect typical U.S. customers to actually pay for an item. It gives you a better way to compare value when you shop.*



Trademarks appearing in this ad are the property of their owners.

INDUSTRY NOTES

Paul McGuire, president of Electro-Voice (Buchanan, MI) for the past nine years (23 years with the company), has announced his retirement; he will stay on through February as a consultant to Telex... A new Web site for the recording industry—geared toward producers, engineers and pro audio news, with links to the Music Producers Guild of the Americas—can be found at RPMDirect.com...Dolby Laboratories (San Francisco) has won a second consecutive technical Emmy for its share in the development of DVD with its Dolby Digital technology...Veteran system designer and live sound engineer Rich Frembes has been named application support group specialist at Eastern Acoustic Works (Whitinsville, MA)...Quanteq (Opieka, AL) and Xytech Systems (Burbank, CA), a supplier of facility management systems for the entertainment industry, have entered a partnership whereby Xytech's software, Enterprise 3.0, will be the standard application for Quanteq products. Meanwhile, Xytech has opened an international office in London. Visit www.xytechsystems.com or call 818/767-7400 for more information...Christopher Bradlee has joined MediaFORM (Exton, PA) as vice president/sales & marketing. During the past five years Bradlee has gained significant experience in acquisitions, mergers and IPOs...Bag End Loudspeaker Systems (Barrington, IL) has reached agreement with S.M.A.R.T. Distribution of Maidstone, Kent, UK, to represent the loudspeaker manufacturer in the music industry and sound installation market in Great Britain...SADiE (Cambridge, UK) has appointed Geoff Calver as sales and marketing director, responsible for international development and heading up sales in the UK...Liquid Audio has added a number of labels to its roster for distribution of material over the Internet, including Aware Records, Chesky Records, Drive Entertain-

ment, The Music Company, The Orchard and Smithsonian Folkways Records. Also, Liquid has announced the formation of Liquid Audio Korea, establishing a foothold in the Pacific Rim...Ednet (San Francisco) has made Barry Rubin, a 20-year broadcast vet, its director of sales, and Harvey Louie its director of Webcasting operations...Gemini (Carteret, NJ), makers of DJ equipment, and AudioMusico have combined forces to open the first pro audio/music instrument megastore in South America, in Santiago, Chile...Former manufacturer's rep Patrick Conneen has joined Internet retailer ConnectSound (Newtown Square, PA) as director of sales and marketing...Telex Communications Inc. has sold its interest in Vega to Vitec Group Plc...Redwood Music Corporation (Sandy, UT) will be the exclusive U.S. distributor of STK Electronics products...John MacDonald has been named president and CEO of Leitch Technology Corporation (Toronto), makers of audio and video equipment for the broadcast industry...mp3radio.com has named Craig Hahn director of sales...Grace Design, makers of the Lunatec mic preamp, has appointed (Playa del Rey, CA) its West Coast manufacturer's rep. Call 310/305-8350...Rolls Corporation, which contains the audio divisions of Bellari and RFX, has broken ground on a new manufacturing facility in Murray, UT...Sweetwater Sound (Fort Wayne, IN), a leading dealer in MI and pro audio gear, is sponsoring a sound design contest for users of Kurzweil K2000/K2500/K2600 Series keyboards. Visit www.sonikmatter/K2000/contest/contest.html. Meanwhile, Sweetwater has added four engineers to its sales staff: Gary Goldblum, Mike Humrichouse, David Thackeray and Clint Crump...Søren Viinberg has joined Mach Speakers, a division of Martin Professional, as R&D engineer. ■

—FROM PAGE 16, CURRENT

show.com or www.etcnyc.net. Members of the media can call 800/288-8606.

UPCOMING SHOWS

The 108th AES convention takes place February 19-22, 2000, at the Palais de Congress, Porte Maillot, Paris. Convention chair is Daniel Zalay, CNSMDP (Conservatoire National Supérieur de Musique et de Danse de Paris); papers chair is Eugene M'Paya Kitantou. Hermann A.O. Wilms may be contacted for exhibit information at +32 2 345 7971 or via 108th_exhibits@aes.org.

SMPTE will host the 34th Advanced Motion Imaging Conference from February 3-5 at the Fairmont Hotel in San Francisco. The program includes an audio tutorial chaired by Ioan Allen of Dolby Laboratories. Call 914/761-1100 or visit www.smppte.org.

The New York Music and Internet Expo occurs March 3-5, 2000, at the New Yorker Hotel Grand Ballroom, Eighth Avenue at 34th Street in New York City. The expo features live music, an entertainment trade show, new products, new technology previews, new media seminars, celebrity auctions and VIP parties. Check out www.newyorkexpo.com.

The TEF Division of Gold Line will host the next TEF® training class in Las Vegas December 2-4. The classes provide an opportunity for consultants and contractors to learn advanced methods for acoustical analysis using the TEF measurement system. Topics include acoustical principles, understanding group delay as applied to loudspeaker clusters, and the Time Energy Response of Loudspeakers. The TEF Class program is taught by Don Eger, technical director of TEF and former manager of the Techron Division of Crown International. Visit www.gold-line.com, e-mail Don Eger at doneger@compuserve.com or call 203/938-2588.

CORRECTION

The "Multichannel Digital Audio Workstations" feature in the November issue incorrectly stated that Digidesign's Pro Tools Version 5.0 release features a capture tool for non-timeline recording, a 2-channel clip editor for non-timeline editing and integrated EDL autoconforming. *Mix* regrets the error. ■

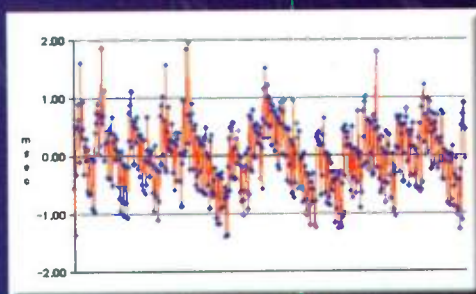
CHECK OUT THIS MONTH'S
MIX ONLINE!

<http://www.mixonline.com>



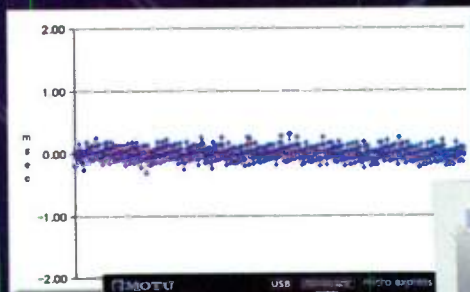
Digital Performer now offers the *most accurate* MIDI timing in the business.

Theirs.



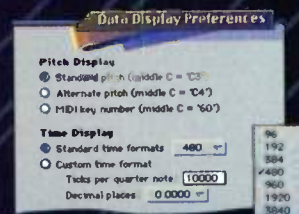
Our closest competition in hardware-based MIDI timing has inherent jitter of 1-2 milliseconds, with spikes that are even higher. Digital Performer's MTS timing is as tight as one third of a millisecond — five times better.

Ours.



Digital Performer's new MIDI Time Stamping™ technology produces the best MIDI timing resolution and accuracy ever achieved. Other sequencers (even ones with MIDI hardware support) offer 960 or 1920 PPQ. But Digital Performer lets you choose any PPQ resolution you want: 96, 384, 480, 960, 1920, 3840, 10000 or anything in between. And MTS, our hardware-based MIDI timing

engine, delivers that precision to your MIDI gear with sub-millisecond accuracy. So if you believe that timing is everything, all you need is a USB-equipped Power Mac, Digital Performer, and a rack-mountable MOTU USB MIDI interface (like the affordable micro express shown above). Ask your Mark of the Unicorn reseller about our competitive crossgrade.



Work with any PPQ resolution you want.



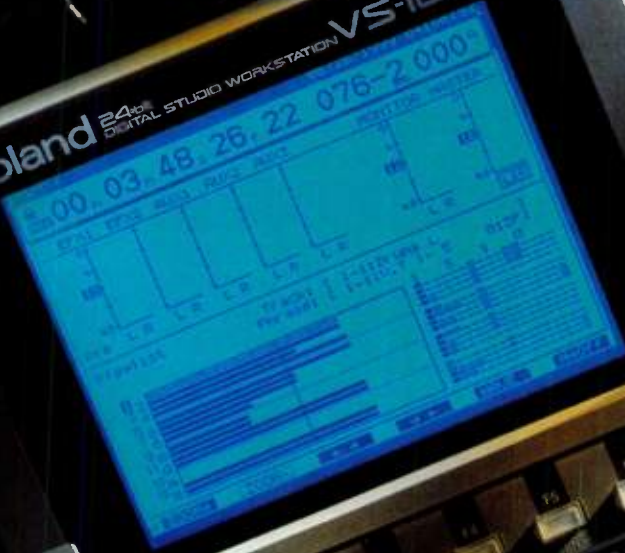
Digital Performer

Mark of the Unicorn, Inc. • 1280 Massachusetts Avenue • Cambridge MA 02138 • 617-576-2760 • 617-576-3609 fax • www.motu.com
All trademarks are property of their respective holders.

CIRCLE #011 ON PRODUCT INFO CARD



Roland ^{24bit} DIGITAL STUDIO WORKSTATION VS-1680



CONTRAST

MAI DISK

EXT SYNC

VARI PITCH

SCSI

MASTER

EDIT

FADER MUTE

IN

TR

MASTER

EFFECT 1

EFFECT 2

13/14

15/16

11/12

9/10

8

DIGITAL

ST IN

PAGE

F1

F2

F3

F4

F5

F6

F7

F8

PREVIEW

OUT 1

OUT 2

OUT 3

OUT 4

OUT 5

OUT 6

OUT 7

OUT 8

AUX SEND

MASTER OUTPUT

PHONES

FOOT SWITCH

24-1 DIGITAL (7.68)

24-2 DIGITAL (7.68)

INPUT

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PAN

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PEAK

PAN

PAN

PAN

Workstations with the works.



Three years ago, Roland changed the way music is made with the VS-Digital Studio Workstations—revolutionary products that won rave reviews while selling a record-breaking 120,000 units ... and counting.

Now, Roland is leading the way once again with alliances and software upgrades that offer more powerful new capabilities for your music.

The VS-1680/VS-880EX Digital Studio Workstations. Get the story at www.rolandus.com/vsupgrades.html

emagic®

Logic Audio VS is a specially designed VS version of one of the most popular MIDI sequencing/audio production programs on the market. Currently bundled with the VS-1680/VS-880EX.

liquid audio™

Publish and distribute your music over the Internet with downloadable CD-quality audio, album art, liner notes, lyrics and credits. Currently bundled with the VS-1680/VS-880EX.

- VS-CDRII Recorder: Burn your own audio CDs directly from the VS-1680/VS-880EX as well as back up song data for off-line storage and archiving.
- V-Studio COSM Speaker Modeling: Reproduce realistic sonic "models" of popular speaker types, ranging from high-end studio reference monitors to boom box simulations. Designed for optimum use with DS-90 Digital Powered Reference monitors.
- V-Studio Mastering Tool Kit: Mastering algorithms put powerful mastering effects at your disposal.



Roland®
VS-1680 and VS-880EX
Digital Studio Workstations

DEMO VIDEO AVAILABLE

To order video:
Call (800) 386-7575
ext: 2593 (\$5.00)

Roland Corporation U.S., 5100 S. Eastern Avenue, P.O. 910921, Los Angeles, CA 90091-0921
(823) 890-3700 www.rolandus.com Faxback Information: (323) 890-3780

(VS-1680 Doc.#10345; VS-880EX Doc.#10346)

Roland Canada Music Ltd., 5480 Parkwood Way, Richmond, B.C. V6V 2M4, (604) 270-6626

Specifications and appearance are subject to change without notice. All trademarks are registered by their respective companies.

CIRCLE #012 ON PRODUCT INFO CARD

WELL, Y2CAME...

AND HERE WE ARE

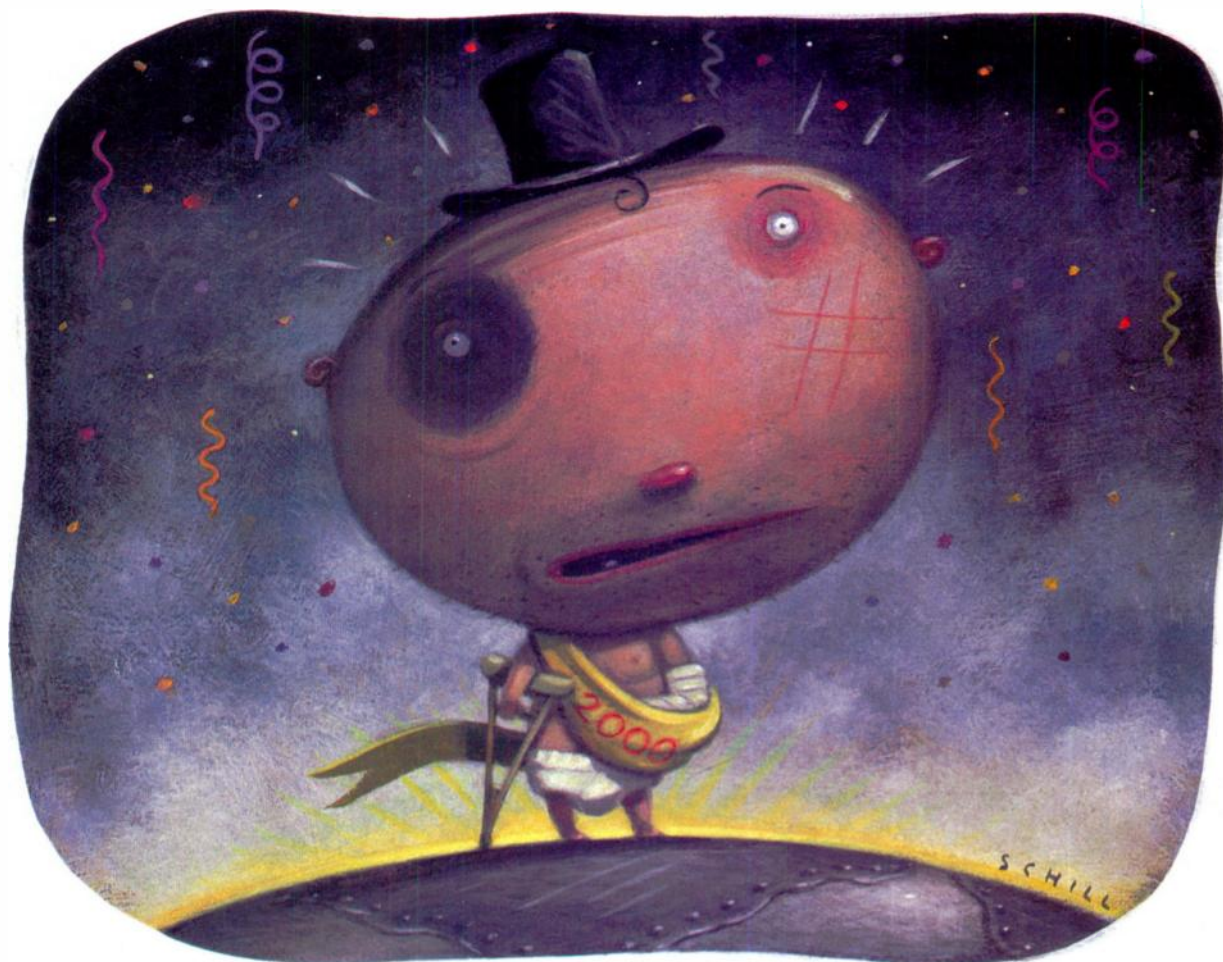


ILLUSTRATION: GEORGE SCHILL

This month I offer two different columns. Please read the one that applies to your current situation.

If you are huddled cold in the corner under three blankets and reading this by candlelight, flashlight, Coleman lantern or fading daylight, please go directly to Column A, below. If, on the other hand, you are warm and comfortable, sitting in your favorite chair reading by your favorite lamp, please skip to Column B. Thank you.

COLUMN A

Damn! I knew it was going to turn out this way! I knew it! Civilization made it to the end of 1999 only to

be brought to its knees by man's shortsighted stupidity. This all could have been avoided so easily...But what's the point? We are where we are. Still, I am surprised by how much more stuff failed than we were told. I understood the power grid situation, and how even one node can confuse the system enough to shut down vast areas, but *this*?

I live in the woods and have a well, so I have no water along with the standard no light, no heat and no phones. There is an inch of ice on an eighth-mile stretch of my uphill driveway, and no one will come to remove it, so I can't leave

by car. The snow in the woods has the same ice over it, so I can't even walk to the top of the drive to see what condition the world is in. Hell, if I hadn't written and sent this column in two months ago, you would not even be hearing from me in this issue.

In a world where hearing that a car crashed can bring forth images of either twisted metal and broken glass or of a nice shiny '99 sitting in the driveway with a dash that shows only 9999s and doors that won't unlock, it was all a disaster waiting to happen. When a society comes to depend on technology for its very survival, it becomes absurdly vulnerable. An argument can

BY STEPHEN ST. CROIX

—CONTINUED ON PAGE 177

TC ICON

Icon - /aɪkɒn/ n 1 [An object acting as mediator between man and the ideal] 2 [A symbol having cultural significance and the capacity to excite or objectify a response]

System 6000 - Starting
The launch of a new top
associated with high
reflect the technical
We are certain the
through its qual
through its qual
standard
Start



SYSTEM 6000
Ultimate Multichannel Processing Platform

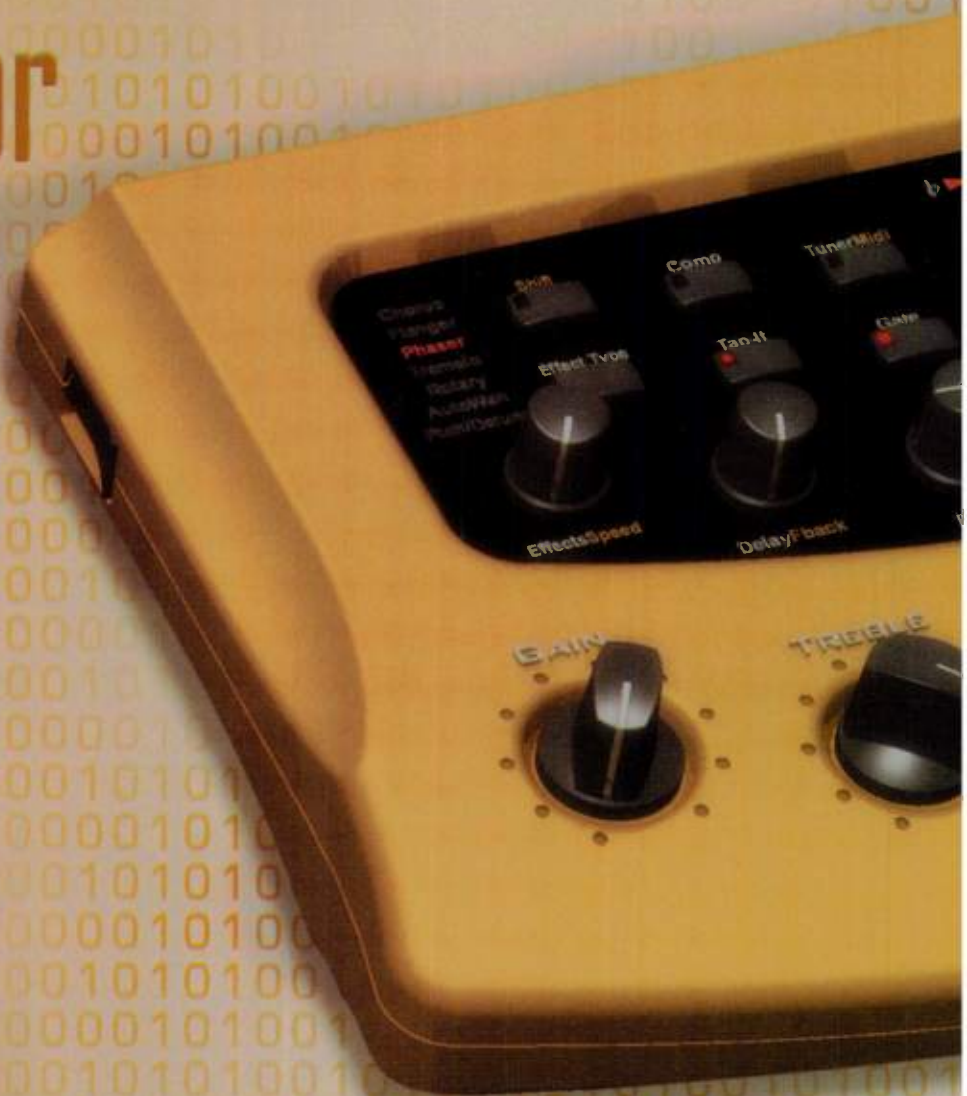
t.c. electronic

TC ELECTRONIC A/S • SINDALSVEJ 34 • 8240 RISSKOV • DENMARK • PHONE: + 45 8742 7000 • FAX: + 45 8742 7010
TC ELECTRONIC INC • 742-A HAMPSHIRE ROAD • WESTLAKE VILLAGE • CA 91361 • USA • PHONE: (805) 373 1828 • FAX: (805) 379 2648

INFO@TCELECTRONIC.COM • WWW.TCELECTRONIC.COM

CIRCLE #013 ON PRODUCT INFO CARD

Amp Modeling Worth Waiting For





www.johnson-amp.com



J-STATION

Johnson
Amplification

CIRCLE #014 ON PRODUCT INFO CARD

 A Harman International Company

ON HOLD, WAITING FOR A CALLBACK

WHO'S AFRAID OF TECH SUPPORT?



ILLUSTRATION: KATHERINE STREETER

Tech support. Two words that strike terror in the hearts of studio personnel and manufacturing executives alike. The former because they know that once they come into contact with the dreaded tech-support phone tree, they may never get out alive, and certainly not with their senses of humor or civility intact. The latter because it means they have to keep staff on the payroll and give them desks, phones and training, despite the fact that, as far as they can see, they do nothing positive for the bottom line. And let's not forget to pity the poor support staffers themselves—they're at the bottom of the corporate ladder, and yet they need to be more expert about the products than many

of the executives, or sometimes even the designers.

But until we develop products that are completely foolproof, get along well with everything else in the electronic sandbox and work as advertised 100% of the time (I think the last piece of computer software that met that description was MacPaint rev 1.0), tech support will remain a necessary evil for those of us on both sides of the cash register.

Does calling tech support always have to be such a painful experience? Are there ways to minimize the time wasted and maximize the value of the interaction?

Like many people, I try to use

tech phone support absolutely as little as possible. One of the reasons is that I lose my temper far too easily. If I have to wait on hold more than three minutes, I get indignant. When the poor slob who picks up the phone after that interval can't find me in the computer (I'm responsible for a lot of installations in a lot of places, and I can't always keep track of whose name I might have registered something under), I get sarcastic. And when they try to put the blame on somebody else's product, I get furious. It doesn't matter if they're right—by the time I get to that point, I am so upset at the futility of it all that I'd go ballistic if they were to ask me my ZIP code.

Part of my problem comes from having done tech support early in

BY PAUL D. LEHRMAN

What's HOT?



ALESIS MASTERLINK

• The ultimate 24/96 CD mastering and archiving device with 3.2gig hard drive. \$1699



MACKIE HDR 24/96

• The ultimate 24/96 hard disk multitrack has landed! \$4995



TASCAM DA-78HR

• 24-bit, long-play, 8-track recording, and low price \$3499



KORG TRITON

• Pure sonic power! Comes packed with 64-voice polyphony, and 6 outputs! \$2799



DIGI 001

• Affordable Pro Tools interface w/ 8 channels of 24-bit analog I/O, 2 mic pres, & ADAT I/O. \$995



ROLAND VSR-880

• 24-bit, 8-track • 128 Virtual Tracks • 24-bit A/D/A • 12 inputs/outputs • R-BUS. \$1795



MACKIE MIXERS

• The complete line of world-class Mackie analog mixers is in stock and ready to ship to your door!



MACKIE HR824

• Accu-rate powered monitors that perform like pros! Excellent response and they're loud! \$749



TASCAM MX-2424

• Knockout 24-bit, 24-track recorder w/ 9gig hard drive, and optional digital I/O. \$3999



MOTU 2408

• Computer-based recording for the real world! \$999



MACKIE DIGITAL 8 BUS

\$995



MARANTZ CDR-630

• Stand-alone CD Recorder w/ XLR and RCA I/O, S/PDIF and Optical I/O, rewritable recording and more! \$799



TC ELECTRONIC M•ONE

• 20 incredible effects, up to 200 presets, analog-style user interface, 1/4" jacks, S/PDIF digital I/O, Dual-engine technology, and 24-bit A/D/A! \$699



DIGITAL PERFORMER

• Upgrade to Digital Performer, for pro sequencing and recording! \$795-88



ALESIS QS8.1

• Larger display and hotter outputs are just two advantages of the QS8.1. \$1999



ROLAND DS-90

• The first affordable powered studio monitors with digital and analog I/O! \$595



ROLAND VS-1880

• Powerful 16-track workstation! \$3495



YAMAHA 01V

• 24-channel, 8-buss digital mixer w/ automation. \$1999



KURZWEIL K2600

\$6256



NEUMANN TLM-103

• Great sound and tons of personality! \$995

DIGIDESIGN PRO TOOLS|24 MIX

The Pro Tools|24 Mix Plus 2-card system thunders across the audio production tools landscape like a rampaging diplodocus. With Pro Tools|24 Mix Plus you can pretty much do everything and anything right there at your workstation—compose, record, edit, mix the entire album or soundtrack without the need for extra DSP cards or an expansion chassis. Push your digital workstation into uncharted territory with Pro Tools|24 Mix Plus! \$7995

What gear will you hear on tomorrow's top hit records? You can find it today at Sweetwater! You can choose from thousands of products for studio and stage: amazing mixers, marvelous microphones, fine guitars, out-of-this-world keyboards, and much more*. When Sweetwater delivers direct-to-your-door, you receive far more than just a great price. Your personal Sales Engineer will help you make the best choice for your music, the first time. Our ace Tech Support team is at your service—free of charge! And we can express ship to your studio, so you get your new gear fast, while it's still hot! We strive to offer you the best selection, the greatest convenience, the best support, and to make shopping for gear fun again! We're proud that our efforts have made Sweetwater the leading direct retailer of music technology products and earned us the trust and loyalty of over 200,000 music lovers all over the world.

*This ad contains Retail prices only. To get real selling prices, call us, e-mail us, or visit our Web site at: www.sweetwater.com

Sweetwater
music technology direct

(800) 222-4700

(219) 432-8176 • Fax (219) 432-1758 • www.sweetwater.com • sales@sweetwater.com • 5335 Bass Road, Fort Wayne, IN 46808

CIRCLE #015 ON PRODUCT INFO CARD



my career, when professional music software was just starting to appear. Everything was new then, and our customers were struggling with every aspect of computers ("Why am I plugging my interface into something with a picture of a telephone?"), MIDI ("Which end of the cable goes to the 'In' jack?"), and digital synths ("How do I adjust the filter resonance on my DX7?"). It seemed to me, in my arrogance, that many of the questions came from people who were simply way too stupid to be using our product. I wanted the person on the other end of the line to be smart, so that I could get him over that last hurdle standing between him and his music. I would get satisfaction out of that kind of conversation—not out of telling somebody which way to insert a floppy disk ("But this disk isn't floppy, it's really stiff!").

On the other hand, I didn't expect callers to be smarter than I. But since I got out of the manufacturing side of things, I have found that often when I call up a company's tech support line, I know a lot more about the product than the person I'm talking to. And this

hasn't helped me keep my temper any better, you can be sure.

All of us have expectations about the gear we buy: It will be competently manufactured, well-documented and glitch-proofed. The first is almost al-

**Like many people,
I try to use tech
phone support
absolutely
as little as possible.
One of the reasons is
that I lose my temper
far too easily.**

ways true (although there have been notable exceptions), the second is iffy and the third is, let's face it, impossible. There are far too many variables in all of our systems for any manufacturer to take into account all possible interac-

tions. This is why companies like Digidesign post a list of "supported" hard drives and CD-ROM recorders on their Web sites: Get a drive that's not listed there at your peril. A problem with this, of course, is that the product cycles have become much shorter than the companies' testing cycles, so by the time an "approved" list is compiled, the drives on it have been discontinued by the manufacturers—it's like trying to find a washing machine that's been given a "Best Buy" by *Consumer Reports*.

Reviews in magazines like *Mix* or *Electronic Musician* can only help so much because reviewers are testing the gear only in one particular situation, and they will usually have a direct line to some higher-up at the company should anything go wrong. The last thing the company wants is for the reviewer to mention that something is broken. (There's a new trend in reviews toward the writer calling the company "blind" and evaluating the waiting time and the skill of the support person. This should be encouraged.)

A lot of companies have put their technical-support documents and databases online, organized according to

Ultramaximize



48 bit

96 kHz



Choice of the Masters

USA: 1-865-689-5395 ■ Rest of the World: 972-3-5107667
www.waves.com



The most transparent wordlength reduction system in the world. Now with 9th-order noise-shaping. No image shift, no tonal coloration.

"Hey, Mr. Insider!" I hear you cry. "You're a big-time *Mix* writer and industry hotshot. Surely you don't have to wait on hold forever on tech support lines!" Well, in some cases I don't—but it doesn't get me results any faster. Dropping my name to some poor tech-support shlub never helps. But since I usually have some kind of relationship with someone else in the company, usually in the marketing or PR departments, I can bypass some of the aggravation. Maybe the chief product specialist and I once started a company together, or I've done some consulting or written a manual for them, or I've reviewed a product of theirs, or, in one

And this special privilege of mine only extends to the audio industry. You think I get the same treatment from Apple Computer? (I have known people there, but invariably as soon as I get friendly with them, they leave or get sent over to another division.) Or the folks who write Norton Utilities? Or Netscape—whoops, I mean AOL? Or makers of video cards or hard disks or printers? Or, God help us, Microsoft? I'm afraid even Mr. Insider has to hang out with all the rest of you where "We're all Bozos on This Bus."

So how do you make this experience tolerable, both for you as a cus-

Once upon a time, oh, about two months ago, I decided it was time to stop depending on Jaz disks for my Pro Tools system and buy some serious storage. After all, Jaz's promise of "\$100 per Gigabyte—forever!" isn't all that attractive now that \$400 9-Gig drives are common. Of course, this got me thinking about the first hard drive I ever bought: a 20-meg job from Apple that cost me, with my academic discount, \$1,200 in 1986. Storage prices in 13 years have come down by a factor of something like 1,500. Pretty awe inspiring. So I called up Other World Computing, an Illinois mail-order house that advertised in *Macworld*, and ordered a Quantum Atlas II 9.1-Gig, which looked like it would fit the bill. Well, they told me, the Atlas IIs were all gone, and so, in fact, were the Atlas IIIs. The exigencies of dead-tree publishing being what they are, new product cycles are now

—CONTINUED ON PAGE 181

The L1 Ultramaximizer with **IDR** Increased Digital Resolution wordlength reduction system has been used by tens of thousands over the last 5 years to accommodate the subtleties desired by audiophiles, as well as the

Now also available in a 2U standalone package, the L2 features even better limiting, 96kHz support, and 48bit audio math.

Over the last few years, Waves has shipped the most comprehensive, best supported array of digital signal processing tools for more platforms of any manufacturer.

Waves technology has been acclaimed, not only by its 50,000 users, but by the top names in production such as Bob Ludwig, Douglas Murray, Charlie Clouser, Mutato Muzika, and Omar Hakim.

Universally acclaimed for the most transparent peak limiting, the highest resolution, and no phase shift, the L2 lets you knock out the competition without having your sound take a beating as well. So get the Choice of the Masters. Contact us for the location of your nearest Waves dealer.

The L1 is available in all of the following cost-effective production bundles from Waves: ● Gold Bundle TDM ● Gold Bundle Native ● TDM Bundle ● Native Power Pack for Mac and PC. The L2 is pure standalone hardware: no computer required.

CIRCLE #016 ON PRODUCT INFO CARD

Why wait for the new digital formats to be approved? You can get 19bit perceived resolution out of today's CD and digital video formats right now, with Waves L2. Ultramaximize your dollars and your sound.


The L1 Ultramaximizer with **IDR** Increased Digital Resolution wordlength reduction system has been used by tens of thousands over the last 5 years to accommodate the subtleties desired by audiophiles, as well as the "punch" for many pop mixes.

Now also available in a 2U standalone package, the L2 features even better limiting, 96kHz support, and 48bit audio math.

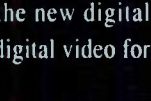
Over the last few years, Waves has shipped the most comprehensive, best supported array of digital signal processing tools for more platforms of any manufacturer.


Waves technology has been acclaimed, not only by its 50,000 users but by the top names in production such as Bob Ludwig, Douglas Murray, Charlie Clouser, Mutato Muzika, and Omar Hakim.

Universally acclaimed for the most transparent peak limiting, the highest resolution, and no phase shift, the L2 lets you knock out the competition without having your sound take a beating as well. So get the Choice of the Masters. Contact us for the location of your nearest Waves dealer.



L2
Ultramaximizer
48 bit • 96 kHz





L1

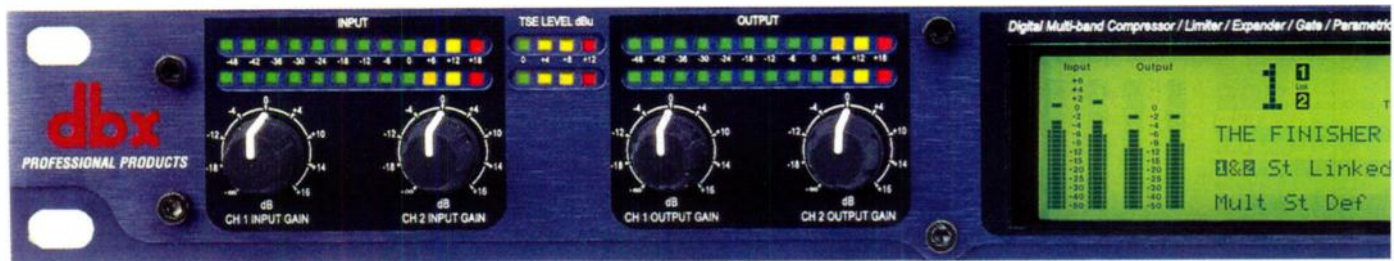
"Stretched the CD format"

The L1 is available in all of the following cost-effective production bundles from Waves: ● Gold Bundle TDM ● Gold Bundle Native ● TDM Bundle ● Native Power Pack for Mac and PC. The L2 is pure standalone hardware; no computer required.

CIRCLE #016 ON PRODUCT INFO CARD

The Final Word in Professional

QUANTUM



24/48 Bit

Save The Planet



It's The Only Market We've Got.

Mastering is...

DIGITAL MASTERING PROCESSOR

QUANTUM

There. We said it. Right there, out in the open. No asterisk. No caveat. No "except where prohibited by law".

Introducing the dbx Quantum.

The first mastering processor that offers a sampling rate of up to 96kHz, a true 48 bit digital signal path with 24 bit output, and the same superior dbx dynamics processing that's been processing the hits for more than 25 years. Quite a trio of features.



- 4 Band Multi Band Stereo Compression
- 5 Band Variable Q Parametric EQ
- Dual Mono or True Stereo Operation
- TYPE IV™ Conversion System with TSE™ Tape Saturation Emulation

And with the dbx TYPE IV™ Conversion System already on board, your signal retains the analog warmth and character it started out with, plus the clarity and versatility demanded by today's digital standards. Our patent-pending TSE™ Tape Saturation Emulation processing makes it easy.

You need to hear it for yourself. So get up and go to your pro audio dealer today. Your clients will be glad you did.

CIRCLE #017 ON PRODUCT INFO CARD

dbx Professional Products • 8760 South Sandy Parkway
Sandy UT 84070 • Phone (801) 568-7660 • Fax (801) 568-7662
email: customer@dbxpro.com • URL: <http://www.dbxpro.com>

dbx®

PROFESSIONAL PRODUCTS

■ A Harman International Company



Drum Sound Getting a Building

by Randy Alberts

Four Engineers Talk About The Challenge

Q: How many engineers does it take to mike a drum kit?
A: One, assuming the drummer shows up.

With all due respect to drummers—having endured years of bad jokes like that one—their style, touch and hardware have more to do with how they sound during playback than any other musician in the room. So when engineers discuss getting a drum sound, they're likely to talk about consistent touch, a well-tuned kit, torn heads and dealing with squeaky pedal noise before even mentioning a microphone. Keeping that in mind, we talked to a control room's worth of engineer/producers with more than 75 years of collective experience recording everything from Warwick & Bacharach to drum 'n' bass.

Oliver DiCicco owns and operates Mobius Music, a warm San Francisco studio with credits including the Charlie Hunter Quartet, Bill Frisell and Fred Frith. Gary Chester, co-owner and chief engineer at The Edison Studios in New York City for 13 years, began engineering in 1969 and has heard drum sounds come full circle since the days of The Belmonts and Jay and the Americans. Specializing in drum 'n' bass, jazz and funk is Paul Scriver's Square Peg Productions, a cozy project room in San Francisco, integrating the edge of modern music with old-school jazz recording styles. Jim Mitchell also added his insights on capturing a great drum sound. His credits include Guns N' Roses, Brother Cane and Thee Hypnotics, and his recent experiences recording the drums of G N' R and Slash's Snakepit give new meaning to the term "leakage control."

Photographer Bill Schwob captured the energy of a drum sound in a session at the main studio of Ex'pression Center for New Media, Emeryville, Calif.

RETURN OF THE ROOM

Mitchell has toured with Guns N' Roses to record a live album, and he may be the king of making mic leakage a friend. "[Guns N' Roses'] Matt Sorum's kit had four 18-inch subwoofers under the riser," he laughs, "two Marshall half-stacks for the guitars facing in and upward from his left and right, plus four 15-inch, four 12-inch and two 2-inch compression drivers behind him for his monitor mix. Everything was just blowing into the kit mics, but you have to use that to your advantage to capture the live vibe."

The live vibe is prevalent in the studio these days, too. From the original big-band room sound to '70s dead and back again, miking drums today has perhaps more to do with old-school miking savvy than ever before. "I starting recording professionally in the mid-'70s," DiCicco says, "and people were going for that tight, deader L.A. sound using heavily taped drums without much tone. The tendency now is a more natural, open sound, so a lot of rock and pop drummers are leaving the front heads on the kick now and using smaller snares tuned higher."

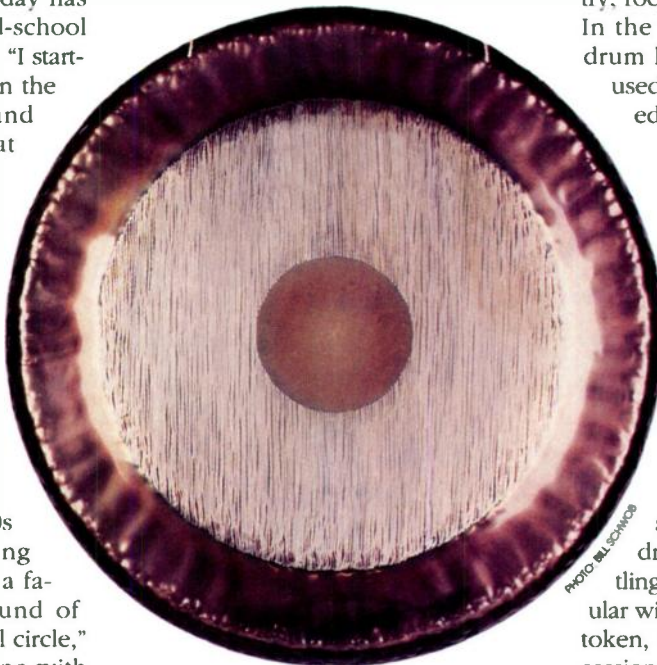
Chester followed his session drummer father from one classic New York gig to another as a kid in the late '50s and early '60s. After recording drums for 25 years, he hears a familiar tone today. "The sound of drums have really changed full circle," he says. "Everything was done with three room mics mixed to mono when I first started. Then as 16-tracks came, we started miking the drums closer, miking inside each tom to get separation and depending more on outboard equipment for ambience. The Record Plant sound came along, and the drum rooms and the drums themselves got so dead, there was no sound to them at all. Now the drums are coming back out of the iso booth and into the main room to get all that room sound and all that leakage. The new salsa and swing have reinvigorated that live, open sound."

Scriver believes miking techniques from classic, old jazz recordings are enjoying a rebirth, too, thanks to the live drum aesthetic of some new musical styles. "There's some eclectic jazz recordings where the drums are miked with just two PZM boundary mics mounted on Plexiglas and angled at 90

degrees as a stereo pair," he says. "That technique works great for drum 'n' bass, to get that really open room sound instead of just a dull thud on the kit."

SPEED IS STILL EN VOGUE

A quality that's never been out of style is being fast around a drum kit. As important to capturing live studio moments as it is to watching the clock, setting up quickly and getting a good sound is more significant with drums than with any other instrument. Whether it's with a pair of PZMs or a cabinet's worth of mics, knowing when to say when is important.



"Setting up quickly doesn't mean you do that at the expense of getting a good sound," DiCicco says. "You develop a baseline approach in a room you're familiar with to get a fairly consistent result every time. I'm a firm believer in not having the client sitting around waiting, and I don't want the drummer to get tired from playing quarter notes for six hours until any desire to play is completely sucked out. If you can get a good sound, just keep the flow of the session happening."

Time is money, so minimizing the number of mics needed to record a kit is a good idea. "I usually don't mike both heads of the toms, but some engineers do," Scriver says. "It's all about time in the studio, and it takes time for each additional mic to be checked for levels, connections, phase cancellation, EQ and panning. Even a simple

three-tom kit—miking both heads requires setting up six mics."

"If you're scheduled to start a session at 10 and the drummer's late, you're lucky to get any setup time at all," says Chester. "A few New York drummers are famous for that! They come in, sit down and they're ready to do the take. Having an assistant go out and hit the drums for hours beforehand to get a sound means nothing, because it's all in the drummer's touch. If you're recording a basic cross-stick thing and it's just a wonderful feel, how much time should you spend on that sound? Doing jingle work teaches you to be pretty fast because you're typically recording drums for a country, rock and R&B spot all in one day. In the early days, we had this one drum kit miked and set up that we used for years, and you never wanted anyone to touch it."

THE ULTIMATE DRUMMER?

But before one mic or baffle is even touched, getting a great sound starts with the kit—a quality as varied as the ways there are to play drums. A vocalist's cough can be edited, and guitarists get away with a little line buzz, but nothing sends an engineer out for a cigarette break faster than ill-prepared drums in the studio. Excessively detuned drums, cracked heads and a rattling hat stand won't make you popular with the engineer, but by the same token, nothing perks up a day's drum session more than a drummer showing up with a studio-ready kit.

According to Mitchell, one of the best drummers in this department is Simon Phillips. Not only are his drums tuned to perfection, they're pre-miked. "Simon has this huge kit with like three kick drums, a gong drum, six toms, a set of octabongs, couple of snares, two hi-hats and tons of cymbals. But he comes in with the whole kit miked with Shure Beta 98 clip-ons that are hard-wired to a patchbay, real impressive. Simon says, 'Trust me. Take these mic leads and do what you want from there. If you just listen to what he's going for and just bring his mics up to the board, it sounds great and sounds just like Simon Phillips in every studio, every time. It's very easy when you get to work with drummers like that.'"

DiCicco agrees: "The set has to sound good, the heads have to have

code of creation

Kobla Studio9000

A complete synthesis, sampling and drum machine package, Kobla's Studio9000 uses Digidesign's DirectConnect Plug-In engine to stream awesome, mind-bending tones into Pro Tools.



SampleCell II Plus

SampleCell II Plus™ is a scalable PCI card-based sampler and waveform editor. It features optional TDM integration, a super-fast trigger time, 32 voices and 32 MB of RAM per card.



1622 I/O

Each 1622 I/O™ audio interface offers 16 inputs for mixing racks of synth modules, samplers and effects processors into Pro Tools.



Virus

Utilizing the same DSP algorithms as the Access Music Virus hardware synthesizer, the Virus TDM Plug-In is the ultimate software tone generator, providing up to 80 voices on a Pro Tools |24 MIXplus system.



Pro Tools™ moves the studio beyond a tool of production and turns it into an instrument of creation. It opens up a whole new world of options for bringing music to life. From cutting edge host-based synthesis, to TDM-integrated

sampling, to tone generation, to hardware that pulls it all together — Pro Tools gives you the complete system for stretching the traditional boundaries of musical creation.

See and hear the difference. Check out our website at www.digidesign.com or call 1.800.333.2137, code **536** to order your free Pro Tools v5.0 for Music video.



www.digidesign.com

digidesign

A division of Avid

©1999 Digidesign, a division of Avid Technology, Inc. 1622 I/O, DirectConnect, Pro Tools, Pro Tools |24 MIXplus, and SampleCell II Plus are trademarks or registered trademarks of Avid Technology, Inc., or its subsidiaries or divisions. Mac OS is a registered trademark of Apple Computer. Windows is a registered trademark of Microsoft Corp. All other trademarks contained herein are the property of their respective owners. All features and specifications subject to change without notice.

CIRCLE #018 ON PRODUCT INFO CARD

the right tension for the size of the particular drum. One drummer once showed up without any spurs for his kick drum, so we ended up having to use screwdrivers and duct tape just so the kit wouldn't walk all over the room!

"It's amazing how ill-prepared some people can be, but most drummers these days are pretty sophisticated with their kits," DiCicco continues. "Every drum has a certain resonant frequency that it wants to be around. If you try to make it create frequencies lower than it's really capable of producing, you end up with a flabby drum head that sounds like you're dribbling a basketball in a gymnasium."

Chester recalls the period when no one used bottom heads: "There were Evans oil heads so loose they had wrinkles on 'em. You have to go with what the drummer or producer wants, but if they tune down too much, you start to get a lot of ringing and you have to overcompensate for that."

Scriver believes that, above all, the key to a good drum sound is tuning. "If the bass drum is tuned properly, it'll sound much better, but you can't do much if it's not," he says. "It's not as important with the lower frequencies of the kick, but I've spent hours adjusting snares and toms that are out of tune if the drummer is too lazy to tune them. Some drummers are totally together, with their toms tuned in a chord with octave, fifth, third, octave, and the kick drum maybe a fifth below that chord."

DRUM BY DRUM

With more ways to mike a drum kit than there are days in a year, there's no universal "Miking 101" approach. Each engineer was more than willing to share some basic and not-so-basic ways to let a drum kit speak with the caveat that no single technique is nearly as important as listening to what the music and the musicians are trying to say.

Mitchell says he likes to use a lot of old-school ribbon mics for overheads to get the main sound of the drums. "On Slash's Snakepit we had a pair of mics in the corners of the room about 10 feet high to pick up the distant air of the drums," he explains. "I used a pair of RCA 77s as close mics that were maybe 8 feet in the air and not spread quite as wide, just off the corners of the drum kit. Some compression to get them to pump a little bit and breathe with the tempo of the track."

DiCicco is a big fan of using his mics efficiently, typically using a pair

of overheads, a snare mic, kick, one on each tom and a hat mic he may or may not use. "When there's a lot of toms, I'll sometimes use one mic with a figure-eight pattern and put the mic between the two drums to pick up both. Ideally you can capture the entire kit with just a pair of mics, but the secret is just to work enough with any number of mics until it starts to become intuitive and you're quick at it."

"I think a lot of people probably like to mike their drums closer than I do, with the exception of toms," admits Scriver. "But in the small iso-booth space I have here, it doesn't matter as much if they're too far away because I'm not picking up a whole lot of room reflections."

Being a drummer and knowing how a drummer thinks also helps, as Chester has found. "A lot of jazz drummers don't want to hear the bass drum all the time," he says. "And they play so dynamically sometimes you wonder if they're playing the kick at all. You've got to make sure the bass player isn't washing out the bass drum. Somewhere between the two it really works because they're really one instrument together."

SNARE

There's one mic in just about every engineer's repertoire. "I always come back to the Shure SM57 for the snare," DiCicco states. "I've tried condensers, but usually I'll top mike it with a 57, and if I want more snap, I'll use a bottom mic or mike the side of the shell. A friend of mine was into miking the hole, but I find you get too much air puffing out of the hole."

Scriver agrees, miking the top of the snare from different angles with an SM57 for sound and protective reasons on his projects. "It takes really high SPLs, and it's not going to break if it gets bashed by a drumstick. I used to put it really close to the head on a slight angle, but I found lately I like it up higher at a steeper angle to get more of the actual snare drum instead of this microscopic skin sound. I used to put a condenser mic underneath the snares, but I was getting a little tired of that sound."

Also an SM57 fan for snare, Mitchell mikes the bottom and often mates two mics for the top, a 57 on a mic stand with an AKG 452 with a -20dB pad to provide more options to work with back in the control room. "The 452 has a brighter pop to it, and the 57 is meatier," he says. "If I don't want to use the bottom snare and still want

some bright splash on the top of the attack of the mic, I'll use the 452 and 57 taped together above the snare to give me the attack I need. I also move the 452 in and out until I hear where it works best in tandem with the 57."

KICKS

Scriver says he likes hearing the shell of the drum but not necessarily its note, so he uses the AKG D112: "I like that sound, but it's probably better for a two-headed kick without a port on the front," he notes. "The Sennheiser 421 is a great kick mic, and I prefer the Audio-Technica ATM25 for picking up just the right amount of upper frequencies of the shell. It has a nice little bump around 250 Hz for all the extended lows, too, the thump of the kick." DiCicco adds that he prefers "either the AKG D112 or 421, your standard kick drum mics. I usually don't mike the beater side."

TOMS

The Sennheiser 421 is also popular for miking toms; it's a solid dynamic mic that can take the occasional smack from an errant fill and still sound good. "I keep coming back to the 421s," DiCicco says. "Some drummers like their cymbals right on top of the toms, especially jazz drummers, so I'll get in really tight on the toms so that I can run the gain of the microphone down and pick up less leakage from the cymbals." Scriver opts for some heavy-duty AKG C535 condenser mics for the toms. They can also withstand the kind of abuse more fragile condensers wilt under, he says: "I've seen some pretty beat-up mic windscreens."

PRINTING EFFECTS

It's common to print drums with EQ, compression or gating, although never to the point of overcompensating for what's going on in the room. "I like to use compression; I'm not afraid to hit the tape hard," Mitchell says. "I don't like to saturate with it. I like to keep it dynamic, getting some tape compression without everything being crushed to tape so hard that you lose the punch of the drums."

DiCicco uses EQ to shape his mic tones, especially on kick drum. "When I'm EQ'ing the kick, I'll EQ for a strong fundamental and then notch out around 300 cycles to clear out some of the wooliness of the instrument," he says. "Then I'll add some attack on the higher frequencies around 4 k or 10 k, depending on the drum and what frequencies are available on the EQ. I'll

BECAUSE EVERY SECOND COUNTS

324

Live Performance - *Digital Control*

Repeatable Control

Live Sound mixing places unique pressures upon the mixing engineer. The operator is expected to overcome all the unpredictabilities associated with an artist's live performance, whilst remembering to accurately reconfigure the console between songs. 324 offers the user complete reset of the console on a snapshot basis. Every digital audio parameter on the console can instantly be reset song by song, or scene by scene, leaving the engineer free to get on with the job of mixing the show. ISOLation feature allows problem channels to be put instantly under manual control.

MUTE GROUPS

Invaluable in rehearsal and sound check, 4 Mute groups allow easy one-touch muting of a group of instruments or performers - for example, all the radio microphones, the drum kit, or backing vocals.

EFFECTS

324 boasts 2 powerful Lexicon Multi-FX units, providing on-board Reverbs, Delays. In addition, the sends to these units may be assigned to separate console outputs, giving a maximum of 6 analogue Auxiliary sends from the console.

SECURITY

In a Live environment it might be necessary to leave the desk unattended. While away, simply enable the "Surface Lock" preventing unauthorised tampering. Use this "Lock Out" to varying degrees and regain control at a single touch.

FLEXIBILITY

324 can grow as the sound system around it expands. 16 Mic (XLR) or Line (1/4" TRS Jack) inputs + 1 Stereo Input are available in the analogue domain. An additional 16 fully-featured inputs are available via the pair of TDIF ports on the rear of the console, for playback from DTRS or connection of a pair of 8-way analogue to TDIF interfaces. With all expansion options attached, the console will support up to 34 analogue inputs.

MIDI CONTROL

In addition to MIDI Program Changes, each snapshot can be configured to send Note On, with programmable Duration and Velocity - ideal for controlling external samples for FX replay. The console faders may also be switched to act as configurable MIDI Continuous Controller masters.

324 - INNOVATION

The E-Strip offers a class-leading operator interface. Offering a conventional channel strip rotated through 90 degrees, 324's operation is instantly recognisable to anyone familiar with analogue console operation.

Live sound demands fast channel access, and the E-Strip delivers.

digital live

three two four

■ 324 - INS & OUTS

ANALOGUE

- 16 Mic/Line inputs, with insert point, Gain control and 100Hz HPF.
- "Stereo 1" (1/4" Jack)
- Talkback Mic (XLR)
- 4x Auxs (1/4" Imped. bal. Jacks)
- 2x Floating Outputs (bal. XLR)
- 4x Matrix Busses (bal. XLR)
- Mix left / Right (bal. XLR)
- Monitors (1/4" Jack)

ONBOARD PROCESSING

- 2x stereo multi-FX Units
- 2x stereo dynamic processors

DIGITAL

- 2x 8-way T/DIF Ins & Outs
- S/PDIF Ins & Outs
- AES IN/OUT
- Wordclock Output
- MIDI IN/OUT/THRU
- "Stereo 2" input (via S/PDIF or AES/EBU)

INTERNAL BUSSING

- 4x Groups
- 4x Matrices
- 4x Auxes
- 2x "FX Sends"
- L/R and Mono busses

OPTIONAL

- INTERFACES
- Analogue Interface
- AES/EBU Interface
- Mic/Line Interface

Call for your Free copy of the Spirit Digital Guide to Mixing

324's intuitive scene storage and recall system makes light work of complex reconfiguration.

For more information

<http://www.spiritbysoundcraft.com> email: soundcraft-usa@harman.com

SPIRIT BY SOUNDCRAFT TEL: 615 360 0471. FAX: 615 360 0273

H A Harman International Company

CIRCLE #019 ON PRODUCT INFO CARD



DIGITAL LIVE

also use some low-frequency roll-off to clear up the low end so the kick isn't rumbling too much through everything."

"I do print EQ to tape," Scriver says. "But if a frequency-gain knob is turned way up, I've got to go back into the room. I'll add a little top to the snare drum or a point on the kick, add some bottom to the kick drum. I'll do as much of that as possible to tape. I never print gating to tape, because I like the drums to be open, and I don't mind some of the leakage of stuff into the other mics. I make it work to my advantage."

Compression is something Scriver also pays attention to. "Compressing to tape sounds totally different than compressing the signal coming back off the tape," he says. "It's the nature of the transients. Tape doesn't capture every single transient, so the compressor is working with a different set of parameters than when coming from tape. The compressor is going to react slower, because the tape sound is not quite as fast as the real snare; you just can't get the same sound."

LIVE DRUMS AND NEW TRICKS

Chester says: "We work with a lot of drum samples, but not that many loops,

because this is primarily a live music recording studio. But it's really interesting to record live drums playing along with electronic and sampled drums—that's a challenge."

Mitchell would agree. "The great thing in mixing electronics with live open-miked drums is combining the two somewhere in the middle. We wanted to overdub a loop into the intro of a song on the new Snakepit record, but it was a free-time thing recorded without a click track, and we couldn't line up the original loop to it. So we sampled some of Matt Laug's live drum hits doing the same kind of stuff, cut them up in a sequencer and moved each note of the loop to match the open tempo of the intro. We did a similar thing with dual drum parts on another song where both things were played and recorded by the same drummer [Laug] live, but one was deconstructed and rebuilt into a drum loop and the other's the real thing—an interesting mix that creates a great groove."

A trick that surely every engineer with a kid has tried is the baby drum set. Mitchell worked with Denny Fongheiser on the album *Lifted* by XC-NN, and they used the baby kit that

belonged to Fongheiser's kid, filled with towels, miked with U47 tube mics and tricked-out with heavy compression to get some great 808-like hip hop grooves.

Another not-so-common trick is to re-amplify a drum sound to beef up a snare or re-trigger it all together. Like a ghost drummer in the iso booth, the original hit is sent back out to the room through a compact near-field monitor, the heavier the better. "I put the speaker right on top of a snare drum and re-record the snare vibrating from the original track," Scriver says. "It gets the snare rattling and puts some life back into it, or it can completely replace the original. I've heard tracks re-amped with distortion or through a [Line 6] POD that sound great. I've had to re-amp individual drums occasionally when I'm working with furnished tapes where the original track just wasn't recorded right, but it also offers many creative possibilities."

Randy Alberts is a San Francisco musician, engineer and writer who has been on the staff of Mix, Keyboard, Electronic Musician, EQ and Radio & Records.

SRM-80 SIGNAL ROUTER/MONITOR

MONITORING, MIXDOWN, AND DUBBING HAVE NEVER BEEN THIS EASY...



Mix down to, or dub between any of four stereo devices, A through D

Monitor the console mix or any of four stereo devices

Listening Level

MONO Sum
DIM 15 dB

High resolution 80-LED meter with VU/PMM and Peak Hold

Select from three speaker pairs (one self-powered) and trim to equal loudness

Built-In High Power Headphone Amp

SRM-RU Remote

The new SRM-80 Signal Router/Monitor makes mixdown and dubbing simple, professional and affordable.

It provides signal routing and monitoring for four stereo devices (such as DAT, cassette, Mini Disc, CD-R, etc.) — plus the main console output. Multiple copies can all be made simultaneously. And that's only the beginning.

Monitor using three different speaker pairs, at the same loudness, using our exclusive "set-once" level trims. Speaker button "A" switches line-level for driving self-powered monitors; B and C use a high power relay to redirect your power amp output to either of the two pairs.

There's even a built-in high-power headphone amp.

A high resolution 80-LED meter for precise level calibration of all stereo devices, MONO Sum to check for mix problems, a DIM button to reduce listening levels during interruptions, and more. All five pushbutton functions are also available remotely on the optional SRM-RU, which includes a 10-foot cable.

FURMAN

FURMAN SOUND, INC.

1997 South McDowell Blvd. • Petaluma, CA 94954

Tel: (707) 763-1010 • Fax: (707) 763-1310

e-mail: info@furmansound.com

Web: www.furmansound.com

Contact us and we'll send you a free SRM-80 data sheet. Ask for our new color catalog too.



60 PRODUCTS, ONE PROMISE.



You've probably heard that Rane makes the best EQs and crossovers around. You heard right. But you've really only heard the beginning. Rane actually makes more than 60 different innovative audio products, from tiny low-noise mic preamps to sophisticated multi-function Digital Signal Processing stations. Rane products serve a wide variety of applications from sound stage to nightclub, recording studio to teleconferencing system, courtroom to cinema. But they all have one thing in common—the Rane philosophy. A dedication to quality we promised in our very first brochure. And a promise that is stronger than ever today. We vowed that each and every model we make will carry that distinctive set of Rane characteristics: top of the line performance, refreshingly easy to operate, remarkably cost-effective, extremely reliable, and thoroughly backed by the best technical and customer support in the industry. We've made good on this promise for nearly two decades, with legions of satisfied Rane owners to show for it. Whatever your sound needs might be, be sure to ask about Rane. You'll be very glad you did. We promise.





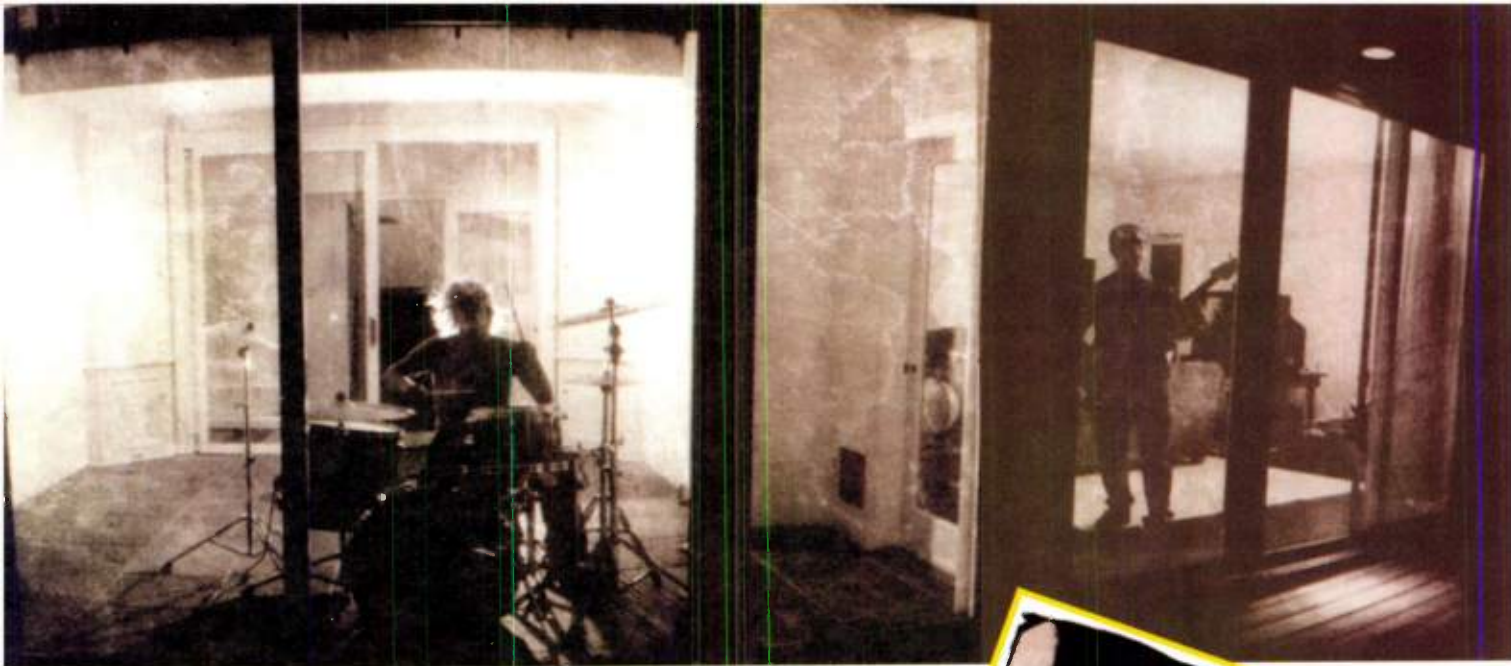
PROJECT A LOOK AT THREE GREAT STUDIO RECENT CDS MADE AT HOME PROJECTS

MARSHALL CRENSHAW
THRIVING IN HIS OWN WORLD >

BY **BLAIR JACKSON**

The tip-off that Marshall Crenshaw recorded his latest CD, enigmatically titled #447, in his own project room is the name of the studio in the liner notes: Claustro-Phonic Recording. Not exactly a commercial name that's going to bring in clients. "It's a little building out behind

—CONTINUED ON PAGE 44



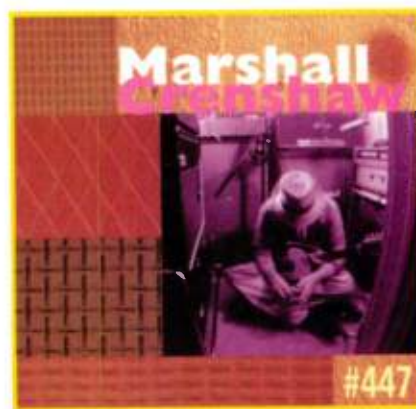
▲ THE FOO FIGHTERS ROCK IN OL' VIRGINNY

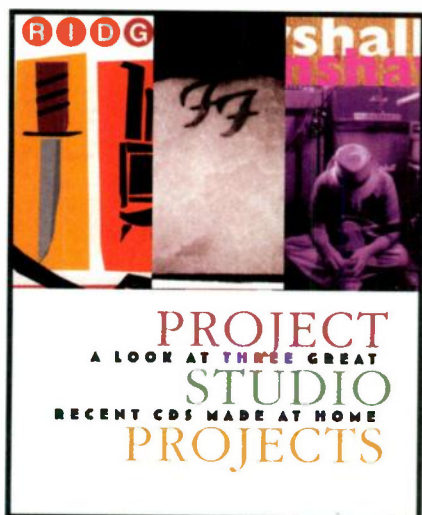
BY ROBYN FLANS

The state of Virginia probably didn't know what hit it when Dave Grohl moved there recently, but for Grohl and his band, the Foo Fighters, it seemed the perfect locale to make the group's third album, *There Is Nothing Left to Lose*. —CONTINUED ON PAGE 50



PHOTO: IMACIOCE





—FROM PAGE 42, MARSHALL CRENSHAW

my house [in Woodstock, N.Y.], so named because it's a small building and it's crammed full of equipment," Crenshaw says. Crenshaw lives in Brooklyn these days, so he can't exactly pop into Claustro-Phonic in the middle of the night if the recording urge strikes him. But the studio has served him well, and it's just a pretty car ride away in a spectacularly beautiful part of New York State.

Crenshaw has had an interesting career both in and out of music. His sprightly '80s albums for Warner Bros. earned him a reputation as a skilled pop singer/songwriter, and for a number of years he seemed to be on the cusp of commercial success, although the great breakthrough hit remained elusive. Away from music he enjoyed a decent acting career (he was in *Peggy Sue Got Married* and *La Bamba*, in which he played Buddy Holly). He's had his songs covered by a number of artists through the years, but the best way to hear his brilliant craftsmanship and his considerable guitar chops are on his CDs, the last three of which have come out on the hip Razor & Tie label.

#447 is his strongest and most varied-sounding disc in years; it's brimming with bright melodies and intriguing guitar textures. There are even three cool instrumentals! The CD was recorded at Claustro-Phonic, Alex the Great Recording in Nashville (run by musician/producer Brad Jones) and The Shinebox in Manhattan (run by Stewart Lerman). Half of the album was mixed by Brad Jones at Alex the Great. Crenshaw played guitar, electric bass, drums, drum machines, percussion and melotron, and enlisted a dozen other fine players—including such "names" as guitarist Bill Lloyd and keyboardist David Sancious—to flesh out his tunes. It's a

warm-sounding record—homegrown but fully cooked.

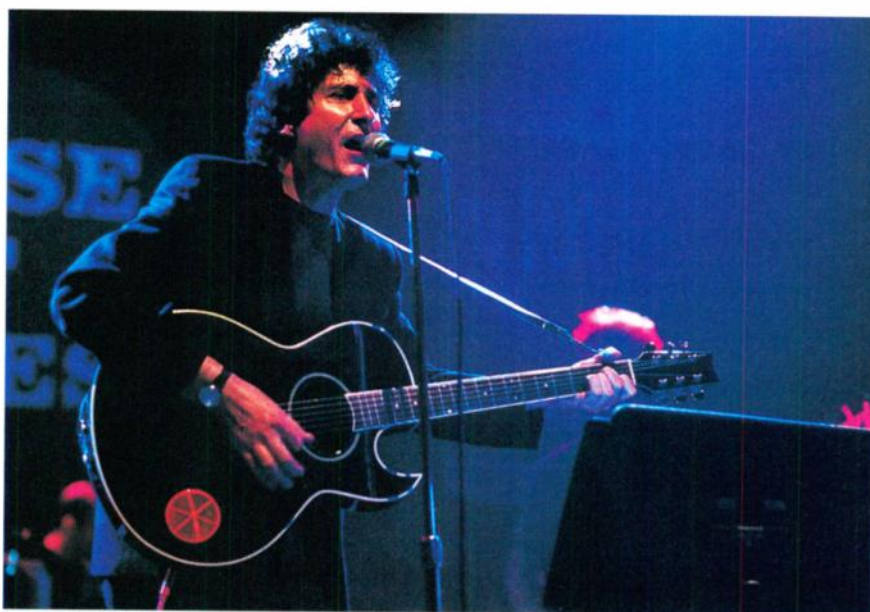
Crenshaw says recording at home the last several years has given him the freedom to make the kind of music he wants without compromise. "In 1993, I had come to the end, thankfully, of my days as a major label recording artist," he says. "I was pretty exhausted, and what I thought I would like to do, if possible, was rediscover some enthusiasm for record-making and songwriting that I'd lost. I wanted to try to continue making records if I could, but the way I wanted to do it was with total autonomy, and I decided to develop a sort of cottage industry approach. In the late

'70s and early '80s, I liked the solitary, narcissist, control-freak approach—I'm from that school of record-making. I idolized guys like Les Paul. I always loved having recording equipment, so I thought I'd get the best equipment I could afford and make records on my own, and it's been great so far.

"The first thing I bought was a couple of ADAT machines and a BRC [controller]. This was '93 to '94 when that stuff was coming out. ADATs have changed the world. It's been a revolution, and I'm part of it. Then I started putting together other pieces of equipment based on things I'd read or things

—CONTINUED ON PAGE 50

STAN RIDGWAY THE MUSIC IS THE MOVIE



BY BLAIR JACKSON

Stan Ridgway has always been a keen observer of modern life. From his days as the frontman of the unusual but always compelling Los Angeles band Wall of Voodoo (you loved "Mexican Radio" and their twisted take on "Ring of Fire")

through a fruitful solo career that has produced a few minor hits ("Camouflage," "Drive She Said") and lots of interesting, moody music, Ridgway has shown a knack for capturing the rhythms of both real and imagined lives in small lyric and musical details. A huge fan of movie music, Ridgway creates songs and soundscapes that are highly cinematic—there are noir-ish elements in some pieces; others have the

lingering flavors of Bernard Herrmann and Ennio Morricone in them. Ridgway's latest CD, *Anatomy*, presents a nice glimpse of his different worlds—offbeat pop tunes, dreamy keyboard-driven instrumentals, odd song sketches and a decidedly off-kilter cover tune: "Sixteen Tons," done to a hip hop beat.

For the past few years, Ridgway has cut his CDs mostly at Impala Digital, a project studio in his Venice, Calif.,

INTRODUCING THE **POWER** OF ORVILLE



It's the dawn of a new era in audio effects.

There's never been
a product like **Orville™**,
the new **Eventide Harmonizer®**
brand effects processor.

MORE POWER With up to eight times the power of our legendary DSP4500 processor, Orville has the power to do more and do it better than anything you've ever heard. Because it's not just Orville's amazing raw power, it's how we use it. Orville makes possible incredible new programs such as UltraShifter™ pitch shifting, and FourSidedVerb, and so many more.

MORE CHANNELS Orville gives you up to eight simultaneous channels (four digital + four analog). It's the one effects processor that's ready to handle all your multichannel audio requirements, including DVD production, digital television, and motion picture post-production as well as music recording and live sound.

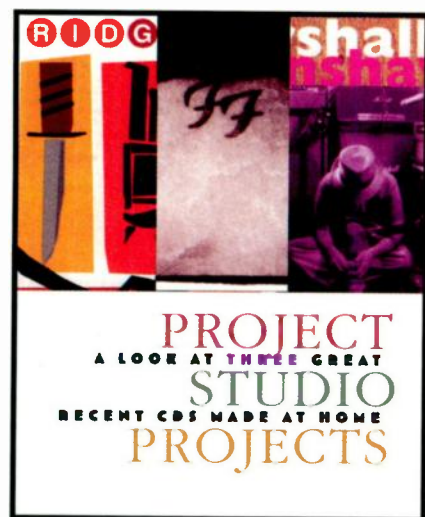
MORE QUALITY FEATURES

Orville's 96kHz/24bit hardware capability promises the cleanest sound ever. Orville's anything-to-anything routing capability gives you flexibility you never had before. Orville's dual machine functionality lets you simultaneously process two completely independent multichannel effects. And Orville's built in sampler gives you up to 174 seconds of pitch- and time-changeable audio on playback.

MORE IS VERY GOOD We've packed so much goodness into Orville, this ad barely scratches the surface. You need to see and hear Orville for yourself, at selected Eventide dealers. For dealer locations or for more dealer info, see our website, www.eventide.com or call Eventide at 201-641-1200.

Eventide®
the next step®

ONE ALSAN WAY / LITTLE FERRY, NJ 07643 USA
201-641-1200 / www.eventide.com



apartment. But he has been recording at home much longer than that. "My first 'studio' was back when I was 15, and I used two cassette recorders that I would overdub on by running them back and forth," Ridgway recalls. "I would put my head between the two and play harmonica, sing or play guitar. It was primitive, but that's what got me into recording and sound. That led me to investigate other ways of doing that after a while, and I found a machine made by Sony called the TC-630, which came with its own set of speakers, and you ping-ponged from one side to the other. It also had a wonderful echo dial on it, and the compression you'd get going back and forth was interesting. It made you commit, because once you ping-ponged for real, you couldn't go home again, and that was an interesting process for me."

Long before he formed a band, "I rented an office off Hollywood Boulevard with the idea of doing music for sci-fi movies," Ridgway says. "It was around 1976, and at that time there weren't many bands around, and there were no places to play. I had a big metal desk and a rotary phone, and I moved with my TC-630 into that office. I called the company Acme Soundtracks." Not much soundtrack work came his way, though he did manage to land some music in a Canadian tourist film—"It was bears running through tundra and geese flying south and stuff like that. The music I wrote for it actually kind of sounded like 'The Passenger' on the first Wall of Voodoo record a few years later."

Around this time Ridgway met Brendan Mullen, who had rented the basement of the nearby Pussycat Theater as a band rehearsal hall for their friends. That space soon became The

Masque, L.A.'s first great punk music club (where The Germs, X and many other bands got their first significant exposure), and it was there that Ridgway met guitarist Marc Moreland, whom he coaxed into coming over to Acme to work on what Ridgway calls, "horrific soundscapes." Ridgway was also writing lyrics to go with these soundscapes, "but I couldn't find a singer for them. Everyone we tried out thought that what I'd written was really stupid, and it was at the time when all the singers were like, 'Yeah, Iggy! Rock 'n' roll,' which wasn't exactly what I was doing. So I ended up



doing it myself pretty much out of default." And so Wall of Voodoo was born around Ridgway's lyric and musical vision and his distinctive spoken/sung vocals.

"All of the initial recordings Wall of Voodoo did before we went into a studio were done on the TC-630," Ridgway says. "My frustration was that when you went to the larger studios, it seemed to kill the mood." Nonetheless, the first Wall of Voodoo LP was cut at a small L.A. studio called Wilder Recording. "We went in there in the middle of the night, recorded from about midnight to 6 in the morning. They mostly made tape copies there, but we had a contact who let us work there really cheaply."

"As Wall of Voodoo began its career, we butted heads with a lot of people. They would approach us like this—'Oh no, Stan, you don't want to record yourself or even put your hands on the console here.' It's as if they had a scary voodoo necklace filled with diodes and transistors. They'd kind of shake it in front of you saying, 'It's *far* too complicated for you!' But I never bought that thinking."

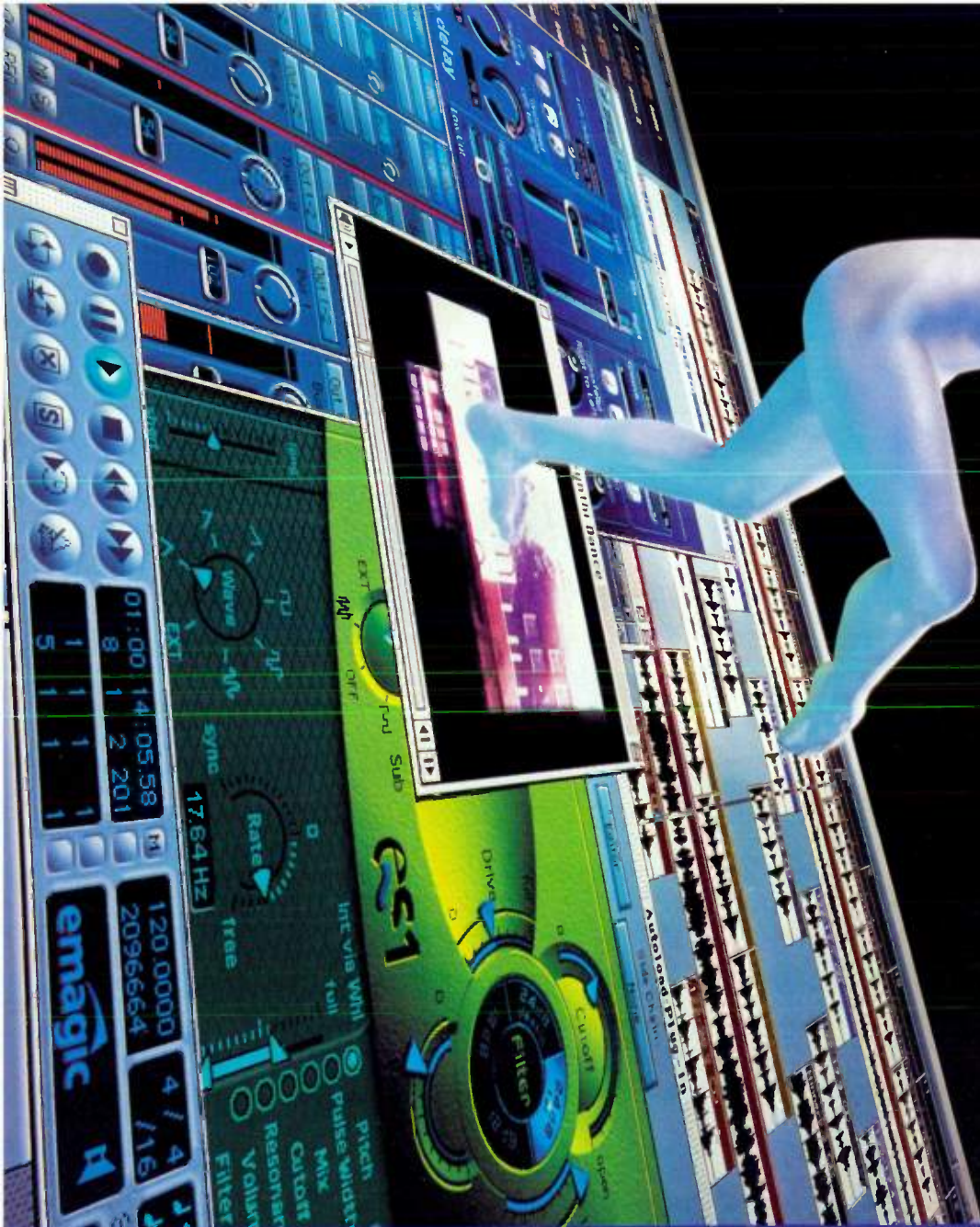
"As the '80s encroached on us there seemed to be a rule book about how to record, what to do, how to mix and it culminated in an '80s sound that sounds

like the whole band is in a cavern, coming from a very far away planet," he continues. "It was influenced by the reverbs that were being built at the time, and the popular records of that time—Bruce Springsteen and U2 and all those others, the Steve Lillywhite sound. And because it was popular, that sound filtered down to bands it was completely inappropriate for."

Wall of Voodoo managed to avoid a lot of the pitfalls of many young bands by retaining some control in the studio and by working with sympathetic engineers. "Then, after my first solo record came out [in 1985], I had a pretty sizable hit in Europe with 'Camouflage,'" Ridgway says. "That gave me a lot of confidence, and people were excited about what I was going to do next. And I thought now is the time, I'm going to open my own studio. I'm going to lease a building on Burbank Boulevard in North Hollywood, and I'm going to open a new studio: a creative place for musicians and other people to work. I used partial amounts of my recording budget to buy an MTR-90 and an old Allen & Heath board that I got from Stewart Copeland; it was actually the board that the early Police stuff had been recorded on. What happened, though, is that I found I didn't enjoy running a commercial studio. And I found that the anxiety it produced in me made it almost impossible for me to relax at night or even in my own studio—I was worrying about the overhead and 'Did I turn that burglar alarm on?'"

"I found I wanted to dump the whole thing and move it back into my house so I could run around my bedroom in my slippers and decide when I wanted to sing; and maybe not even get dressed to do it. So I moved the MTR-90 up into the bedroom like it was an old washing machine or something." And he's been recording at home happily ever since.

The Allen & Heath board and MTR-90 are long gone. "I'm all-digital now," he says. "I use Cubase audio—the VST full-blown 24 program. I even used that sequencer back when it was called Pro 24. I had disk record on a Macintosh. I also have two ADATs and a Tascam DA-98, which I use for films, but most of the time if I'm making my own stuff I do it in the computer, and I spit it out either directly as a CD master, or I go through a Lightpipe to a DAT player. I do all my mixing and panning and EQ'ing within the domain of the panels of Cubase." Ridgway currently uses a



AUDIO
Logic[®]

Your imagination drives the urge to experiment, Logic Audio provides the creative tools to set your imagination free.

The Logic Series offers superior timing, unequalled flexibility, high quality effects and a new optional software synthesizer to give your musical productions that crucial something extra.

free to experiment

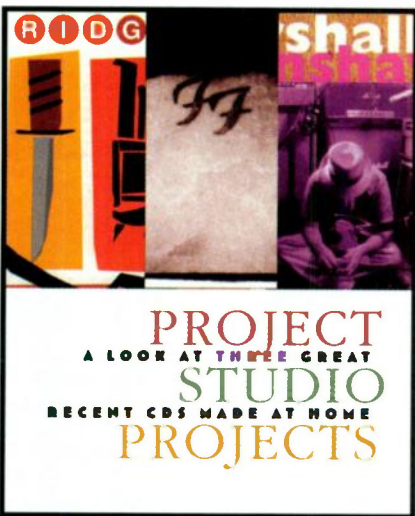
Logic Audio Silver Version 4.0 for Windows and Mac is now available from the finest music and professional audio retailers.

Technology with Soul.

Emagic Inc.
Tel. +530. 477 1051 E-mail: info@emagic.de
Fax +530. 477 1052 <http://www.emagic.de>

All rights reserved. Emagic[®], Logic[®] and Logic Audio[®] are Registered Trademarks of Emagic. All other trademarks are property of their respective owners.

CIRCLE #023 ON PRODUCT INFO CARD



Mackie 24•8 console but says he's seriously considering buying a digital board in the near future. "I recently purchased a Kurzweil K2500 and maxed that out with all the memory and sound blocks and the sampler. I like that a lot, especially for soundtracks and orchestral textures. I also have two Roland 770s that I use for sampling. I'm pretty lean and mean here."

Ridgway is hardly an equipment junkie, but he does make an effort to keep his system up to date, and he likes

to experiment with new plug-ins: "When there are new tools, what's fun is...well, if you pick up this new tool called a hammer, you may use the wrong end and get the job done by some other method. Somebody walks in and says, 'Hey, that's not the way you use that! But it sounds good.' That's what's fun about new things."

"I think there's a tendency in people who are putting together their own studios to buy too much equipment at the same time, and then they find out it's not all compatible," he continues. "I always suggest getting one piece at a time, and try not to let the hype of technology influence you. At the same time, though, I do believe in using good microphones; that really is important. I like Neumanns and the [AKG] 414 and the Shure Beta series mics. The Shure 81 is great on guitars and cymbals. I usually do my vocals on an SM58. If I want something sharper I sing through a 414."

Of his new album, *Anatomy*, Ridgway says, "It was made over a year and a half, two years. Out of the 12 cuts that are on there, there are 20 that are still here on the shelf. When I put together a record, I like to make it all of one mood,

more or less. I like the idea that this record seemed to be in no particular rush to get anywhere. I look at the record as a sort of slow waddle into middle age. It's my middle passage. Half of it are things that happened to me; the other half are things I make up." Ridgway's wife, Pietra Wextsun, played some keyboards on the project, and a number of other musician friends helped out here and there on what is still, mostly, a solo album.

Clearly, Ridgway likes both the freedom and solitude having his own studio offers. In recent months, he's worked on music for a pair of Hollywood films—*Speedway Junkie*, with Darryl Hannah, and *Error in Judgment*, which stars Joe Mantegna. Ridgway and his friend Stewart Copeland (who has his own studio in Culver City) also have a song in the new Sharon Stone-Nick Nolte-Jeff Bridges film *Simpatico*. "I work on three or four film cues a week whether I'm working on a film or not," Ridgway says. It all gets stirred around in the pot at Impala Digital, the eventual destination to be determined later. A film? Another solo album? A commercial? It will probably turn up somewhere, and wherever it is, it will probably be interesting. ■

www.microboards.com

"Hear The Power"

StartREC™

CD-R Editor/Duplicator

StartREC is the first Digital Audio Editing System combined with multidrive CD-R duplication capability designed specifically for the Audio Professional, from MicroBoards. The StartREC offers Audio Professionals advanced hard disk editing tools, and the ability to create simultaneously up to four custom audio CD's in a convenient rackmountable or desktop configuration.



MICROBOARDS
Technology, Inc.

Setting the Course in CD Technology!

Headquarters: 800 646-8881 • Fax: 612 556-1620
East Coast: 888 215-3966 • Fax: 610 495-5437

CIRCLE #024 ON PRODUCT INFO CARD



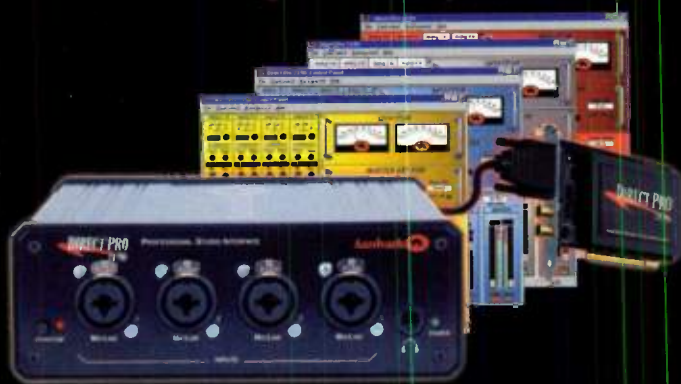
Ultimate Plug & Play

One of the best known companies in the industry has just gone direct; Direct from your microphones right to your PC. A perfectly integrated system to give you better sound quality and to make your PC recording experience refreshingly easy.

The **Direct Pro 24/96** is a clever combination of hardware, software and raw DSP power that completely replaces the need for an outboard mixer, custom mic preamps and a rack full of messy and expensive effects gear. Just plug in your mics and you're on your way to multitrack recording heaven, with the hand-crafted mic preamps, shielded PCI card and amazing real-time effects as an added bonus.

Tons of features, one low price and all with a professional fidelity Aardvark clients demand.

DIRECT PRO 24/96



4 XLR mic inputs
Phantom Power
4 1/4" line inputs
Headphone Out
6 Line Outputs
+4 dBu/-10 dBv

24 Bit / 96kHz
Low-noise Mic Pre's
DSP Mixer
24 Bit S/PDIF
16 MIDI Channels
Digital Patchbay

Steinberg™ ASIO Drivers
Standard MME Drivers
DSP Powered Effects:
- Real-Time COMPRESSOR
- Real-Time 3-Band E.Q.
- Real-Time REVERB

"I replaced my audio card & mixer with the Direct Pro 24/96 and was absolutely astonished by the sound of the shielded mic preamps and the real-time DSP effects. This one purchase has completely revolutionized the way I make music"

Jacob F.
Musician Extraordinaire



No mixer needed.
Just plug in and go!!

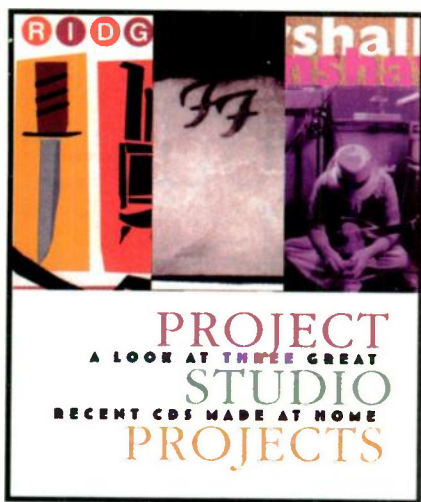
\$ 699 US LIST

For the ultimate plug-and-play audio experience, call today: 734.665.8899

www.aardvark-pro.com

CIRCLE #025 ON PRODUCT INFO CARD

Aardvark 
Superior sound. Simplified.



tion, so we took the conventional route of interviewing many different producers. We had done demos, so we would play the demos for the producers to see what sort of suggestions they would make. We went into a studio we hired and lived at outside of Seattle, and spent a lot of time getting sounds and perfect performances, comping vocals and working as hard as we could to make it sound as pristine, precise and powerful as possible.

"That's the most produced thing I

have ever recorded in my life, but I don't regret it at all," Grohl continues. "I'm glad we went through the process, and I'll try anything once. We did well with that record, and I still listen to it with fondness."

This album, however, was a creative work in progress for the four-and-a-half months the band was holed up in Virginia. Although they took a great deal of time on the arrangements and instrument placement, the recording wasn't as scrutinized as the prior project, and the album was made *sans* Pro Tools.

"I feel a lot of music that has been recorded in the last five years has fallen victim to production," Grohl explains. "I feel that people are relying too much on things like Pro Tools or Autotune for vocals and drums, and I'm a drummer! I miss hearing a song on the radio that speeds up in the chorus or has a mis-hit on a snare in the second verse. I miss all the things that made John Bonham, Keith Moon and Stewart Copeland some of the most memorable, influential drummers in history. It's a drag that people have become so concerned with perfection. I think it has something to do with the concern that something that isn't pristine and

perfect isn't safe.

"The biggest challenge of this record was trying to get everything to sound good and *not* using those things," he continues. "We left a lot of glitches in. What some people would call a mistake, we called charisma. What some people would call a glitch, we would call personality. At the same time, we didn't just throw down 11 songs and say, 'Here's your record.' We really focused on arranging, the placement of instrumentation, where things were going to fly in, how one instrument could complement the other, and the movement of the song from point A to point B. If it was going to go to the second verse, it was going to have to feel like you were in a new place."

Grohl's creative process was a little unconventional. Instead of the usual sequence—recording drums and bass first—they primarily recorded drums and guitar, adding the bass last. "Nate was left in the hot seat, because after Taylor and I would come up with the arrangements and accents, Nate would have to come in with his bass and find his place in the middle of that," Grohl notes. "He is a genius. He can sit upstairs all day long while Taylor and I

The New VC60

JOEMEERK

If you want "warm vintage retro sounds" for your digital or analog recordings with all the features found on our high end products for under \$600, look no further than the new JOEMEERK VC6Q British Channel.



PREAMP Input gain control • Phantom power with LED indicator • 20db Pad Switch with LED indicator • Phase Reverse with LED indicator • Mic/Line switch with LED indicator • An accurate LED input "peak" meter • XLR microphone input, 1/4" balanced line input, 1/4" instrument preamp

COMPRESSOR Compression in/out switch with "Blue" LED indicator • Variable attack control • Variable Compression ratio • Variable depth control • Variable release control • Five segment LED gain reduction meter

EQUALIZER Bass shelf fixed 100hz +/- 18db • HF shelf fixed 8Kz +/- 18db • MF parametric sweepable 600Hz - 3.5kHz • EQ bypass switch with LED

OUTPUT Output volume control • Nine segment LED output meter • 1/4" jack Insert point • Dual 1/4" TRS line level outputs

"DARE TO COMPARE"



PMI Audio Group 23773 Madison St. Torrance, CA 90505
toll-free 877 563 6335 fax 310 373 4714 site pmiaudio.com

CIRCLE #027 ON PRODUCT INFO CARD

Session in LA Talent in London Deadline tomorrow



No problem.

Just logon to Rocket Network™. Our Internet Recording Studios make it easy to work with anyone, anywhere, anytime. You use the audio software you already know to achieve the professional-quality sound your projects demand. With everyone working at the same time, you'll make your deadline. And the creative possibilities are endless.

Internet Recording Studios store the master version of your project online, allowing your team to listen and contribute to it with any RocketPower™ audio software. Because it supports all formats of digital audio, you don't waste time with file conversion. Plus, you don't have to buy new hardware.

With Internet Recording Studios you can:

- Share digital audio and MIDI (even between different applications)
- Control access to your studio and store your projects securely online
- Compress files with QDesign and MP3 CODECs (optional)
- Communicate via chat and instant messaging



Register by 2/29/00 at
www.rocketnetwork.com
and get a
FREE
Professional Upgrade

(\$29.95 value)

Use source code: RN2



Internet Recording Studios

CIRCLE #028 ON PRODUCT INFO CARD

THE STATE OF THE 8-BUS

by Roger Maycock

First came the Alesis ADAT and Tascam DA-88, which started the whole democratization of the audio industry by making good-sounding equipment available at a low price. Then, as computers became more powerful, along came products like Digidesign's Pro Tools, paving the way for affordable digital recording and editing on the desktop. Soon after came low-cost digital audio cards for PCs and Macs, which, combined with integrated MIDI sequencers, started appearing on musicians' computers everywhere.

ANALOG

OR

DIGITAL

What was left? Well, users wanted digital mixing consoles, and the manufacturing community responded, with Yamaha beating everyone to the punch with the introduction of the O2R.

For the few years following the O2R's introduction, the industry seemed obsessed with all things digital. High-end commercial studios certainly were in no hurry to retire their Neve, SSL and Euphonix consoles, yet smaller studios and offline editing suites in the post-production community gobbled up digital boards like there was no tomorrow.

But somewhere along the road to Mecca, we rediscovered those unique and admirable qualities that, in many respects, digital couldn't quite deliver. Before we knew it, we were putting some of our older analog equipment back into service.

With a high percentage of music and audio production being performed in project or personal studios, the venerable 8-bus recording console has firmly established itself as the *de rigueur* mixer of this new-generation facility. Regardless of your preference, there are some incredible 8-bus boards available—both analog and digital. The time is right to take a look at the available choices.

Get on Board



Panasonic DA7



Allen & Heath GS3000



Mackie D8B



Carvin Studio/Live Series

THE CONTENDERS

The various makes and models are listed here in alphabetical order to ensure fairness. As you review the information on the various digital mixers, bear in mind that many of the input configurations take the digital inputs into account, and, as such, the number of analog XLR and line level inputs frequently don't add up to the sum total. Also, numerous accessory products from both the original manufacturer and third-party sources can enable you to convert these digital inputs to additional analog inputs if desired. For more information on any of these consoles, see the manufacturer's sidebar.

ALLEN & HEATH GS3000 (ANALOG)

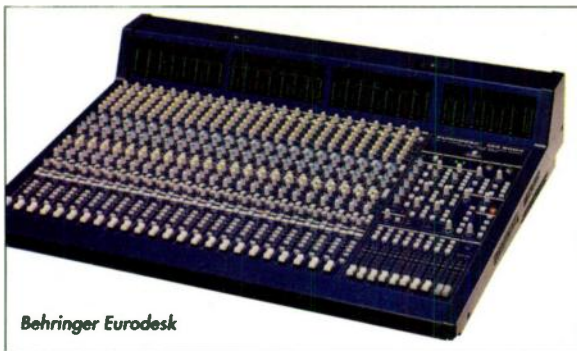
Available in 24- and 32-channel configurations, Allen & Heath's GS3000 provides a 4-band EQ section that can be split HF/LF, and twin parametric mids between the channel and monitor paths. The GS3000 has faders on both the channel and monitor paths and incorporates two valve preamps, enabling engineers to take advan-

tage of the traditionally warm tube sound. Of equal importance, the GS3000 does not require fader swapping when going from tracking to mixdown modes. The mixer supports group/direct switching, incorporates full facilities for studio and control room monitoring and can interface with three 2-track master recorders. A meter bridge is optional.

The GS3000 employs vertical-mount PCBs throughout its construction and is housed in an all-metal frame. Standard amenities include 4-LED metering on each input, solo-in-place and PFL on both signal paths, and six aux sends on each channel that can derive their signal from either the channel or monitor paths. The mixer has facilities for MMC transport control of externally connected recorders and will accommodate either 56 or 68 inputs at mixdown.

BEHRINGER EURODESK (ANALOG)

Featuring 24 dual-input channels, the Behringer Eurodesk is an in-line design with integrated meter bridge,



Behringer Eurodesk

4-band EQ with sweepable mids, eight subgroups, 24 balanced tape inputs/outputs (switchable $\pm 4/-10$ dB), discrete mic preamps ($+48$ V) and 100mm Panasonic faders. A universal expander port can link the mixer to another Eurodesk (or any other console) for expansion.

The Eurodesk has facilities for solo-in-place and PFL, plus six stereo effects returns and six (pre/post switchable) aux sends available on both signal paths. The mixer has a built-in talkback mic, ten 12-segment bar-graph LED meters with peak/hold capability and a rackmount 400-watt power supply.

CARVIN STUDIO/LIVE SERIES (ANALOG)

Available in 24-, 40- and 56-channel configurations, Carvin's Studio/Live Series consoles feature 4-band, high and low shelving with dual-mid sweep EQ on each channel, plus bypass facilities. All channels offer direct outputs with balanced TRS connectors, tape in and line in (each with balanced TRS jacks), balanced XLR mic inputs (with phantom power and TRS channel inserts), 100mm Alps faders and Analog Devices SSM2017 devices for the mic/line preamps. By flipping the channel and monitor paths at mixdown, engineers can employ the channel inputs for live or virtual MIDI inputs—effectively doubling the input capacity of the mixer.

The Carvin Studio/Live Series consoles are housed in an all-steel chassis—including the meter bridge, which is standard. The rackmount 400-watt power supply connects to the console with a standard, readily available 4-conductor Speakon cable.

MACKIE 8-BUS SERIES (ANALOG)

Mackie Designs has earned an enviable reputation in the mixer market for both its analog and digital offerings. Available in 16-, 24- and 32-channel configurations, the Mackie 8-Bus Series analog consoles are both expandable and automatable. Each channel strip provides a balanced XLR mic input, a line input, direct out, channel insert and channel

trim. The mixer's EQ provides high and low shelving, parametric mid and a sweepable low/mid control. Each channel also has a low-cut filter, and a "Mix B" position effectively doubles the number of inputs at mixdown. The mixer has facilities for solo and mute (with associated LEDs) per channel and

provides 100mm faders. A meter bridge is optional.

The Mackie 8-Bus consoles have extensive control room and studio monitoring provisions and incorporate a built-in talkback mic for communication purposes. The 24- and 32-channel models have an expander port for the optional 24-E expander module, which adds 24 channels.

MACKIE D8B (DIGITAL)

The Mackie D8B's 56 nominal inputs include 12 phantom-powered XLR mic pre/line inputs, 12 line inputs and 24 channels of optional ADAT, TDIF, AES/EBU or analog I/O using 24-bit A/D and D/A converters. Eight additional channels of I/O are available via an extra analog/digital card slot. The D8B provides 12 aux sends per channel with eight bus outs. The D8B accesses

tracking, mixing, groups/buses and effects returns using a single "stacked" 24-channel fader bank. For 2-channel digital I/O, AES/EBU and S/PDIF formats are included. Both moving fader and dynamic snapshot automation recall all console changes. The D8B provides four types of 4-band parametric EQ, plus compression and gates on all 48 channels. An optional Apogee card provides ultra-low-jitter clock.

The Mackie D8B uses an external, rackmountable enclosure housing 32-bit Pentium processors and a hard drive for saving automation files. The CPU powers an optional PC-compatible SVGA monitor for displaying system parameters, setups, EQ curves, etc., and accommodates a standard PC keyboard and mouse. The D8B also includes Apogee UV22 bit-rate-reduction technology, an integrated meter bridge and an Ethernet connection, which facilitates software upgrades and console cascading. Additionally, Massenburg mastering EQ, Drawmer dynamics, Antares Auto-tune, and bundled TC effects are among the supported software plug-ins.

ORAM SERIES 8 (ANALOG)

John Oram's Series 8 adopts the company's "no compromise" sound philosophy by using what the company describes as "the very best components,

8-BUS CONSOLE MANUFACTURERS

Allen & Heath USA

www.allen-heath.com
Circle 201 on Product Info Card

Behringer

www.behringer.de
Circle 202 on Product Info Card

Carvin Pro Sound

www.carvin.com
Circle 203 on Product Info Card

Mackie Designs

www.mackie.com
Circle 204 on Product Info Card

Oram Professional Audio

www.oram.co.uk
Circle 205 on Product Info Card

Panasonic Pro Audio

www.panasonic.com/proaudio
Circle 206 on Product Info Card

Roland Corporation U.S.

www.rolandus.com
Circle 207 on Product Info Card

Soundcraft

www.soundcraft.com
Circle 208 on Product Info Card

Speck Electronics

www.speck.com
Circle 210 on Product Info Card

Spirit by Soundcraft

www.digital328.com
Circle 209 on Product Info Card

Studiomaster Inc.

www.studiomaster.com
Circle 211 on Product Info Card

Tascam

www.tascam.com
Circle 212 on Product Info Card

Yamaha

www.yamaha.com/proaudio
Circle 213 on Product Info Card

Digital Solutions

ADVANTA™

**(RADAR II™
HDR
SERIES)**

PicMix™

Lightwinder™

Today's fast-changing audio productions need today's solutions, not tomorrow's promises. With any of our affordable, full-connectivity digital audio solutions, you have just that.

Consider the flexible **ADVANTA™** Series Digital Production System; or the user-friendly **RADAR II™** High-Definition Recorder Series; **PicMix™** Surround-Sound Monitoring System; and **Lightwinder™** Audio Transmission & Routing technologies.

With over 30 years experience in the business, who knows more about recording than Otari?

CIRCLE #031 ON PRODUCT INFO CARD



ADVANTA: The 24/96 Large-Format Digital Production System*



RADAR II HDR Series: Multi-channel 24 & 48-Track High-Definition Recording

D V D



PicMix: Make any existing audio console Surround-Sound Ready



Lightwinder: The Advanced Fiber Optic Audio Transmission & Routing System



RADAR II

OTARI

DIGITAL'S NEW STANDARD

www.otari.com

Otari Corporation, USA Tel: 800/877-0577 +1/818/594-5908 Email: sales@otari.com • Otari, Inc., Japan Tel: +81/424-81-8626 Email: salesinfo@otari.co.jp
• Otari Europe GmbH Tel: +49/2159-50861 Email: euro@otari.de • Otari Singapore Pte. Ltd., Tel: +65/284-7211 Email: otarisp@singnet.com.sg
• Otaritec Corp., Japan Tel: +81/3-3332-3211 Email: sales@otaritec.co.jp • U.S. Regional Offices: New York +1/212/324-1700 • Nashville: +1/615/255-6080

*R & D in cooperation with Sanyo Kogyo, a member of the Otari Group.



Oram Series 8

the magic of Oram's circuitry design plus the very latest surface mount technology." This 24-channel console uses Analog Devices components for its pre-amplifier circuitry. In addition to its shelving EQ, the mixer provides a variable low-cut filter and a high-cut button that is designed to filter RF interference by placing a set of filter laws in the audio path. Each channel has a direct output, which can be trimmed by the Aux 5 send pot—enabling this mixer to accommodate 24-track recording.

The Series 8 provides seven aux sends per channel with five effects returns. The main channel path uses 100mm faders, while the monitor path uses 60mm faders. The mixer has two separate stereo mix outputs with master faders, AFL, solo-in-place, PFL and mute on each channel. There are talkback facilities, a sub-bass output that employs an internal crossover and an external power supply. The mixer will accommodate 72 inputs at mixdown.

PANASONIC DA7 (DIGITAL)

The Panasonic DA7 digital mixer features a 38-input (8 mic XLR/8 line level), 8-bus design, with optional expansion cards to accommodate ADAT, TDIF, AES/EBU and S/PDIF digital formats. The DA7 provides snapshot (with 50 scenes plus a lockout feature) and moving fader dynamic automation, with 21 moving faders plus support for surround panning capability. The DA7 4-band parametric EQ and dynamics on every channel, but has no onboard multi-effects processing. This mixer has an "analog feel" because it provides dedicated controls for EQ, dynamics, pan, aux and bus assignments. The DA7 also has facilities for controlling external devices via MIDI Machine Control and provides support for 5.1 mixing. A variety of digital I/O cards, a meter bridge, a SMPTE sync card and expanded au-

tomation software for either Mac or PC are optional.

The DA7 employs 24-bit A/D and D/A converters, and two mixers may be interconnected with full bi-directional control. The DA7 provides a large variable-contrast backlit display for checking system parameters. Phantom power is supported.

ROLAND VM-7200/7100/C7200/C7100 (DIGITAL)

Roland's VM-7000 Series digital mixing system is unique because it provides separate hardware for processor and control surface. With onboard dynamic moving fader automation, input capacity for as many as 94 channels, 40 XLR mic/line inputs, total recall including Trim, 16 stereo onboard multi-effects and a "virtual patchbay" for defining



Roland VM-C7200

input destinations, the VM-7000 Series can be tailored to fit different types of production environments. Accessories include the DIF-AT Interface Box for connecting ADAT and TDIF MDM recorders, the AE-7000 8-channel AES/EBU interface, the ADA-7000 analog expander, the VS8F-2 Effects Expansion Board and the RO-C7100 rackmount

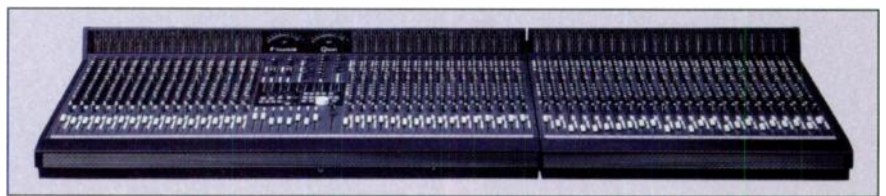
assignable outputs—all of which can be freely assigned for aux or record functions. The VM-7000 Series also provides 4-band parametric EQ and support for 5.1 mixing.

ROLAND VM-3100/VM-3100PRO (DIGITAL)

Both the VM-3100 and VM-3100Pro have 24-bit A/D and D/A converters, snapshot automation, dynamic automation via MIDI, onboard stereo effects and a comprehensive backlit LCD display. The VM-3100 provides a 12-channel, 8-bus-by-2 configuration with 3-band EQ, while the VM-3100Pro offers 20 channels (using R-BUS) and eight buses. The VM-3100Pro also has a second effects processor that incorporates COSM (Composite Object Sound Modeling) microphone simulation and speaker modeling technology, plus Roland's proprietary R-BUS I/O terminal for connection of the DIF-AT Interface Box, which enables connection to ADAT and TDIF equipment. Options include the DIF-AT Interface Box, the AE-7000 8-channel AES/EBU interface and the ADA7000 analog expander.

SOUNDCRAFT GHOST (ANALOG)

Soundcraft's Ghost is available in 24- and 32-channel configurations with either 56 or 72 inputs at mixdown. The console's 4-band EQ incorporates two fully parametric mid-bands with variable Q, plus high and low shelving on each input channel. This console offers ten aux buses and two stereo pairs with four stereo effects returns. Additionally, the console's in-line design facilitates



Soundcraft Ghost

adapter kit for the VM-C7100 controller.

The separate-components design approach eliminates the need for analog splitters or snakes, thus reducing the possibility of signal degradation or noise. This arrangement also enables the processor (which includes all inputs) and mix controller to be placed where they provide the greatest functionality for the studio. The system's FlexBus functions facilitate as many as 24 individual buses with eight dedicated analog outputs per processor plus 16

the splitting of EQ and muting functions to either the main or Mix B (monitor) signal paths as needed. There are also provisions for solo and cut on both the main and Mix B signal paths. Balanced XLR inputs reside on all input channels, with individually switchable phantom power. Soundcraft also offers an optional 24-channel expander unit that accommodates a total of 48 inputs at mixdown.

The Soundcraft Ghost provides extensive support for MMC-based trans-

VIENNESE TWINS

C3000B
STUDIO MIC



C3000B
STAGE MIC



ONE MICROPHONE • MULTIPLE PERSONALITIES

The New
C3000B

FOR STUDIO OR STAGE



A Harman International Company

AKG Acoustics, U.S. • 1449 Donelson Pike • Nashville, TN 37217 • Phone: (615) 360-0499 • Fax: (615) 360-0275 • Web Site: <http://www.akg-acoustics.com> • E-mail: akgusa@harman.com

CIRCLE #032 ON PRODUCT INFO CARD



port control of external recorders—complete with an integrated jog/shuttle wheel. For MIDI control of external equipment, Group faders 1-4 can be configured to govern effects units or other equipment that will respond to MIDI continuous controller data. The Ghost provides four internal mute groups, phase reverse, solo-in-place and PFL. The Ghost is also available in a simpler LE version, which omits the MIDI Machine Control, mute automation and mute groups.

SPECK ELECTRONICS XTRAMIXCXI (ANALOG)

With a total of 76 inputs, the Speck XTRAMIXcxi is a four-rackspace, 40x8x2 mixer that provides 20 stereo line inputs, eight stereo effects returns and has facilities for 8-channel monitoring. Billed as a mixer that can make the “console-less studio a reality,” this compact board can accommodate a wide range of signals (-20dB to +28dB) from keyboards, samplers, playback equipment and signal processors. Its Master section has eight discrete subgroup level controls with the ability to accommodate 8-track in-line monitoring, in addition to the stereo program, stereo monitor and head-

phone controls. The stereo cue and aux returns facilitate a variety of signals that can be mixed with the primary input signals to the monitor and headphone outputs.

The XTRAMIXcxi uses an external, regulated power supply. Its ten-segment VU meter consists of a series of tiny LEDs and indicates the relative levels of the stereo program and the eight subgroup outputs. Unusual for a mixer of this variety, the XTRAMIXcxi provides a talkback section with an internal microphone.

SPIRIT BY SOUNDCRAFT DIGITAL 328

Spirit's Digital 328 is unique in that it provides 16-track support for both the ADAT and TDIF digital protocols and does not require expansion cards. The 328 is configured as a 32-input (16 XLR/16 line level), 8-bus mixer, with support for 2-channel AES/EBU and S/PDIF digital I/O; it utilizes 24-bit A/D and D/A converters. There are two Lexicon multi-effects processors, plus dynamics processing, onboard. The 328



Tascam TM-D4000

provides snapshot and dynamic automation of all console parameters with moving faders and 100-scene memory. Phantom power is supported. Options include a TDIF-to-mic preamp, a TDIF-to-analog expander and a TDIF-to-AES/EBU converter.

The 328 provides 3-band parametric EQ for all mic/line, tape return and stereo inputs. One particularly interesting aspect of this mixer is its “E-strip.” By selecting a channel, the lightly colored area across the center of the mixer becomes a horizontal input channel—providing immediate access to that channel's EQ, aux sends, channel pan and routing assignments. There is a

—CONTINUED ON PAGE 182

**YOU WON'T FIND
ART DECO COCKTAIL
SHAKERS OR BEANIE
BABIES ON DIGIBID.
YOU WILL FIND THE
PRO AUDIO AND MUSIC
GEAR YOU'RE AFTER.**

**DIGIBID IS THE
AUCTION ARENA WHERE
THE DEDICATED PRO
CAN BID ON QUALITY
EQUIPMENT—WITH NO
HIDDEN RESERVES.**

**AND THE BEST GEAR
DEALS ON THE PLANET
ARE THE MOST FUN,
ESPECIALLY SINCE
THEY'RE ALL 100%
GUARANTEED.**

**GET ON AND GET OFF.
WWW.DIGIBID.COM**

digibid.com
Auction Network
GET ON AND GET OFF.

CIRCLE #033 ON PRODUCT INFO CARD



Aphex Thermionics Model 1100

Discrete Class A Tube Mic Preamp
with 24 Bit 96kHz A/D

This superbly crafted new breed of advanced tube microphone pre-amplifier reaches far beyond mere technical excellence to deliver sound that is uniquely involving, compelling, and real. Our incredible new 2 channel Model 1100 gives you up to 20dB more headroom than conventional preamps, allowing you to record hotter tracks with the highest possible digital resolution. This unprecedented amount of headroom, combined with an EIN of -135dB, allows you to take more gain without the pain of overload distortion or noise.

MORE GAIN-NO PAIN

To achieve this amazing performance, we developed new proprietary circuitry - here's a taste...

- Discrete Class A Bipolar PNP Solid State Front End
- Second Stage Reflected Plate Amplifier™ Tube Circuit
- Sweepable Low Frequency Cancellation Filter (LoCaF™)
- MicLim™ limiter on the microphone itself makes the 1100 virtually crash proof
- Drift Stabilized™ A/D Circuitry eliminates the need for high pass filtering in the digital domain
- Third Stage Reflected Plate Amplifier Tube Circuit Discrete Class A Impedance Balanced Output Stage

MORE GAIN-NO PAIN

Compare this to any other mic preamp in the world - you'll quickly appreciate the benefits of 'More Gain with No Pain'.

For more information visit our web site or contact us for an in depth brochure.

APHEX
SYSTEMS

Improving the way the world soundsSM

11068 Randall Street, Sun Valley, CA 91352 U.S.A.
818-767-2929 • Fax: 818-767-2641 • <http://www.aphex.com>

Aphex, Aphex Thermionics, Reflected Plate Amplifier, LoCaF, MicLim and Drift Stabilized A/D Circuitry are registered trademarks of Aphex Systems.

CIRCLE #034 ON PRODUCT INFO CARD



PHOTO: DAVID JAKEL

Bryan Adams

ONE ON ONE

AND The Warehouse

IN THE STUDIO

Bryan Adams really pisses me off! That's because he's usually right. He was right when he said he could get Tina Turner to sing a duet with him on "It's Only Love" and it would be a hit. He was also right when he said "Everything I Do" would be a big hit.

When he put an SSL in the basement of his house and told me we were going to record his album *Into the Fire* in his living and dining rooms, I said he was nuts, that there would be too many problems. He said I was wrong. He was right. When he said he was going to build a big, beautiful commercial recording studio complex in Vancouver that would be one of the best such facilities on the face of the planet, I told him that this time he'd really lost his mind. Once again, he was right.

Although I do think he's crazy for taking on such a project.

By Bob Clearmountain



PHOTO: BRYAN ADAMS

The main 60x33-foot tracking room, with 24-foot ceilings.

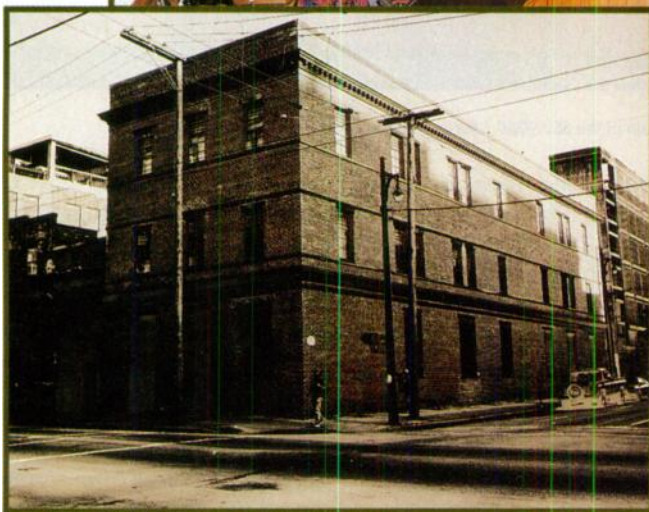


PHOTO: BRYAN ADAMS

The exterior of the Warehouse, a historic, turn-of-the-century building in Vancouver's Gastown district.

Warehouse Studios (www.warehousestudio.com) is a major recording facility, in every sense of the phrase. It could be one of the last ever to be built. Bryan took a very courageous step when he committed what must have been a large portion of his hard-earned (and believe me, this guy works hard) cash to build a place like this. Upon entering the facility for the first time, I knew I was in for an unusual treat when I encountered the open courtyard, complete with parking lot and putting green, where I expected to see the interior of an old warehouse. Taking a right into the main building, and after being graciously welcomed by the receptionist, I slowly became aware of Bryan's massive antique mic collection in an impressive glass display case behind the reception desk. I was starting to think to myself, "This is more than just a recording studio, this is a recording palace!"

Touring the place, one is impressed by the lack of small rooms and tight hallways we studio moles have grown accustomed to. The lounges are large and bright, as are the control rooms and the one main recording room. No claustrophobia possible

here. The stairways are open steel structures that add to the "warehouse" feel, but in a very *Architectural Digest* sort of way. As the place was being built, we kicked around the idea of me interviewing him once it was in operation. Now, I've had the pleasure of mixing Bryan's most recent two albums, *Unplugged* and *On a Day Like Today* in Studio 2 at The Warehouse on the SSL 9080 J Series. Each was a tremendous experience, on a level with working at my other two favorite studios, Peter Gabriel's Real World and, of course, my own Mix This!

So, I interviewed Bryan after those albums were complete, and here's what Bryan and I think about Warehouse Studios, among other things.

So what sort of mental illness were you suffering when you decided to build a large, commercial recording studio? In other words, why did you do it? Are you nuts?

During the course of the ten years or so it took to build The Warehouse, I asked myself that question quite a few times, but ultimately it was not mental illness, it was passion (which in itself is a sort of mental illness) that drove me out of my home studio into this venture. I haven't looked back, so I guess it was right to be passionate!

Warehouse Studios is in the quaint, partially restored "Gastown" section of Vancouver. What influenced your decision to put it there? Did it have anything to do with the nearby strip clubs?

Ha! Well, as a client of our studio you know perfectly well. Of course! I love the colorful ambience downtown. I always leaned toward having a studio in an eccentric neighborhood. I suppose it reminds me a little of New York when we recorded at Power Station together years ago. Remember how rough that area was? New York City was different then. A studio location is very important, and this one is

downtown and that suits me, especially when I drop into Vancouver, because the hotel is so close I can ride my bicycle to work, which I love.

Did you consider proximity to local hotels and restaurants?

My main consideration was a cool building in a potentially cool area. When I bought the place, it was a burnt-out shell with vagrants living in it for shelter. Horrible. But I saw the potential instantly. Since then, the area has sprouted all kinds of restaurants and mad cafes, so we couldn't be happier with the choice. I do wish the city didn't tax us so much.

Can you tell me anything about the building it's in? It's quite old, isn't it?

Yeah, it's really old considering Vancouver's history. Originally, it was an old Klondike Supply building that used to sell goods to gold prospectors that came looking for their fortunes in the rivers of Canada. I didn't realize when I bought it (nor did the city) that it is the oldest brick building in the city—circa 1886. Most other buildings were destroyed by the fire of the same year because they were wood-frame construction.

Anyone interesting recording there lately?

Yes. AC/DC, Metallica, the Tragically Hip, to name a few.

While we were mixing your album last year, your amazing cook, Manu, was preparing our meals in a nicely appointed kitchen/dining room on the second floor. Is the kitchen available to your clients?

Of course! There are separate kitchens in each studio. I don't like to go out for meals when I'm recording; it takes too much time. So we made kitchens a prerequisite for each room.

Do they have to supply their own cook?

Well, people's tastes vary so much that it's better to cater to each client on an individual basis. Our studio manager can arrange to bring someone in to cook. If she likes you, she might even do it herself... On second thought, no, she won't! **As we both know, a good maintenance staff is extremely important in a large, busy studio like The Warehouse. Ron Vermeulen and Chris Potter are both incredibly talented at keeping the place running smoothly, and, of course, Ron is responsible for a great deal of the studio's design. Where did you find these guys, and, knowing your personality, how do you keep them working for you?**

With my charm, of course. [Smiles.] How else would I keep you from com-



Bob Clearmountain at the SSL 9080 J Series, mixing Adams' *On a Day Like Today*.

ing back, Bob? Seriously, Ron and I go back 25 years, when he was a tape op and I was singing in bar bands trying to make demos. When it came time to build a studio in my house, Ron helped me. [The album *Into the Fire* was recorded there.] So, as the studio grew, so did the dream of doing it properly. Both Ron and Chris have been invaluable, and whenever there was a dream, we would build it: mobile studio, portable Pro Tools racks—you name it, we did it, and it always worked.

STUDIO TWO, THE MIX ROOM

For your mix room, which I love by the way, you chose an SSL 9080 J Series desk. Why?

I wondered if you'd ask me that. It seemed like the right way to go. SSL had been very good to me, and I always had trusted their products. I had no reason to believe their latest desk would be anything less than brilliant.

What do you like about it?

It sounds amazing. I've done three albums on it, and all of them sound great. I know you had some trouble getting around the software in the beginning, but they have sorted that out.

What don't you like about it?

It kicks off an amazing amount of heat. We had to reconfigure our air-con unit for the mix room once that thing got going.

I noticed that you have large windows in the mix room that let in a lot of sunlight. Was that an important part of the design?

Integral. There was no way I wanted to work in a shoebox again. Daylight and a view onto the street are perfect in the recording studio, especially with the urban vibe where we are. It's colorful out there. Plus, I learned from my home studio. It had a fantastic view over the garden and the bay. I wanted to peer out at something when I was working.

There are no large control room monitors in the mix room. Was that a decision you made, or have you and Ron just not gotten around to it?

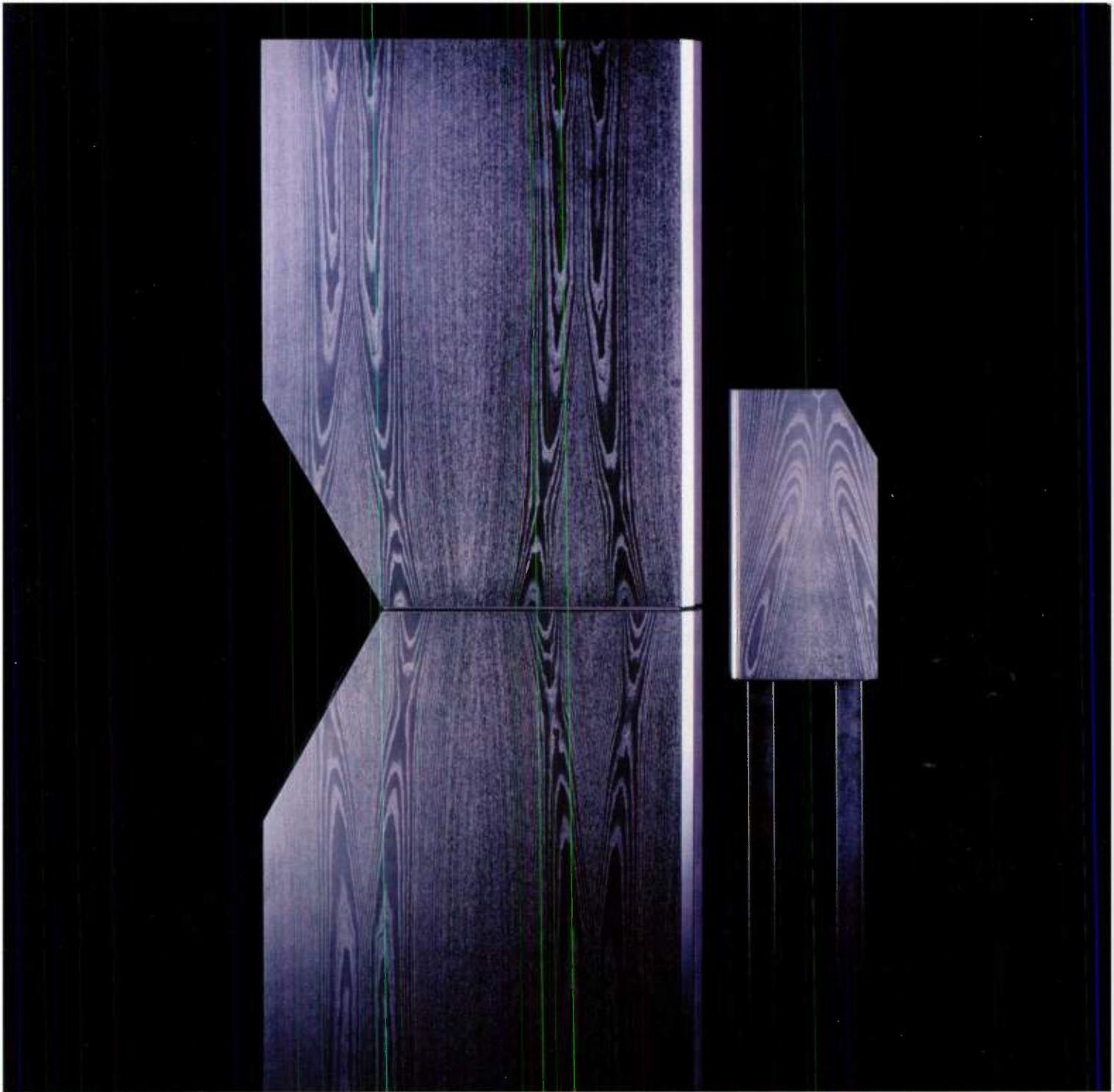
After watching you work for 20 years, and never listening to loudspeakers unless we were recording, I thought, "What the heck? If it's good enough for Bob..." We have portable large monitors that go in there if someone needs them, but nobody has asked. Our new mix room will have enormous speakers, just like Studio One.

Is either of the rooms set up for doing 5.1-channel surround mixing?

We mixed my MTV unplugged show there, and Metallica mixed their live 5.1 DVD there. Now both mix rooms are set up for it. Love it.

Ron has done an incredible job of creating a fairly neutral but pleasing acoustic environment in the mix room, while keeping the original internal aesthetic of the building. Was this something you were adamant about, and how difficult was it to accomplish?

The natural space is so cool, none of us wanted to dick around with it. It's a bit like a New York City loft space, so



100%

PMC

1 800 632 3217
www.bryston.ca

Powered by **BRYSTON**

CIRCLE #035 ON PRODUCT INFO CARD



we worked within the parameters of what we had. Acoustically, the rooms needed tweaking, and we set about doing that once all the gear and furniture was in.

I see you have an old UREI Filter Set. You don't see many of those nowadays. What's that all about?

Certain clients, Bob, are intent on "notch filters." There are some clients that are so intent on using them that we have two, just in case you want to double-filter the same frequency. You know what I'm on about? [This comes from an old joke when Bob was working with me in my home studio. He actually asked me if I had a "notch filter," which of course I didn't. I went out and bought two for the next session. I don't think we ever used them, but we still laugh about it today.]

STUDIO ONE, THE RECORDING ROOM

You've got a magnificent old Neve 8078 in the control room. Can you give me a brief history of it?

It originally came from Air Studios in London. There were three desks built for Air, two of which they sold for some weird reason. One still exists at Air, and

the other went to Montserrat and then later to A&M, and this is the third one and the largest, with 58 inputs. They were designed by Rupert Neve, Geoff Emerick and George Martin to the best of my knowledge. I first recorded on this exact desk in Atlantic Studios in

**I love coming back
to Vancouver
and spending time
in this wonderful space.
I wish I'd built
an apartment in it
for myself.**

New York when I was working with Joe Cocker on his album at the time. Later, I had heard that Atlantic went under and the desk had been sold to a company called QSound. They had intended to put together a studio, but at the last minute, they changed their

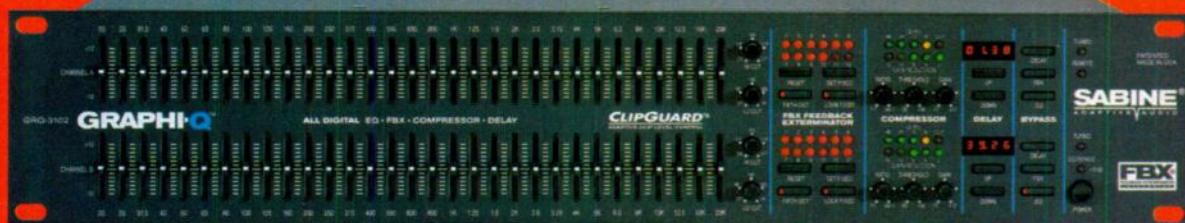
minds. So, QSound gave me a day to decide if I wanted it. So, I bought it, and it sat in my warehouse for ages while Ron cleaned it up and waited for the studio to be built. We've never regretted that purchase. Man, what a fantastic desk; it sounds unreal. Rupert Neve actually signed a plate for us lately, which is mounted on the right corner.

I saw some very slick and unusual modifications on the desk. You seem to have really let Ron go to town in his usual fanatical way. Can you tell me about the major mods?

Ron would be better at explaining the technical than I, but in musician speak: We tried to make the desk as compatible with SSL engineers as possible. To do this, we put an SSL compressor in the desk, just like ordinary SSLs, and we also have several "Sneve" modules that Ron designed placed at the far end. A "Sneve" is an SSL module dressed up and fitted to look like a Neve module. It's useful if you are an engineer and you want to use the SSL sound for something.

You've installed some pretty impressive looking and sounding control room monitors in this room. Where did they come from?

Digital EQ with Sliders plus FBX Feedback Exterminator, Compressor, & Delay, ALL IN ONE!



GRQ-3102: 2U, dual channel (two in / two out)

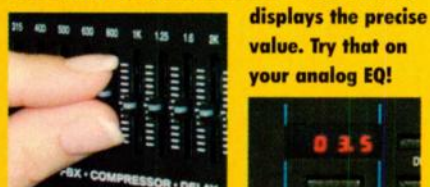
HANDS-ON DIGITAL EQ!



GRQ-3101: Single channel (one in/two out)

The Power of Hands-On Digital Just Got Better!

Now you can Tweak & Peek™ on your Graphi-Q!
Touch any front-panel control & the Graphi-Q



displays the precise value. Try that on your analog EQ!

This is the digital EQ you've been waiting for! Sabine's new **GRAPHI-Q™** Series gives you hands-on, analog-style control of the industry's most advanced digital processing, all at one third the price of products with half the features.

Our 24-bit A/D and D/A gives the cleanest audio possible, and the new 32-bit floating-point SHARC processor powers every Graphi-Q, allowing simultaneous use & independent control of the functions you need.

- Perfect for Mains or Monitors
- 31-band, 1/3-octave Digital Graphic EQ
- FBX Feedback Exterminator® with 12 Filters per channel. The original & the best automatic feedback controller!
- Digital Compressor/Limiter
- Digital Delay for time alignment

SABINE®
ADAPTIVE AUDIO

For complete GRAPHI-Q details:
www.SabinePro.com
Tel: (904) 418-2000
Fax: (904) 418-2001
Fax-Back Product Info: (904) 418-2002
PATENTED • MADE IN USA

*FBX and FBX Feedback Exterminator are registered trademarks of Sabine, Inc., and are the brand names of its line of automatic feedback controllers. Covered by U.S. Patent No. 5,245,665, Australian Patent No. 653,736, German Patent No. 69118486.0, U.K. Patent No. 0486679, and Canadian Patent No. 2,066,624-2. Other patents pending.

CIRCLE #036 ON PRODUCT INFO CARD

hot property

POST PRODUCTION

MUSIC RECORDING

FILM SOUNDTRACK

lower east side new york

When the New York Media Group made the decision to radically redesign a number of their rooms, Neil Karsh (VP Audio Engineering) had the daunting task of specifying the digital consoles for eight suites in three of their major facilities. Eventually he, along with his mixers, placed their confidence in Soundtracs. The first of the seven DPC-II digital console installations was at 'SuperDupe' followed by 'East Side' and finally the prestigious new 'Lower East Side'. Commenting on the decision, Neil had this to say. "When we first looked at the Soundtracs DPC-II we were really floored. In it we saw new technology that offered as much - maybe more - at a more competitive price than any other product out there". He added, "When you buy a big ticket item you are buying the people who make the product as much as the piece of equipment itself. We went with the new kids on the block in respect of high end digital consoles, a decision which could have gone either way."

"A year later, we are extremely pleased with the outcome."

SOUNDTRACS

Soundtracs PLC, Blenheim Road, Longmead Business Park, Epsom, Surrey KT19 9XN, UK

Tel: (+44) (0)208 388 5000, Fax: (+44) (0)208 388 5050

Soundtracs USA Inc, 200 Sea Lane, Farmingdale, New York 11735, USA

Tel: (+1) 516 249 1234, Fax: (+1) 516 249 4854

email: sales@soundtracs.com web: <http://www.soundtracs.com>

DPC-II

digital
production
console

- ▲ Sound Absorbers
- ▲ Sound Barriers
- ▲ Sound Diffusors

BASIC ACOUSTICS

from



ALPHASORB FABRIC-WRAPPED WALL PANELS

SONEX FOAM

ALPHAPYRAMID FOAM

SKYLINE DIFFUSOR

AUDIOSEAL SOUND BARRIER

FREE Catalog & Sample
(800) 782-5742

www.acousticalsolutions.com

CIRCLE #038 ON PRODUCT INFO CARD

**Psst... if Sound is
your job, you need
to get Connected!**

Instant Shopping for
Pro Audio Equipment and
Unlimited Access to
Technical Information is
now Online...

www.connectsound.com

"Where Technology and Sound Connect"

CONNECTSOUND

CIRCLE #039 ON PRODUCT INFO CARD

Ron designed them with my old touring sound company, Jason Sound. They are, without a doubt, the best large speakers I have ever heard in a control room. They crank!

I mixed your last album, On a Day Like Today, the basic tracks of which were recorded in there by Randy Staub, and produced by you and Bob Rock. The tracks sounded incredible! Can you share any insight into the design of the recording room itself?

Thanks. I think Randy and Bob did a great job, too. As far as the room is concerned, it was delicate construction taking out the third floor of the building to allow us maximum ceiling height (25 feet). Other than that, we put in various angles on the isolation booths and retractable curtains and blinds, but left the room to be the room. It sounded fab.

You have some pretty serious windows in there as well. Is that ever a problem if you get your Marilyn Manson or Trent Reznor types in there who may, presumably, hate sunlight?

They haven't come by lately, but we have retractable blinds. Our place can look like a tomb. If that's what you're looking for...

THE PRO TOOLS ROOM

Are you noticing an increasing number of artists and producers using Pro Tools for record projects these days?

Without a doubt. Compared to the old days when everyone edited on multi-tracks with razor blades, things have come leaps and bounds. It's probably the best tool that has been invented to help create records. Aside from being able to edit and record, you can assemble your record, fix tunings, time things...endless. From my experience, it is a system that is totally dependent on the operator. I've seen people do great things with it, and I've seen some screwups!

Do you like to use it for your own projects?

Definitely. We have a whole setup of Macintosh computers to work on. Personally, I have created whole songs just by looping a groove or re-editing a section and turning it into a chorus when it was a b-section! Used as a tool, it's become invaluable.

The last time I was at The Warehouse, you only had one Apogee AD8000 8-channel analog-to-digital converter in the place, in the Pro Tools room. Have you remedied this appalling situation since then?

Yes, we went back to analog ¼-inch

—CONTINUED ON PAGE 183

Here are the notes we talked about...
Thanks for lunch!



we have a new logo too!

Summit Audio Inc.

<http://www.summitaudio.com>

Email: sound@summitaudio.com

P.O. Box 223306, Carmel, CA 93922 U.S.A.
831-728-1302 FAX: 831-728-1073



element 8

"Fully automatable analog
signal processing systems"

Get
the best
designers!

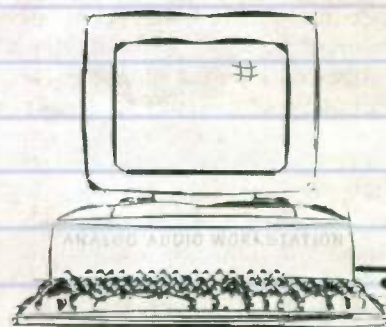


features needed:

TWO ANALOG
SIGNAL PATHS

DIGITAL
CONTROL

- ✓ designed by Mr. Rupert Neve
- ✓ class "A"
- ✓ solid state
- ✓ .0009 THD
- ✓ FLAT 1-look
- 200k
- ✓ MIDI control of everything
- ✓ on board user presets
- ✓ external controllers:
 - ✓ -Digidesign Pro Control (with PT)
 - ✓ -Yamaha 02R
 - ✓ -Mackie H.U.I.



www.summitaudio.com



Summit Audio

© 1995 Summit Audio, Inc. All rights reserved. Summit Audio is a registered trademark of Summit Audio, Inc. The Element 8 logo is a trademark of Summit Audio, Inc. All other trademarks are the property of their respective owners. Summit Audio is a registered trademark of Summit Audio, Inc. All other trademarks are the property of their respective owners.

MPE-200
Mic Pre/EQ

MPE-200S
Mic Pre/EQ Slave

EQ-200
Parametric EQ

EQ-200S
Parametric EQ Slave



CIRCLE #040 ON PRODUCT INFO CARD

THE GLASS ELEVATOR



Walking into Dave Kershaw's project studio, The Glass Elevator, is a bit like walking onto an Austin Powers set: colorful surroundings and an assortment of kitschy, retro collectibles including lava lamps, groovy telephones and vintage furniture. Go a little further into his candlelit, incense-infused domain and you discover some serious gear that would have most project studio owners licking their chops.

"I got in just slightly before old gear and microphones were becoming popular," explains Kershaw over a cup of ginger tea. "I got some of the stuff at a really good deal and then, boom, in the early '90s everyone caught on, and the prices went way up. I spent six years touring and recording with Sarah McLachlan as a keyboard player and acquired a lot of vintage tube gear and weird boxes wherever I went." Included in his collection are racks of classic gear from Avalon, Tube-Tech and Amek, and a pair of treasured UREI 1176 black-face modules. Look around the Elevator (actually the basement in Kershaw's Vancouver house; e-mail: glasselevator@telus.com) and you'll also find a room stuffed with more than a dozen keyboards, several old amplifiers and numerous guitars and basses.

A newly purchased Allen & Heath GS3000 analog console

dominates the control-room space. Kershaw recorded several albums on the Mackie 32:8, then felt it was time for a change. "I'm a total Mackie fan," he avows, "and I was quite interested in their digital board. But then I stumbled on the Allen & Heath board. I know it's a catchphrase, but I really understand it now, that wonderful British EQ—very musical. I noticed right away the phase coherency of the console, that stereo feel. I recently decided to try recording a project with just the console's mic preamps and EQ, and I was blown away. It sounded great, and there was plenty of headroom."

Kershaw records onto ADAT XTs and then mixes to an Akai DR4 hard disk system, which allows him to achieve what he refers to as "poor-man's automation." "I can break a song down into several sections and mix from start to finish," he explains. "I can get the intro done and then stop, rewind, have a little preroll, set up my faders for when the verse starts and then punch in on the hard disk, seamlessly. So I don't have to freak out on the analog console to have all the moves down."

When he realized that road life was no longer for him, Kershaw decided to devote more time to recording and producing bands

and doing session work. In between music gigs, he pays the bills by working as a key grip on TV commercials, which gives him the freedom to work when he wants to. He has produced several local Vancouver acts, including Veal, Wild Strawberries, John Gogo and a solo project for Chin Injeti from Bass Is Base.

A self-confirmed knob twister and sonic explorer, Kershaw's passion for sound traces back to his childhood. "When my father would buy a new piece of hi-fi gear," he recalls, "I'd take it apart and try to modify it—twist knobs and do things like turn the bass all the way up. When I work with other engineers, they always laugh at me because I'll just grab a knob and yank it all the way over, like a Spinal Tap sort of thing."

Kershaw admits that wearing all of the hats in a project studio environment can be difficult. "As I get older," he philosophizes, "I realize how tough it is being a producer, engineer, tape-op, the whole shebang. It is beautiful because you have this intimate relationship with the artist, but by the end of the day you're really, really exhausted."

As with many project studios, even the house itself is part of the Glass Elevator experience. In the summer months, people can get some fresh air in the back yard, and in the winter they can enjoy a spot of tea upstairs. The entire house is wired with mic outlets, so vocals (and occasionally upright bass and percussion) can be recorded upstairs by candlelight or with a quiet Presto log burning in the fireplace.

"The thing about a project studio is it's nice to have musicians not feel under the gun," concludes Kershaw. "After a while, they realize that they're not worrying about the clock and sounds are getting to tape quite well. There's nothing more rewarding for me than when an artist realizes that and begins to let go." ■

Tim Moshansky is a freelance writer based in Vancouver, B.C.

BY TIM MOSHANSKY

**TASCAM.
DAT**



DA-40
XLR Balanced Studio DAT Master
Price: \$1,399* • FaxBack: #2330



DA-45HR
The 24-bit High Resolution Master
Price: \$2,165* • FaxBack: #2340



DA-60MKII
4-head Time Code Master
Price: \$2,999* • FaxBack: #2360



DA-20MKII
Project Studio DAT Master
Price: \$975* • FaxBack: #2320



DA-PI
Portable DAT Recorder
Price: \$2,060* • FaxBack: #2150



Let us help you make an informed choice. Call TASCAM FaxBack at 800-827-2268 for more information on the First Family of DAT.

TASCAM America, Inc. 7713 Telegraph Rd.
Phonetic, CA 94641 (212) 79-8883
TASCAM Canada Ltd. 1371 Midland Street
Markham, Ontario L3R 9V9 Canada (905) 949-8888
TASCAM Mexico S.A. de C.V. Avenida Central 418
Guatemala City, Guatemala (502) 244-1942

* Manufacturer's Suggested Retail Price (MSRP)

CIRCLE #041 ON PRODUCT INFO CARD



The **NEW** Old Faithful.

The TASCAM DA-40 DAT Master Recorder

More audio engineers worldwide depend on TASCAM DATs for faithful mastering, and faithful operation in the most extreme production situations. True to form, the exciting new DA-40 DAT Master Recorder fills some legendary shoes. Following in the



footsteps of the

famed DA-30

Series, the DA-40

gives you TASCAM's rock solid transport and unwavering fidelity. Plus, new additions including TRIM CONTROL on the analog

XLR outputs make the DA-40 more functional and easier to use than ever.

Features like variable AUTO ID and AUTO END ID let you focus on the audio instead of the machine. Speed up production with two MEMORY LOCATE points, variable record MUTE times and programmable REPEAT times. For superb mastering and faithful operation, the DA-40 is the finest DAT recorder you can buy. See your new-old faithful at your TASCAM dealer today or visit www.tascam.com.

TASCAM®

Take advantage of our experience.

WRN

DESIGNING THE SOUNDTRACK FOR FRANK DARABONT'S DEATH-ROW DRAMA



BY
TOM
KENNY

W A L K I N G

“The wide corridor up the center of E Block was floored with linoleum the color of tired old limes, and so what was called the Last Mile at other prisons was called the Green Mile at Cold Mountain. It ran, I guess, sixty long paces from south to north, bottom to top. At the bottom was the restraint room. At the top end was a T-junction. A left turn meant life...A right turn, though, that was different...This is where you ended up when you walked the Green Mile.”

—Stephen King, *The Green Mile*

Old Sparky, King calls it. The electric chair. The last stop on the Mile. Nothing can match it as a symbol of the power that men have over men. A body is strapped in and clamped down, from the ankles up, and a black hood is placed over the head. The switch is thrown, then a second switch, and the surge of electricity jolts the body vi-

Mark Mangini leads the Weddington Productions sound crew down a gritty prison path, incorporating location-based Foley and shocking subtleties, in *The Green Mile*, a Castle Rock film based on a Stephen King serial novel.



GREEN MILE



The core of the sound crew surrounded director Frank Darabont (center, with beard) on Warner Hollywood Stage A.

PRODUCTION FILM PHOTOS: RALPH NELSON/CASTLE ROCK ENTERTAINMENT. FACILITY PHOTOS: ENGLE MEREDITH.

WALKING THE GREEN MILE

olently and without mercy. It lasts about 30 seconds, then the body is carted away. Few people have actually seen it at work.

In the summer of 1935, Louisiana prison guard Paul Edgecomb (Tom Hanks) has to lead John Coffey, a large black man convicted in the murder of two 10-year-old white girls, down the Mile to the electric chair. The events and revelations leading up to the execution change his life forever and form the basis of *The Green Mile*, the holiday season's most talked-about film.

It's somewhat familiar territory for director Frank Darabont and much of the crew, many of whom worked with him on *The Shawshank Redemption* in 1994. Prison forms the backdrop; hope and redemption are the salvation. But where *Shawshank* occasionally turned dreamy and triumphant, *The Green Mile* is anchored in stark reality. The horror is intentional, and Edgecomb's epiphany, revealed in layered flashbacks, is complex without being sentimental.

For the audio crew, the challenge

Right: The sets at Warner Hollywood pulled double-duty, as the *Green Mile* and as the hallways of the care facility for the present-day scenes. Here, Foley artist John Roesch is set up with a video playback system on the set, with the real concrete floors used in the film, while being recorded via fiber optic connections, back in Foley Stage F, below. The intent was to capture perspective and realism that you wouldn't normally get in Foley.

was to capture that realism—in the loneliness of death row, the violence of an execution and the magic of miracles.

BACKGROUNDS AND PRISON SOUNDS

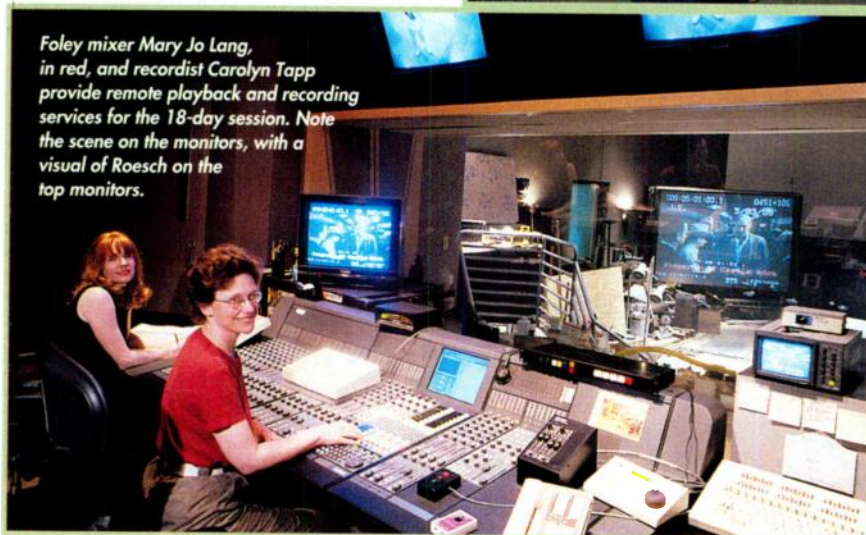
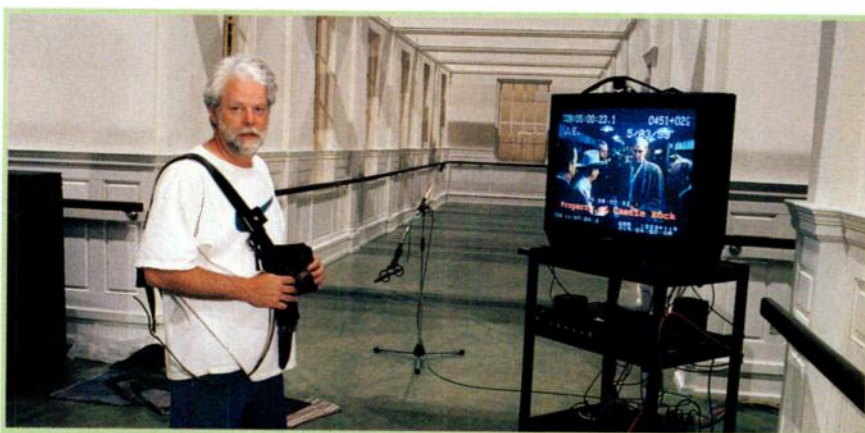
"This film is three hours, and two hours and 20 minutes of it takes place on the Green Mile. So that's a background," says supervising sound editor Mark Mangini, co-owner of Weddington Productions in North Hollywood. "And yet the admonition was: 'The death row cell block is isolated from the rest of the prison, and I don't want to hear anything else. I don't want to hear other prisoners. I don't want to hear offstage trains.' It's a brick building with a very high tin roof, and it's intentionally quiet there. As a sound editor, you're thinking, 'Well, how do we make a BG that's not boring for two hours.'"

Mangini sent Eric Potter and Howell Gibbons to Fort MacArthur in Long Beach (later, effects elements would also come from Stateville Prison, Folsom Prison and the Lincoln Heights Jail) for a few nights of field recording in an underground bunker-like mili-

tary brig. They shot 6-track "airs" for presence, which became the bed for the Green Mile—daytime, nighttime, early afternoon, etc. On top of that, they shot separate 6-track tapes of what Mangini calls "ear candy."

"Eric and Howell amassed handfuls of little bits of debris," he explains. "Little bits of metal and wood and dust and dirt and grit. I had them walk around in their socks, in that 6-track sound field, and just drop things, because that's what you hear in real life if you sit and be quiet—you hear things settling and dropping. The whole idea of the prison was that it was supposed to be lonely and quiet. I remember an artist telling me once that the best way to make white whiter is to add blue to it. So I thought silence isn't good enough for loneliness. Reverberance is to me what sells loneliness. That's why I wanted to record that ear candy."

"Mark delivered the backgrounds on about 44 tracks," adds Elliot Tyson, effects re-recording mixer. "We broke them out into two background pre-dubs—A and B. 'A' generally was the airy BG, and 'B' had what Mark termed 'pepper' [or ear candy], which



was sprinkled with some vocals or metal twisting in the hot noonday sun, as if the room was warming up and cooling down. We would then weave those specific A's and B's so that you felt air kind of coming and going, with the pepper louder and softer. It always felt like something was moving in the room."

Other conventional prison sounds were approached with the same seemingly dual nature, where they needed to be consistent yet imply variety. There are four key doors on the Mile, so Mangini assembled elements from real jail cell doors, film racks and car jacks, among other things, and Howell

Gibbons built "door kits." Those were then loaded in the scene-spotting program Weddington developed in conjunction with mSoft and used as the root throughout the 20 reels. It was the same for keys, which were handled in Foley.

"The keys were a big deal because that's a signature sound in that it's a sound of authority," Mangini says. "In



Clockwise from above: The mix team of Bob Litt, Michael Herbeck and Elliot Tyson with a few props from the set popped on screen. Recordists Marsha Sorce and Kevin Webb, who handled the Fairlight systems and the loading to/from Pro Tools. Director Frank Darabont explains the execution rehearsal scene to Tom Hanks, while Harry Dean Stanton looks on and Barry Pepper peeks over the shoulder. Michael Clarke Duncan points out a constellation to Tom Hanks. Supervising sound editor Mark Mangini, who made the decision to go with location-based Foley, takes a break during the final mix.

normal movies, you play keys for cops and military and it can be too much. We have an ensemble movie with six guys in every scene. Do I do six individual passes of keys? 'My God, they're killing me!' We never actually did more than two tracks of keys, even for six guys, but they were a springboard for me to develop this new Foley process. We got the keys they actually used, these huge prison keys with a great, unique sound that a

Foley prop wouldn't have had."

FOLEY ON THE SET

"My biggest concern on this film was the Foley sounding fake," Mangini continues. "To me, 99 percent of all Foley I hear, in my own movies and others, sounds crappy. It's an artifice. It's a function of the process that we've developed for ourselves, which is: You point a microphone right at somebody's shoes, which is unnatural, on a surface

that isn't the real surface, in an acoustic space that has no natural environment. It's bothered me my entire career. On this movie, I knew we were going to constantly be going in and out of production to Foley and it was never going to match. So I thought this would be an opportunity to do something different. I wanted to reproduce production sound in the way that production sound really gets recorded. I wanted movement across the recording field. I wanted to feel real acoustics, not electronic reverberators. I wanted real props. I wanted the real shoes. I wanted the real surface. I wanted the whole thing."

First, Mangini and field recordist Eric Potter (who also recorded most of

WALKING THE GREEN MILE

the sounds that went into the electro-cutions) went to the Lincoln Heights Jail in downtown L.A. and shot some footsteps wild to DAT, from various perspectives, just as a test. Mangini brought the material back and hand-cut it against picture—the concept worked, but the location was right next to an Amtrak line.

So, he decided to scout for locations and found a school in Palmdale that had a long hallway with the right linoleum floor, and he knew that he could always shoot at Fort MacArthur. Mangini and Foley supervisor Aaron Glascock built a lean rig, with big-screen TVs, a VCR and a portable Pro Tools system, planning to mike the footsteps M-S. Everything was set, then Warner Hollywood called, concerned that their Foley stage was no longer being used.

ONE LAST FINAL MIX

Mangini and his Weddington crew began on the film at the end of March 1999. All editing was done in 16-bit Pro Tools, with roughly 250 Giga-bytes delivered for playback at the mix. Kudos, Mangini says, should go to Julia Evershade, who cut all 20 reels of dialog and ADR by herself.

The premix and final mix took place over 12 weeks from May to July at Warner Hollywood Stage A, with the team of Bob Litt (dialog), Elliot Tyson (effects) and Michael Herbeck (music) sitting at a Harrison PP-1 analog console, serial number 002. Tyson brought in two 22-input PP-1 sidecars for effects. They returned on a weekend in mid-October to mix reels 1 and 20, the bookends. Dialog and effects were recorded to Fairlight MFX3plus from DaD systems, with music being recorded to mag.

Tyson, who now lead-mixes on a Neve DFC at Disney's Stage A (Disney graciously let him return for a final go-around on this film), says it was tough to revisit his old room. "It was like going back to 1935," he laughs. "No automated panpots, no automated EQ, no automated joy-sticks, no automated routing. If I had been away from it for a few years, it would have been more difficult. But it comes back like riding a bike."

The Green Mile proved to be something of a swan song for the mix crew. Litt, considered one of the finest dialog mixers in the business, is rumored to be retiring. He and Tyson had worked together for 19 years before Tyson signed a contract with Disney last year, and Herbeck's been with them for the last five. They mixed *The Shawshank Redemption* for Darabont in 1994. ■

CD DUPLICATION MADE EASY

**Network Enabled
cdDIRECTOR Publishing Systems**
• 3703NT • 3706NT

Automated CD-R Duplication Systems
• CD-3702 • CD-3704
• CD-3706P

CD-R Duplication Tower Systems
• CD-5400L • CD-5900
• CD-5916

Automated CD-R Print Stations
• AP-1000 • AP-1300C

MediaFORM™

WORLD'S MOST ADVANCED CD DUPLICATORS

400 Eagleview Blvd., Suite 104 • Exton, PA 19341

Phone: 610-458-9200 • Fax: 610-458-9554

Toll Free in the USA 800-220-1215

email: info@mediaform.com • web: <http://www.mediaform.com>

CIRCLE #042 ON PRODUCT INFO CARD

Your craft brings great movies to life.

Miramax Films proudly salutes
this extraordinary group of sound artists
and congratulates them on their
outstanding achievements in 1999.

MIRAMAX

Admission Granted Miramax Films Corp.
All Rights Reserved.

CIRCLE #043 ON PRODUCT INFO CARD



THE CIDER HOUSE RULES

PETUR HLIDDAL
STEVE PEDERSON
TOM PERRY
BOB CHEFALAS
SOUND

MAURICE SCHELL, M.P.S.E.
SOUND EFFECTS EDITING

MANSFIELD PARK

PETER GLOSSOP
RAY MERRIN
GRAHAM DANIEL
SOUND

GLENN FREEMANTLE
SOUND EFFECTS EDITING

music of the heart

MICHAEL BAROSKY, C.A.S.
TERRY PORTER
MEL METCALFE
DEAN ZUPANCIC
SOUND

TODD TOON, M.P.S.E.
SOUND EFFECTS EDITING

WALKING THE GREEN MILE

EMOTIONAL SCORE, MINIMALIST BENT

The last time composer Thomas Newman worked with director Frank Darabont he ended up with two Oscar nominations, for *The Shawshank Redemption* and *Little Women* in 1994. During a three-week hiatus from writing for *The Green Mile*, he wrote and recorded a gem for *American Beauty*. It's quite conceivable that he'll find himself competing against himself again this year.

"Tom has developed a whole type of music that is extremely emotional and extremely minimal," says his music editor, Bill Bernstein. "Normally, you think that if you need a lot of emotion, you have to saw away at the strings—they have to swell and sweep. What Tom does is go down to a very icy, cold, moving little melody and it's just heartbreaking. I don't know how he does it, but it's so effective. I think that's what makes him popular in temp music—he's able to get such emotion with such minimal touches. It's like Japanese painting."

For the movie's most brutal execution, Newman wrote a full-on orchestral piece, loud and abrasive, Bernstein says. In deference to effects, however, and in a reversal of what usually happens on dub stages, it is there to poke through the lulls in the effects storm. But by the Coffey execution at the end, when emotion is at its peak, music plays the moment.

"By Coffey's execution, lyrical is the word," Bernstein says. "The music

"Robert Winder said, 'You know, Mark, the sets are still constructed here on Stage 2, and they're on hiatus for four months waiting for Tom Hanks. Maybe you could Foley on the sets,'" Mangini recalls. "So I thought, 'Well, this sounds hare-brained, but I'll go check it out.'"

Mangini and Foley artist John Roesch brought a Hi-8 playback system and a non-sync DAT to the sets and did a test, synched to a scene where the guard Percy is walking down the Green Mile. He brought the tracks back and cut them in. Then, that afternoon, the same team, with the same scene, went into



Music editor Bill Bernstein's Pro Tools setup, offstage at Warner Hollywood.

takes the forefront. You hear very little of the electric execution sound that you heard with Del. By the time the lights are exploding and everything is happening, it's slow motion. The sparks are floating down over Tom Hanks' stricken face, and the music is playing a beautiful haunting melody. It's piano backed by strings—still full strings but they're not playing a lot of notes. Then the strings take the melody. It's very sweet, what we called our 'Condemned Man Theme.'

"It becomes the theme for the movie," he continues. "It starts with Bitterbuck's execution. You hear it again as Del is marched to the chair. Then at the end of the movie, we realize we're all condemned men—'We all owe a death,' as the character says. That scene, the John Coffey execution, is where the theme finally pays off. I think he did a marvelous job with it."

Newman typically begins a project at home, prerecording some tracks from his sequencer or some improv sessions. On *The Green Mile*, he

brought four to six musicians into Signet Soundelux for overdubs—for ambiances, sustains or woodwind noodles—recorded to 24-track. A slave was made for the orchestral sessions, which took place at the Todd-AO Scoring Stage. The orchestra was also recorded on 24-track and then mixed down on the Neve 8068 (LCR-LS-RS, with a boom channel) to Genex 8000 by Dennis Sands back at Signet. The non-orchestra pieces were often split into two LCR pairs on another Genex MO. By the time Bernstein loaded all the sessions into his Pro Tools system and prepared them for the stage, he had as many as 14 tracks per cue.

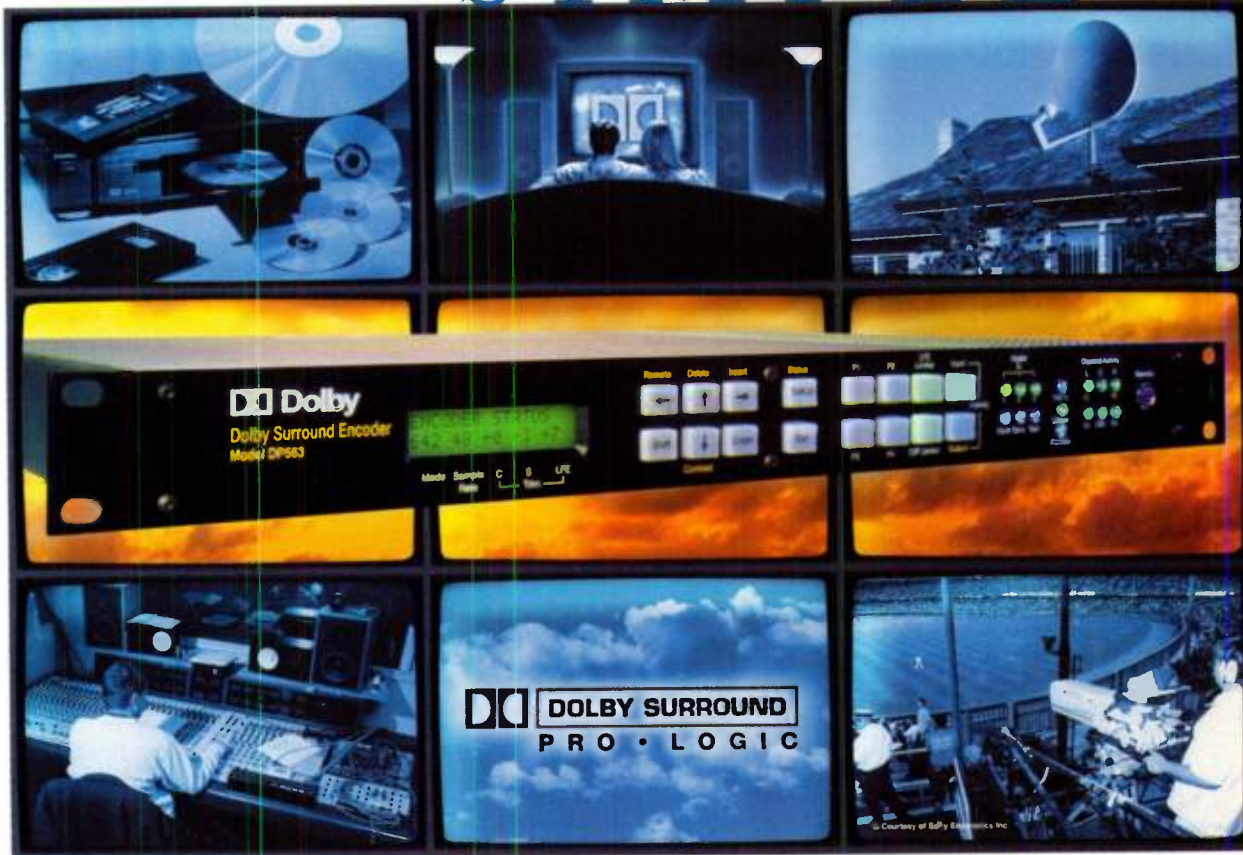
Bernstein had one 24-track, 24-bit Pro Tools online for the stage (monitor and keyboard only, with Cybex extender; the hard drive was in the machine room), which handled the quick fixes, and another in his cutting room just off the stage, for changes, alternates, emergencies or loading.

Perhaps the biggest challenge in the

—CONTINUED ON PAGE 82

NORMALLY, YOU THINK THAT IF YOU NEED A LOT OF EMOTION, YOU HAVE TO SAW AWAY AT THE STRINGS—THEY HAVE TO SWELL AND SWEEP. WHAT TOM DOES IS GO DOWN TO A VERY ICY, COLD, MOVING LITTLE MELODY AND IT'S JUST HEARTBREAKING. —BILL BERNSTEIN

SURROUND MADE SIMPLE



Producing Dolby Surround in digital production facilities just got easier. Introducing the DP563 Dolby Surround Encoder, a digital implementation of the industry standard SEU4 Dolby Surround Encoder. The DP563 is ideal for encoding Dolby Surround audio in the digital domain for broadcasts, VHS tapes, DVDs, PC/console games and CD-ROMs to reach over 45 million Dolby Surround-equipped consumers worldwide. Paired with the Dolby DP562 multichannel reference decoder, the DP563 completes the digital solution for Dolby Surround production and monitoring. Want to know more? Visit our website or call us for the name of your nearest dealer.

www.dolby.com

Dolby

BREAKING SOUND BARRIERS

1999 EMMY AWARD-WINNING DOLBY SURROUND PROGRAMS
 SOUND MIXING FOR A COMEDY SERIES OR A SPECIAL: "Ally McBeal: Love's Illusions," Fox.
 SOUND MIXING FOR A VARIETY OR MUSIC SERIES OR A SPECIAL: "41st Annual Grammy Awards," CBS.
 SOUND MIXING FOR A DRAMA MINISERIES OR A MOVIE: "The Rat Pack," HBO.

Dolby Laboratories Inc. • 100 Potrero Avenue, San Francisco, CA 94103-4813 • Telephone 415-558-0200 • Fax 415-863-1373
 Wootton Bassett, Wiltshire, SN4 5QJ England • Telephone (44) 1793-842100 • Fax (44) 1793-842101 • www.dolby.com

Dolby and the double-D symbol are trademarks of Dolby Laboratories © 1999 Dolby Laboratories Inc. 89912794

CIRCLE #044 ON PRODUCT INFO CARD

WALKING THE GREEN MILE

the Foley stage and constructed a 12-foot linoleum walkway so they could get at least some perspective. Mics were hung close and far to pick up room. That, too, was cut against picture.

"The difference was night and day," Mangini says. "We brought Frank

[Darabont] in and said, 'What do you think? We're going to try something new and actually do Foley on the set. It could blow up in our faces, but we wanted you to hear what it sounds like.' We played the tracks, and everybody, even John, said, 'That stuff on the set is the real thing.'"

At this point, Mangini still planned to bring in his portable Pro Tools rig and record to hard disk, right on the set. But again Winder came up with a plan to link the set with the Foley booth via fiber optics. Warner chief engineer Mike Novich handled the wiring and put in two 35-inch TV monitors on rollers, at

either end of the Green Mile. They set up two microphones for recording and a two-way playback rig with a video tap. They even set up an infrared headphone system for when the artists needed to hear sounds in sync to what they were walking.

"While in the recording booth, we could watch John and Hilda [Hodges], and we could see the whole set," Mangini explains. "Aaron would be telling them, 'Move the microphone a little bit to the right, put the mic over there.' We had four different sets on the soundstage—we even did the Foley for the shack out in the woods, and the electrocution room. We had all the comforts of all the tools they have there, with a nice quiet monitoring environment. And yet we were getting production sound. It came out so well. If they had to do a 30-second walk-away down a 100-foot-long space, that's what they did. And it was like it was production."

All of the Foley (including exteriors, which ended up being done on Stage F) was recorded to 2-inch 24-track by Mary Jo Lang and Carolyn Tapp. They also did keys, the guards' web belts, clothing, the mouse's footsteps and spool-rolling (yes, a real mouse is a main character), and everything else they could during an 18-day session. There was, Mangini admits, a lot of skepticism at the beginning, mainly to do with the noise floor and punching in to live Foley. "It's funny how hypersen-

do they really know pro audio?

A music store is a great place to buy your musical instruments. But sophisticated recording equipment like workstations, tape machines and high end signal processing are not the forte of music stores. Never has been, never will be.

At EAR, professional audio for recording, production and sound reinforcement has been our speciality since 1977. We offer expert advice from veteran professionals in the industry and sell professional audio equipment at nationally competitive pricing.

This business means more to us than just a quick sale. We're here for the long haul.

**PROFESSIONAL AUDIO
IS WHAT WE DO!**

Digital Multitrack
Audio-Video/Workstations
Recording Consoles/Mixers
Signal Processing
Studio Monitors/Microphones

EAR
PROFESSIONAL AUDIO/VIDEO

2641 E. McDowell Rd.
Phoenix, AZ 85008
602.267.0600
Fax 602.275.3277
<http://www.EAR.NET>
info@EAR.NET

—FROM PAGE 80, BILL BERNSTEIN

score was the same one Mangini faced with backgrounds: how to remain fresh, yet consistent, over such a long time. There are more than 90 minutes of score in the film, the longest Newman has done.

"Early in the movie, there's a lot more fun, more humor," Bernstein says. "Then it gets very serious and dark, where the tone is more somber, moving and mystical. I think it was important in the music to view the movie in chapters. You'd introduce a new character, like Wild Bill, and use a lot of twangy, strummy, idiomatic Southern music. Then for the John Coffey miracles, it was more sustains and sort of icy piano drops. The movie had enough variation in tone to allow some different chapter music." ■



SONY

- Unparalleled sound quality (patented converter technology)
- Intuitive and powerful user interface
- Selectable mastering grade EQ (5-band) and Dynamics on each channel
 - EQ: Original, Constant Q, Constant Power, Reciprocal Q
 - Dynamics: Original, Custom, Classic
- GML EQ and Dynamics plug-in option
- Real-time computation gives controls extreme precision and an analog feel
- Multi-stem record and monitoring capability with automated joystick panning

**"The future is digital,
and the Oxford is our
first digital choice."**

— Ed Germano, The Hit Factory

Why did a world renowned studio like The Hit Factory choose the Sony Oxford as their digital mixing console in both their New York and Miami studios? According to Ed Germano, "What impresses our clients the most is the incredible sound quality. The user interface is powerful and really easy to use at the same time. Once our clients work with it they don't want to go back. And they love the fact that they can recall mixes instantly. The bottom line is that the Oxford is our digital choice in New York and now our digital choice in Miami too."

Let us help make your digital choice an easy one. Call 1-800-635-7669 ext. HF or visit our website at www.sony.com/proaudio

©1999 Sony Electronics Inc.
Reproduction in whole or part
without written permission is
prohibited. All rights reserved.
Sony is a trademark of Sony.
Features and specifications
subject to change.



OXFORD

AKAI THE NEW SOUND OF FILM

"The Akai DD's give us the ability to engineer across a wide variety of formats. It is the only product that consistently performs - regardless of format or sample rate. The sound quality is tremendous and the editor is a fabulous tool. The Akai DD8 Plus and DD16PB Plus are the machines that satisfy all of our clients needs."

Chris Jenkins/President/Todd-AO Hollywood, CA



DD8 plus
8-Track Random Access Dubber

DD16PB plus
16-Track Random Access Player

- Superb Sound Quality at 16 & 24 Bit
- Multi-File Format Compatible
- Powerful and Flexible Editing Features

AKAI DIGITAL
California Office: 7095 Hollywood Blvd.
PMB#652, Los Angeles, CA 90028
ph: 818-762-3094 fx: 818-762-2348

AKAI DIGITAL
www.akai.com akai pro postpro

"The Akai DD8 Plus and DD16PB Plus are very reliable, versatile and easy to operate. They offer a great editing platform and a wide range of available interfaces."
Bill Ritter: Supervising Engineer/
Todd-AO - Hollywood, CA

CIRCLE #047 ON PRODUCT INFO CARD

WALKING THE GREEN MILE

sitive we all get to extraneous sounds, while in the artificial reality of a Foley session," Mangini says. "Like, it would be in the middle of a cue and you'd hear a little wood creak from somewhere off in the soundstage, and someone would go, 'We gotta go back and punch that out.' I would say, 'No! Leave it in! It sounds just like the Green Mile!'"

"It's no longer Foley, it's Mangini," jokes effects re-recording mixer Elliot Tyson. "We named it after him. If the legend is true that it was named after Jack Foley, why can't we name this after Mangini? On the stage, we would say, 'We gotta raise the Mangini here. Can we pull up the Mangini? Can we retard the Mangini?' When I first got the tracks, I turned around and said, 'Wow, this is amazing. Why can't all films be done like this?' It just laid in so well it was frightening. I predubbed it against [dialog re-recording mixer] Bob Litt's dialog predub, and you could take out the production and it would sound real."

Additional group ADR for the executions (in 1935, witnesses were in the same room—there was no glass to separate them) was also recorded on the set. And Mangini figured that as long as he had access, he would make use of it, so he "worldized" the six source music cues (played them in a real-world environment) emanating from the radio on the guard's desk at one end of the Mile.

"One thing I hate almost as much as Foley is board futzing music recordings to make them sound crappy," Mangini says. "We got four old-time radios from a local prop rental company. Ezra Dweck put the cleaned up CD recordings on channel 1 of a DA-88 and fed that output to an AM transmitter that then broadcast the songs to the four radios, one at a time. Ezra miked the radio's speakers and sent that signal back to the DA-88 on channels 2-7. The recording was done on the Green Mile set with a 5-channel microphone setup—mono near-field, stereo mid-field and stereo far-field. We got natural acoustics, with a broadcast being picked up by an actual tube radio, and they sounded awesome. Some of them we'd tune off, just a little bit, to get a bit of that side-

NEW 1999 Model from MARANTZ...the CDRC630 -
now at The DAT Store only **\$699!!!**

PRO AUDIO CD-RECORDER ReWritable & Write Once



The DAT Store, celebrating its 7th anniversary selling Marantz CD-Recorders, is proud to introduce the bargain of the decade. It uses the inexpensive pro disks and you get all the pro features you would expect: balanced XLR ins, RCA outs, optical and co-axial ins/outs, no SCMS, and a sample rate converter w/44.1kHz bypass.

Free shipping anywhere in the world - limited time offer!

The DAT Store will beat any deal. Free loaners.



Pro Audio & Recording Equipment • Digital Video • Digital Multitrack Recorders • Cassette Decks • CD Recorders • Digital Mixing Consoles
DAT Recorders • Hard Disk Recorders • Microphones • MD Recorders

2624 Wilshire Blvd, Santa Monica, CA 90403

310-828-6487 Fax: 310-828-8757

Open: Mon-Fri 11-5 • All Major Credit Cards

CIRCLE #048 ON PRODUCT INFO CARD

THIS
BUTTHOLE'S
HOT
FOR
ACID
PRO

Gibby
Haynes
Butthole.
Surfers.
ACID.
PRO
Music.
Creation.
Software.
Serious.
Tool.
Intuitive.
Fast.
Paste.
Unlimited.
Loops.
Real.
Time.
Auto.
Pitch.
Shift.
Hot.
Catch.
Fire.

4 dealer near U.

800-57-SONIC.

www.sonicfoundry.com.

ACID.
EVERYTHING ELSE
BLOWS



CIRCLE #049 ON PRODUCT INFO CARD

WALKING THE GREEN MILE

band modulation. It's a rig Howell developed for *October Sky*."

A similar setup was used to process the soundtrack of an old film for a scene near the end when John Coffey wanted to see a movie. It was his last request before walking the Mile. To ap-

proximate the sound of an old movie optical soundtrack playing in a large auditorium, the original film's magnetic soundtrack was played back using crackling 60-year-old movie horns in an old church.

THE EXECUTIONS

There are three executions in the film. None of them are easy to watch, even for the editors/mixers who have seen them hundreds of times. One of them is absolutely horrific, an execution gone bad because a guard intentionally leaves water off a prisoner's head before placing the helmet, just to

watch him burn, literally. It lasts five to six minutes onscreen, and the director established early on that he wanted effects to carry the scene. For later executions, music would tie in more and drama and emotion would be played up. But for this scene, the idea was to capture the horror and reality.

"Essentially the body just burns up," says sound designer Eric Lindemann. "Parts of him explode. The flesh sizzles. It's probably the hardest scene I've ever worked on because of the horrific nature of it. But it's a very powerful scene.

SERVERSOUND™

Real Tools for Reel Editors

**"Pro/Spotter -
New Effect Spotting software for ServerSound"**

The "spotting" process of choosing effects can be a tedious task. Four-time Golden Reel Award Winner Mark Mangini of Weddington Productions needed an **automated spotting solution** for a creative edge on such films as CastleRock Entertainment's **"The Green Mile"**.

"ProSpotter integrates ServerSound's search capabilities with a well thought out project management scheme. It's a powerful tool to organize any project with elegance and consistency."

Mark Mangini
Weddington Productions

Pro/Spotter Features:

- Film (Show/Reel/Scene/Spot) & TV (Show/Spot) versions.
- Independent Search & Spot windows.
- Grab and assign multiple effects from one spot to another.
- Intelligent SmartFX "knows" to assign the same car door to the same car.
- Cross Reference by Related Sounds.
- Automatic revisions when scenes and reels are cut or reassigned.

Pro/Spotter for ServerSound

Toll Free: 800-489-9314
Phone: 818-716-7081
Internet: www.msoftinc.com



because a NETWORK is a terrible thing to waste.

THE GREEN MILE CREW

Sound Editorial Services Provided by
Weddington Productions

Supervising Sound Editor: Mark
Mangini

ADR and Dialog Supervisor:
Julia Evershade

Sound Design: Eric Lindemann

Special Sound Effects By: John P., Ken
Johnson

Sound Editors: Howell Gibbons, Dave
Stone, MPSE

Assistant Sound Editors: Sonny
Pettijohn, Nancy Barker

Effects Recording: Eric Potter,
Ezra Dweck

Foley Supervisor: Aaron Glascock

Foley Editor: Solange Schwalbe

Foley Artists: John Roesch,
Hilda Hodges

Foley Recording: Mary Jo Lang,
Carolyn Tapp

Re-Recording Services Provided by
Warner Hollywood

Re-Recording Mixers: Bob Litt, Elliot
Tyson, Michael Herbick

Recordists: Marsha Sorce, Kevin Webb

Production Sound Mixer: Willie Burton

Additional Production Sound Mixer:
Richard Goodman

Score Recorded at Todd-AO and
Signet Soundelux, Mixed at Signet

Original Score: Thomas Newman

Score Recorded and Mixed By: Dennis
Sands

Music Editor: Bill Bernstein

What will be conveyed to the audience is the sense of power—the power of electricity and the violence of an execution. That's, to me, the moral aspect of the scene."

Each execution is treated differently, but each contains two sound design moments: the surge of electricity, then the body sounds on the oaken chair. The clamping in and strapping down was handled in Foley on the set, and Mangini says the goal was to always make those sounds real, with the actual electrocution becoming hyperreal. When the guards throw the first switch, you get the sound of a generator winding up (a lathe motor base), followed by filament sounds of a series of light bulbs, followed by a second surge as they "roll on two."

"There are about 12 incandescent bulbs that light up in sequence," Lindemann explains. "In my Pro Tools session I had about 14 sounds for each light turning on, and the sound would evolve so you get the idea that more and more power was being generated. I also added in electric arcs and things like that, which would modulate and give you a sense of power. After that, there's always a few moments before the final command where you can just feel the electrical energy in the room buzzing around. It's a subtle, delicate buzzing sound—very quiet and very scary. Then they throw the switch and all that power goes through the person being executed. You *feel* this jolt. We really tried to go for contrast, from very delicate to very large, nasty and scary."

"For the Delacroix execution, the thing that came to mind was that the electrocution device wasn't transferring the power to his body correctly, so it would be intermittent, like it was broken," he continues. "So I integrated sounds of metal ripping, dogs barking, pig squeals and other animals in pain. I took some human screams. Then I distorted them, pitched them and made them all work together. The idea was to make [the electricity] like scratching a chalkboard."

Eric Potter recorded most of the sounds that went into the surges and jolts. At one point they found Potter downstairs at Weddington touching wires connected to a transformer.

"That was a high-voltage transformer, designed for an old neon sign," Potter laughs. "One of the first things I do on a period picture like this is go on a scavenging spree at History for Hire, a prop house specializing in old stuff. I saw this beast of a transformer in the

neon sign section. It looked old and scary—it was rated at 18,000 volts. So I dragged it back to the studio, and mindful of advice I'd gotten from Dane Davis, who worked with electricity during *The Matrix*, I coerced Weddington sound effects librarian Steve Lee into babysitting me during my experiments. He kept a vigilant hand on the power mains cable. I used my field recording setup, which is 100 percent battery-driven (Neumann KM-140 pair, Schoeps CMC-5 pair, Cooper mic pre's, Sony D-10 PRO II DAT).

"Soon I was playing that thing like a Theremin, changing and modulating the

distance between the two bare-ended cables coming off the transformer to produce a ripping, white-blue spark of varying intensity and timbre," he continues. "Perhaps the most interesting moments were when the cable ends were about six inches apart, you could hear invisible static ripping across the field, when that first visible spark is trying to decide if it's going to make the leap yet. This makes for a subtle, creepy tension before they throw the last switch for the execution."

"Of course, one of the first things many of us think of when the subject of

—CONTINUED ON PAGE 180

GAIN

It's not just boosting the signal level, it's adding warmth, increasing presence, and amplifying the essence of your music. It's embracing the signal.

Bellari products have gain. Bellari products are gain. With Bellari products YOU gain.



Sure - our mic preamps have transformer balanced inputs, 48 Volt phantom power, and phase reverse; our compressor/limiters have opto-coupled detector circuitry, our sonic exciter has phase adjustment and spectrum correction encoding, and our direct box has a variable input pad. Yes, all Bellari products have high-voltage plate voltages for that authentic tube sound, but the reason to use Bellari products is...

gain.

Bellari. Oh oh!



Bellari

5143 South Main Street
Salt Lake City, UT 84107
(801) 263-9053 • FAX (801) 263-9068
email: bellari@rolls.com
web: www.rolls.com

CIRCLE #051 ON PRODUCT INFO CARD

PREVIEW

TIMELINE TL-SYNC SYNCHRONIZER

TimeLine Vista (San Marcos, CA) offers the TL-Sync, a new machine synchronizer that works with devices operating under Tascam DTRS, ADAT sync, SMPTE LTC, MIDI Time Code, Sony 9-pin serial, TimeLine's Lynx Bus and MIDI Machine Control sync protocols. Marketed by co-developer Tascam, the TL-Sync generates and syncs to a wide variety of clock sources, including Digital Word Clock, Super Clock, Video Sync, AES/EBU and S/PDIF digital clocks, TL-Bus (MX Clock), ADAT and DTRS clock, SMPTE LTC and MIDI Time Code; 44.1/48/64/88.2/96/128/176.4/192kHz clock

rates are supported. The unit features transport and parameter setup buttons (PC and Mac setup software are also included), GPI connector, ADR beep generator and a ¼-inch jack for footswitch or Alesis LRC control. Price: \$1,999.

Circle 338 on Product Info Card

SWISSONIC 8-CHANNEL MIC PRE/ADC

The AD8 Pro from Swissonic America (Santa Rosa, CA) is a rackmount unit combining eight channels of high-quality mic preamps with eight 24-bit A/D converters operating at 44.1/48/88.2/96 kHz. Each input channel has a combo ¼-inch/XLR connector accommodating balanced and unbalanced

audio sources, along with an input gain control (40dB range), peak meter and switches for phantom power, highpass filter, high/low impedance, -20dB pad and polarity reverse. Word clock input and output eases external synchronization. Dithering facilities provide 20- and 16-bit outputs and include psychoacoustic noise-shaping filters. Output is via four AES/EBU ports. Price: \$1,999.

Circle 339 on Product Info Card

API 560 EQ REISSUE

API (Springfield, VA) has reissued

the 560 10-Band Graphic Equalizer, a recording console module originally released in the '60s. The 560 offers ± 12 dB of boost/cut per band; frequency centers start at 31 Hz and span ten octaves out to 16 kHz. Other new 500 Series reissues include the 525 Compressor/Limiter, the 512C Mic Pre and the 550b Equalizer. Each processor measures 1.5x5.25x6 inches and fits in either the 500H two-slot or 500V ten-slot rackmount frame, or the 500b4 four-slot "lunch box." Price: \$1,295.

Circle 340 on Product Info Card



Observing, Volume 2 (336 pages, \$34.95), both by Joseph J. Carr; and *Handbook for Parallel Port De-*

sign by James Barbarello (240 pages, \$29.95). Call 800/428-SAMS...The new Lumex Opto Express Catalog features a wide range of LEDs, LED lamps, laser diodes and LED/LCD screens and a copy of Lumex's CD-ROM digital reference encyclopedia. For a free copy, call 800/278-5666 or visit www.lumex.com...Howard Sams debuts *E:fact*®—electronically viewable service manuals in PDF format. Each *E:fact* document includes standard-notation schematics, source voltage locations, test point waveforms, electronic parts lists and placement charts. Each *E:fact* is \$10.95 at www.hwsams.com. ■

HOT OFF THE SHELF

HBB's CDRW74 and CDRW80 CD rewritable discs feature wide power margins for compatibility with a range of pro CD recorders, deliver more than 1,000 erase/record cycles and have a stated archival life exceeding 100 years. Call 310/319-1111 or visit www.hhb.co.uk...Link Electronics' SPG-812 modular digital sync generator is a single-rackspace frame with six slots for various sync modules—reference tone generator, master genlock, analog blackburst, component digital black, analog composite test pattern, component digital test pattern, source ID, frame grabber, component analog HD and pattern generator. Each module offers three NTSC and PAL outputs with independent timing

adjustments. Call 573/334-4433...Middle Atlantic Products' RM-MM computer monitor enclosure is a rugged, roadworthy chassis that accommodates most 14- and 17-inch monitors, featuring steel rack handles, an access door and four adjustable crossbars to secure the monitor. Price is \$433.50. Call 973/839-1011...The Harris HDA 6x1 digital audio switcher can be used as a 2-input source selector for any type of AES/EBU equipment. The Harris HDDA is a 1x6 reclocking distribution digital amplifier, available in transformer-balanced, 110-ohm termination (screw terminal I/O connectors) and 75-ohm (BNC) versions. Call 800/622-0022 or visit www.harris.com/communications...Denon's ACD-27 accessory card allows Denon CD and MiniDisc player owners to sync to timecode

by emulating industry-standard Sony VTR control protocol. Easily installed, the \$555 card provides a 9-pin RS-422 port, BNC video reference input, XLR timecode input and a BNC word clock sync. Call 973/396-0810 or visit www.del.denon.com...The 48-page MilesTek catalog offers audio and video networking and connectivity products, racks, wire management and tools. Call 800/524-7444 or visit www.milestek.com...Auralex Acoustics' Metro LENRD Bass Trap is triangular-shaped Studiofoam that fits into room corners and is available in all 12 Auralex colors. Call 317/842-2600 or 800/95-WEDGE...New books from Prompt Publications include: *Solid State Amplifiers* (352 pages, \$29.95) and *RadioScience*



TESTS EVERYTHING BUT YOUR PATIENCE

connect

Q B O X

This compact, rugged box can make your job a hell of a lot easier. Quick-check dynamic mics without firing up the entire system. Use Test tone to confirm connections back to the board without unpacking the mics—or uttering a single “check.”

Trouble shoot snakes and bad cables without moving a muscle. Done testing? Connect it to a snake and bark directions to your crew. Or clip it to your belt and it's a hands-free intercom. Keep your stress levels in check with QBox. Call Whirlwind today.

whirlwind

www.whirlwindusa.com
CIRCLE #052 ON PRODUCT INFO CARD

800.733.9473

NEW SOFTWARE/HARDWARE FOR AUDIO PRODUCTION

STEINBERG TIMELOCK PRO

Steinberg's (www.steinberg.net) TimeLock Pro is a hardware sync box for the Nuendo Media Production System. This word clock interface reads SMPTE (VITC and LTC) timecode and generates MIDI Time Code and a phase-locked, low-jitter word clock reference. MTC is used to trigger the start of audio/video playback and record, and word clock locks the digital audio with continuous sync; word clock output can be set to either word clock (FSx1) or Digidesign Super Clock (FSx256). Lockup time is stated at less than 0.4 seconds. The word clock generator can be resolved to

labels to reach consumers via the Liquid Music Network, a global music distribution system. Also new is Liquid Platinum Studio, a reseller program allowing recording studios to offer Internet mastering and secure distribution to their clients as services, using Liquid Platinum. Distribution through the network lets Liquid Platinum users offer their music for download via Liquid Audio's 200 affiliate Web sites. Optional security features and copy controls let musicians choose to either give away promotional copies or sell them securely, and Liquid Audio handles online transactions and sends quarterly payments to musicians. Pricing for an annual subscription begins at \$99 for one copy of Liquifier Pro software and 25 MB of storage.

Circle 342 on Product Info Card

SEK'D SIENA CARD

SEK'D America

(www.sekd.com) debuts Siena (ARC8896), a 24-bit/96kHz PCI-bus audio card for Windows. Siena features eight 24-bit/96kHz analog inputs and outputs, and two MIDI I/Os. The card is bundled with Samplitude Pro, a 24-bit/96kHz-capable, 8-track version of Samplitude, plus a DirectX-compatible mixer

with real-time reverb. Retail: \$699.

Circle 343 on Product Info Card

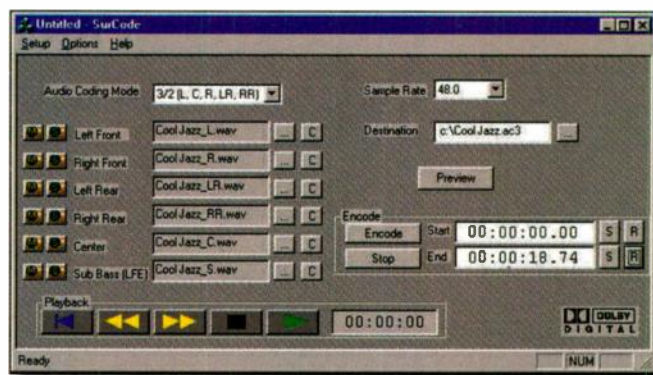
MINNETONKA SURCODE

Minnetonka Audio Software's (www.minnetonkaaudio.com) SurCode is an application for creating surround sound discs for playback in home theater

Dolby Digital accepts six .WAV files and can output either an AC3 file or a Dolby-encoded .WAV file.

A SurCode interface is built into Minnetonka's surround sound authoring program. SurCode for DTS is \$1,995; SurCode for Dolby Digital is \$995.

Circle 344 on Product Info Card



systems. SurCode is available in two versions, for encoding to DTS Digital Surround and to Dolby Digital. SurCode for DTS accepts a surround mix as six discrete .WAV files, from any source, and creates a DTS-encoded file in a .WAV format, which can then be burned onto a CD-R or CD-RW as an audio CD. The disc can then be played in any home

DIGIGRAM/NAGRA PORTABLE DIGITAL RECORDER

Nagra (www.nagra.com) and Digigram (www.digigram.com) have co-developed the RCX220, a handheld, solid-state recorder/player using PC card FLASH technology and MPEG audio compression to store more than

three hours of stereo audio on a single card.

The RCX220 features 20-bit sigma-delta converters and an LCD screen for status

and automatic or manual level control. The unit connects to a PC by USB link to enable running Digigram applications for editing and sig-



theater system that has a DTS decoder. SurCode for

free-running LTC or a video sync signal, and supports 44.1 and 48kHz sample rates (including 0.1% and 4% pull up/pull down rates). Retail: \$999.

Circle 341 on Product Info Card

LIQUID AUDIO PLATINUM

Liquid Audio (www.liquidaudio.com) announces Liquid Platinum, which enables users to quickly post Internet masters of their music and allows independent musicians and record

nal processing.

Circle 345 on Product Info Card

MOTU USB INTERFACE ►

Mark of the Unicorn (www.motu.com) is shipping FastLane-USB (\$69), a 2-in/2-out, 32-channel MIDI interface for USB-equipped personal computers, such as Apple's iMac and "blue & white" G3 Power Macs. Two sets of MIDI jacks provide 32 simultaneous MIDI channels of I/O, with four MIDI activity LEDs. Additional FastLanes may be added via a standard USB hub. Users can further expand with MOTU's other multiport USB MIDI interfaces, such as the 4-in/6-out micro express (\$295). FastLane-USB is compatible with FreeMIDI and OMS for Mac; Windows drivers will be available soon.



The interface is available in five semi-translucent fruity iMac colors (blueberry, tangerine, grape, lime and strawberry), and basic black.

Circle 346 on Product Info Card

ROCKET NETWORK UPDATES

Rocket Network (www.rocketnetwork.com) is shipping RocketControl and API SDK 2.0 to audio software developers, and has

launched its Version 2.0 Internet Recording Studio network. The new network and RocketControl 2.0 will be available as soon as RocketPower applications from Steinberg, Emagic and other developers become available. New features of RocketControl 2.0, SDK 2.0 and the Internet Recording Studio network include

cross-application, cross-platform operation, so users can collaborate with different RocketPower applications—Mac or PC—in the same Internet Recording Studio. Along with support of most digital audio formats and incorporation of the QDesign Music Codec (QDMC), with planned support for MP3, other new features include full access and permission control over online session participants, and private, secure storage for online projects. Internet Recording Studios are available for lease to individuals, and audio-related businesses can lease a Studio Center—a cluster of branded studios integrated with an existing Web site.

Circle 347 on Product Info Card

UPGRADES AND UPDATES

Sonic Foundry (www.sonicfoundry.com) recently released the Stream Anywhere streaming media authoring tool, based on its Vegas technology and with the ability to encode multimedia content in either Windows Media Technologies 4.0 or Real Networks RealSystem G2 formats in a single operation...Fairlight (www.fairlightsp.com.au) introduces AudioBase2, its next-generation audio database and search engine for the Fairlight MF3^{plus} and FAME systems, featuring a high-speed dedicated SQL audio search engine. AudioBase2 is said to return a single record from a

database of 100,000 records in less than two seconds...HHB (www.hhb.co.uk) debuts the CDR80 Silver and CDRW80, 80-minute CD-R and CD-RW discs that comply with Orange Book standards...Emagic (www.emagic.de) announces upcoming Logic



HHB 80-minute CD-R and CD-RW discs

Audio Platinum, Gold and Silver support of the Propellerheads ReWire standard,

for sample-accurate transfer of audio channels between software synths and Logic Audio's mixer. Emagic also announced that a future sub-release of Logic Audio Platinum will support DigiDesign's Universal Slave Driver...Rimage (www.rimage.com) introduced AudioLink, a software accessory that allows popular editing programs to communicate more easily with the company's CD-R publishing and duplicating systems...A new BeOS bundle is available from Be Inc. (www.be.com): The package includes BeOS 4.5, the BeOS Bible and Gobe Productive, for \$149.95 (\$250 if purchased separately). In other Be news, Berkley Integrated Audio Software (www.bias-inc.com) announced

plans to port its Peak editor to BeOS; also, Be announced support for the Roland (www.rolandus.com) ED UA-100 AudioCanvas audio and MIDI interface...Yamaha intros the CRW8424 CD-RW drive, which will write at 8x, rewrite at 4x and read at 24x speed. For more information, visit www.yamahayst.com...New from Bitheadz (www.bitheadz.com), Retro AS-1 V.1.3.0 for PC offers support for ReWire...CreamWare (www.creamware.com) introduces the STS-4000, a software sampler that integrates with Pulsar. Latency is said to be only 1-2 ms...Digital Audio Labs' CardDeluxe has new features, including NT support, AC3 streaming, ASIO support, input dithering and more. ■

THE VIRTUAL STUDIO

ROCKET NETWORK LAUNCHES ONLINE COLLABORATIVE RECORDING

It's been more than 30 years since multitrack tape machines radically changed the nature of recording. In most cases, a recording of a given song no longer documents a single performance in a single time and place, but instead represents a composite of multiple performances at different times, often in different studios. This divergence of real-time performance from record-making has allowed recorded music to evolve into a distinct art form, and freed multitalented artists from the limits of a single pass. But another result was that the recording process extended from hours to months, entailing endless hours of boredom endured while waiting for others to overdub their parts. A person can only take so much Ping-Pong, pinball and daytime TV before wondering if there might be a better way.

Perhaps it was with this experience in mind that artist, songwriter, sound engineer and record producer Willy Henshall founded Rocket Network in 1995 with fellow British musician Tim Bran and American software developers and musicians Canton Becker and Matt Moller. The trans-Atlantic team came together through the Internet, and their goal was to create a way for musicians to collaborate online as an alternative to the traditional recording session.

Aided by an investment from Vulcan Ventures, a venture capital source controlled by Microsoft cofounder Paul Allen, San Francisco-based Rocket Network has made substantial progress toward bringing the online session concept to life. Now under the direction of chairman Henshall and president/CEO Pam Miller, the company has developed the software tools needed to implement their collaborative model in audio applications. In mid-October, they launched the Rocket Network Web site (www.rocketnetwork.com), which serves as a central meeting place for musicians and studios using the system.

Perhaps the most important indication that the Rocket Network concept is being taken seriously is that the company has convinced several vendors of audio production



Typical Rocket Network session using Steinberg Cubase. In addition to the real-time exchanges of audio files and session data, dialog boxes at lower screen allow communication between participants in remote locations.

tools to "RocketPower" their applications. "Steinberg Cubase VST with RocketPower is in beta now," Henshall says. "Emagic Logic Audio will be entering beta in the next few weeks. Several other developers have committed to adding RocketPower to their products, and they will be announcing their support over the next few months." The interface between the audio software and Rocket Network is provided by an open standard API in the Rocket Network SDK (software developer's kit).

THE INTERNET STUDIO

The basic concept behind Rocket Network is to use the Internet to connect people for collaboration on recording projects without being together in the same physical space. Instead of shipping tapes from place to place or renting high-capacity phone lines, participants in an online session enter a virtual studio, referred to—straightforwardly enough—as an Internet Recording Studio. Users record to their local systems, edit the audio or MIDI as necessary, and then "post" their tracks to the Studio, which delivers it to the other participants in the session.

Rocket Network sees audio-related businesses—such as music retailers, broadcasters, post-production companies and recording studios—leasing "clusters" of these

BY PHILIP DE LANCIE

The professional's choice for word-length reduction just got better. Way better.



From the advent of 20-bit recording to today's 24-bit systems, Apogee's UV22 has been the market leader in word length reduction. Now meet its successor.

- Retains detail up to -120 dB at 16-bit resolution.
- Optimized for all signals - no need for special 'psychoacoustic' settings for different types of program material.
- UV22HR's tried and tested table-based design maximizes statistical accuracy and detail.
- 16 or 20-bit output for perfect CD, DAT & DVD-V.
- Upgrades will be available for existing Apogee units that include UV22, and the UV22HR process will be included in Apogee's future products.
- Contact Apogee today for availability of UV22HR for specific products, and for licensing details.

Apogee's new UV22HR. Redefining the standard.

Apogee Electronics Corporation, 3145 Donald Douglas Loop South, Santa Monica, California 90405-3210, USA.
Tel: +1 310/915-1000 Fax: +1 310/391-6262. Email: info@apogeedigital.com

CIRCLE #053 ON PRODUCT INFO CARD

Apogee
ELECTRONICS
www.apogeedigital.com

studios, called Studio Centers, to integrate into their existing Web sites. And the income from these leases, paid based on the amount of data transmitted across the network, will be Rocket Network's primary source of revenue.

The operators of these branded Studio Centers may in turn lease individual studios to end-users, or simply keep an entire center for their own production needs. According to Rocket Network, facilities such as Frank Serafine Studios, tomandandy, Berklee College of Music, TechRep Marketing and Sony Music Studios have signed up to operate Studio Centers as part of the company's "Charter Partners" program.

A crucial distinction between a physical studio and an Internet Recording Studio is that there is no opportunity in the latter for session participants to actually play together at the same time. "The system is a live collaborative client-server environment," Henshall says. "But it's not about recording together live; it's more like working on a multitrack recording together with other people from anywhere else in the world. That is, however, how most audio is record-

ed professionally in the physical world."

Of course, musicians still record plenty of music, in all genres, playing together live. But there are nonetheless all kinds of audio situations—vocal overdubs, commercial voice-overs or grooves built up from a starting drum loop—where it may not be important for all involved to be in the same studio together. Henshall says the Rocket Network might be particularly useful for "songwriting demo sessions where regular writers are geographically spread, finishing albums while artists are on the road and keeping in touch with old musical buddies," as well as film and TV post, ADR looping, commercial soundtracks and voice-overs.

"Several people working in parallel at the same time makes everyone more efficient," Henshall adds. "It's faster, cheaper and more collaborative than traditional serial recording. People also have more individual control over their working environment, and they don't have to move and re-set up all their gear for each session."

SYSTEM ELEMENTS

A session conducted over Rocket Network requires the presence of several el-

ements to make it work. Obviously you need an Internet connection—the faster the better. The company says it is possible to use the system with even a setup as humble as a 14.4 modem, but a connection of at least 56 K is recommended. You also need a browser (minimum Microsoft Internet Explorer 4.0 or Netscape Navigator 4.0) and access to an Internet Studio in a Studio Center.

The system provides access at several levels, governed by "permissions" granted by the studio owner (the entity that has the account with the Studio Center). The level of permission determines whether you are present as an observer or a participant, whether you can grant permission for others to enter the session and whether you have access to the session archives stored on Rocket Network's server, analogous to the "tape vault" of a physical studio.

Another required element is an audio application with RocketPower. As mentioned above, both Steinberg and Emagic have committed to incorporating the system into their digital audio/MIDI sequencing tools, and a RocketPower version of Cubase VST is already in pre-release beta. Henshall says Rocket Network is also in discus-



Burlington A/V Recording Media, Inc.

106 Mott Street • Oceanside, New York 11572



maxell

- Shipped From Stock
- Priced Right
- Immediate Delivery

USA & Canada
1-800-331-3191
NYC Area:
516-678-4414
Fax: 516-678-8959



Visit our Website: <http://www.burlington-av.com> • E-mail: sales@burlington-av.com

Call or Fax for FREE CATALOG!

The Legend Continues

Otari's **MTR-90** two-inch, 24-track analog recorder was introduced in 1979. Still in production and available today (as the **MTR-90 Mark III** version), it remains the choice of those who prefer to record their masters to tape. Over the years, this machine earned a reputation as "The Workhorse."

Fast-forward twenty years to the world of tapeless digital recording, and the overwhelming choice of professionals remains Otari. Our **RADAR II HDR Series** has become the preferred replacement technology for open-reel tape recorders – and for good reason. With advanced 24-bit digital technology, **RADAR II** retains the sonic excellence, 24 or 48-track flexibility, ease-of-use and bullet-proof reliability that has made our name synonymous with quality for audio professionals the world over.

The **MTR-90** and **RADAR II** – two superb choices from one legendary company.



(**RADAR II**™
HDR
SERIES)



OTARI
DIGITAL'S NEW STANDARD

www.otari.com

Otari Corporation, USA Tel: 800/877-0577 +1/818/594-5908 Email: sales@otari.com • Otari, Inc., Japan Tel: +81/424-81-8626 Email: salesinfo@otari.co.jp • Otari Europe GmbH Tel: +49/2159-50861 Email: euro@otari.de • Otari Singapore Pte. Ltd., Tel: +65/284-7211 Email: otarisip@singnet.com.sg • Otaritec Corp., Japan Tel: +81/3-3332-3211 Email: sales@otaritec.co.jp • U.S. Regional Offices: Los Angeles +1/818/598-1200, New York +1/212/324-1700, Nashville: +1/615/255-6080

CIRCLE #055 ON PRODUCT INFO CARD



ing multiple levels of compression for posting and receiving, Rocket Network enables a session to be conducted mostly in a sort of "draft mode," where the fidelity is good enough for everyone to hear what everyone else is doing musically, but the data rate is low enough to minimize the time spent posting and receiving.

"The quality used for transmitting the audio is dependent on each participant's Internet connection speed and what that session will be used for," Henshall says. "There is no point in users waiting for a full-quality download of 14 tracks over a 56K modem when all they're going to do is a small background vocal part. In this case, the studio owner would post a highly compressed stereo mix for the singer to work with."

In some situations—a voice-over for an ad agency, for instance—an approval is required from someone who does not need access to the session. The system includes a feature referred to (less than succinctly) as "Mix down to current Rocket Network Internet Studio Web page." An audio mix of the current state of the project is posted to

that page, where it may be auditioned by anyone who has both access to the page and a player for the codec used (MP3, for example), without the need for a full audio application.

A VIABLE ALTERNATIVE

Certainly there are situations where the limitations of the online session are less than ideal—and not simply because you can't play together in real time. Consider, for instance, a session involving a producer in one place and a performer in another. The producer can't hear the performance in real time, and therefore can't give any feedback until the take is posted in one place and received in the other. Aside from conceivably making the session take longer, this scenario could be problematic for commercial voice-overs, where the producer's job involves guiding the talent toward the desired inflection for every word.

Another difficulty from a producer's point of view is ensuring the recording quality of remotely recorded parts. If a session is conducted at draft quality, poor tone or unwanted noises in a part might not be noticed by the producer until the full-fidelity version is posted after the session is completed. Further, musicians are

often inspired not simply by the notes that their colleagues play, but by subtle qualities in the timbres they hear, qualities that may not come through when working at less than full fidelity.

None of these problems are insurmountable, and the point here is not to suggest any fatal flaws in the Rocket Network—but to explore the frontiers it offers. Imagine the collaborative relationships that might develop when people around the globe can contribute ideas to a project wherever and whenever the spirit moves them. And consider the projects that artists might say yes to that they would previously have declined because they had neither the time nor the inclination to be away from home. It's almost beside the point, then, whether the virtual studio works as well as the physical for all types of recording. As with many new technologies in audio history, the true value of Rocket Network—if it takes off—is less likely to be found in overthrowing the existing order than in expanding the creative possibilities of those who make and record sound. ■

Phil De Lancie is Mix's new technologies editor.

"For sheer tube magic, a realistic vintage vibe, and superb craftsmanship, the L47MP takes top honors."
EM, Brian Knave, Feb. 98

"... this is the microphone of choice for the project studio owner who wants to buy only one microphone. And at the given asking price, it is the biggest bargain in microphones today."

PAR, Dr. Fred Bashour, Feb. 97

"When you tuck vocals recorded with an L47MP into a mix, something magical happens. . . I cannot praise this microphone enough. Don't wait-- buy it."

Mix, Michael Cooper, May 98

"This mic is my first choice for any vocal, reed instrument, electric guitar, or organ overdub, and for any source that would benefit from the thick low mids, creamy highs, and richness that only a tube mic can deliver."

EM, Myles Boisen, April 99



Relive the Magic.

There's a reason why the classic microphones have endured for over 50 years. It's what happens when you put one on the mic stand and plug it in. And that's all you have to do. The classic microphones have a built-in character that makes things easy, so easy that it feels like magic.

There are two ways you can relive that magic. If you have a small fortune and can find a classic mic that works—that's one way.

The other way is with the Lawson L47MP—a new large diaphragm condenser microphone that we hand-craft in the USA with all the look, feel, and sound of a true classic. Magic included.

Experience the magic for yourself with our ten-day, no risk trial.

- Lawson L47MP Gold Mic features:**
- U47/M49 1" capsule reproduction
 - 3-micron gold sputtered diaphragms
 - Vacuum tube
 - Internally shock mounted capsule
 - Continuously variable multi-pattern
 - 30' Mogami cable
 - Jensen transformer
 - Shock-proof carrying case
 - Magic



LAWSON, INC. • DIRECT TO YOU
2739 Larmon Drive, Nashville, TN 37204 USA
Phone 615-269-5542 • FAX 615-269-5745
Visit us at www.LawsonMicrophones.com to see how others are reliving the magic!

CIRCLE #058 ON PRODUCT INFO CARD

Learn to Mix with the **best**



School of Audio Engineering



LONDON 0171- 609 2653 PARIS 01-48 11 96 96 AMSTERDAM 020-622 8790 ZURICH 01-445 2040
MUNICH 089 67 51 67 SYDNEY 02-9211 3711 VIENNA 01-330 4133 ATHENS 01- 321 7661 SINGAPORE 65-741 1257
AUCKLAND 09-373 4712 MILANO 002-89120540 STOCKHOLM 08-730 5100 KUALA LUMPUR 03-737 0935

the largest audio and multimedia institute...

**the first and largest audio institute
28 institutes around the planet
over 12,000 students worldwide
the only international audio school
established in 1976**

**industry recognized qualification
gateway to full university degree

limited enrollment

small class size

more individual studio time

state-of-the-art equipment

Neve & SSL consoles

payment plan options

student exchange program

career placement

***internship opportunities with Disney**

...on the planet!

**In exclusive educational association with
MIDDLESEX UNIVERSITY - LONDON

WALT DISNEY Entertainment
* In cooperation in sound engineering with

www.sae.edu

1-877-27 AUDIO

For more information and a free color catalog call :

NEW YORK CAMPUS 269W 40th Street NY 10018 Tel (212) 944 9121
NASHVILLE CAMPUS 7 Music Circle North TN 37203 Tel (615) 244 5848

CIRCLE #059 ON PRODUCT INFO CARD

boxes may be connected, for a total of 24 channels of analog I/O, a configuration that requires three R8+ cards and three IO8 cards. A maximum of three digital I/O boards (for a total of 24 channels) can be installed as an option. These boxes handle all the syncing, as well as the system's analog interface. The rear panel has two ¼-inch balanced TRS jacks for monitoring audio out of the 1 and 2 output assignments. Two DB-25 connectors for the eight channels of analog audio in/out follow the Tascam DB-25 analog pinout assignment. One DB-25 connects the sync card to the first I/O box in the audio chain. Four MIDI jacks are supplied: MIDI In/Out/Thru and a single jack for MIDI Time Code (MTC) out. Two ¼-inch balanced jacks handle longitudinal time-code I/O, and six BNC connectors handle VITC I/O, video I/O and word clock I/O.

The QWERTY standard keyboard includes custom color-coded mapped keys for shortcuts to transport control functions. Having all the transport, editing and control parameters at your fingertips is a delight, as it cuts back on the necessity of grabbing the mouse to finish off a thought or function.

IN SESSION WITH WAVEFRAME

Opening the WF-System program initializes and configures the system hardware before beginning a session. This program also handles many offline diagnostics and data management functions such as backup, restore, transfer of file to other logical drives, file format conversions and a Build Waveform function. Waveforms become a time and/or resource issue when you are working with long files. You can build multi-level waveforms for each file on all drives in the background or overnight. This saves time on building waveforms while you work.

Five main applications—Manage, Edit, ADR/Foley, Assemble and Print—run the WaveFrame hardware, and a utility menu in each application lets the user move back and forth between programs.

The Manage application controls most of the archiving/disk administrative functions. All sounds are located on drives designated at the time of the recording, with multiple columns for finding and narrowing the search for samples in the "sound selector." It also lets the user define projects, reels, libraries and catalogs. The Library oper-



The Edit screen, in 4-track configuration

ates as a database for placing, organizing and storing sound files, and an unlimited number of Libraries can be created. Using a catalog, users can search for sounds based on a description without having the actual EFX library mounted on the system, enabling searches for offline sounds while spotting or editing online.

Edit and ADR/Foley applications are used for most editing and recording functions. The look and feel of these programs can be customized, and window components can be moved around and added in the form of a Layout. Layout components include track audio controls, tool bars, transport window, auxiliary track window, monitor and ATR controls. An unlimited number of Layouts can be defined and saved, easing the fast recall of particular preferences in busy rooms that are shared by multiple users.

The Audio Control area deals with track routing, naming, numbering, volume/pan, record arming, input, soloing and muting (RISM). Here users can group tracks together in stereo, LCR, LCRS and larger groups, with automated volume and pans. The main track overview is the area for audio editing and waveform display and provides a control interface selecting the audio display format. Audio files can be displayed with or without file name tags, drawn as waveform or block edits, and sized by single track or multiple tracks to fit the occasion.

The Auxiliary track block functions as a work bin for sounds, enabling the user to set up another group of tracks

to work independently of the main track. The aux tracks can be used to create ambience fills from master takes and to edit sound effects or fill backgrounds of unwanted elements. Although not locked to picture, the sounds can be locked with an offset to the main tracks for previewing the edit without actually placing the sound within the locked sync tracks. Locate the sound effect and mark in, go to the main track and locate the in point for the drop, lock the auxiliary track with the lock button to the main tracks to audition. If the move is correct, the effect can be dragged from the auxiliary tracks to the main tracks, while still locked.

WaveFrame provides a number of useful timesaving features for saving and recalling EFX. Commonly used effects can be re-recorded using a sync point, allowing the action point—such as the leading edge of the explosion of a gunshot—to be set as the drop-in point. For example, while editing a scene calling for a gunshot, park the frame at the point of fire, and "lay in." It aligns to the spot where you need it. This system, when compiling a library of EFX, can speed up the spotting process tremendously.

Editing functions include the standard copy, cut-and-paste and drag-and-drop editing, in addition to a host of task-specific editing commands including Dialog Split, Split, Duplicate, Slip, Erase, Open and Close. All crossfades are played in real time. The time and space advantage of not having to save the crossfades to disk is significant. As

SMART

RSM™ 4062

Rack-mountable Recording and Sound Reinforcement Console

- 16 XLR RQ™ "Reference Quality" low noise/low Z mic preamps
 - + 8 tape returns with direct outs (Ch 1-8) to L/R via Mix B
 - + 16 line (8 stereo) inputs (Ch 9-16) via Sub 5-6
-
- = 40 inputs to L/R mix



VISIT US ON THE WEB www.peavey.com

Peavey Electronics Corporation • 711 A Street • Meriden, MS 39301 • U.S.A. • (601) 483 5365 • Fax (601) 486-1278
Peavey Europe • Great Folds Road • Oakley Hay • CORBY • Northants NN18 9ET • England
Tel: +44 (0) 1536 461234 • Fax: +44 (0) 1536 747222 • © 1999

CIRCLE #061 ON PRODUCT INFO CARD



PEAVEY

WPH

Adding to this assembly process, the system incorporates a dialog-split function. This is useful in splitting out camera angles for the dialog editors. Select a section of dialog in an assembled A and B track and call up dialog split. Click on an empty track, and the audio is automatically moved to the new track at the intercut point.

Spotting sheets aid in the recording process. Spotting sheets can be added as a layout component in the edit window. Once up, audition the track and insert all the areas that need to be worked on into the spotting sheet. Names and descriptions of each spot can be included. You have seven optional columns for a sheet, including time in, time out, type, actor, character, props and track. Click on the number of a drop described in the spotting columns, and you are instantly transported to your predetermined "in" and "out" points.

Printing a spotting sheet or cue sheet is straightforward. A cue sheet gives you a complete overview of audio files used with names, SMPTE times and track layouts. Spotting sheets are identical to the

window view when printed. You can also print out specific views. The choices are General, ADR, Foley and Edit. Each program has its own spotting sheet style and layout. The general mode displays all the spots on one spotting sheet.

Most users will find the WaveFrame's sonic quality to be totally acceptable for any task in the post-production arena. The system supports 44.056, 44.1, 47.952 and 48kHz sampling rates at 16-bit resolution. However, as a music recording engineer I prefer to record at the highest bit-rate available. One exception to the 16-bit limitation is WaveFrame's handling of Tascam's MMR-8 24-bit files. It will import these as 24-bit files, edit in 16-bit, and then output them in 24-bit format. The system's file compatibility is comprehensive, with sound file import/export in WaveFrame, WaveFrame 1000 24-bit, MMR-8 24-bit, 1000 Sampler Signal, OMFI 1.5, AIFF, .WAV, Broadcast .WAV and SDII files.

The WaveFrame system has been continually supported and updated over the years, and many of the first systems are still in use today. Version 6.5 is a significant upgrade from previous releases. I have been told that System 7

will bring sonic upgrades such as support for 96kHz sampling and 24-bit resolution and disk storage, with 24-bit A/D and D/A conversion. Version 7 is slated to feature additional tracks and I/O, plus native format interchange capability, which will allow direct integration with nonlinear video editing systems. In addition, V. 7.0 will support Windows NT, for networking and file sharing options.

Prices start in the mid-\$9,000 range for a complete system, including the CPU. A Version 6.5 software upgrade is \$250 for 6.2 users, \$750 for users of earlier versions. The new sampler option is \$2,995. The Mix-with-Pix option is compatible with all WaveFrame and StudioFrame systems, and the latest Version 6.5 software; price is \$4,995. NetWave audio retrieval systems start at \$9,995.

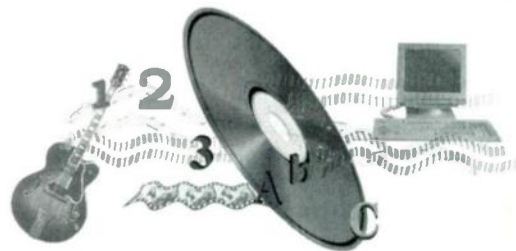
WaveFrame, 1226 Powell St., Emeryville, CA 94608; 510/654-8300; fax 510/654-8370; www.waveframe.com. ■

Michael Denten is an independent engineer/producer and owner of Infinite Studios, a surround mix room with multiformat capabilities in Alameda, Calif.

David Bowie
Magic Dick & J Geils
Polygram
Frank Zappa
Burning Spear
Heartbeat
MGM/UA
Richard Thompson
Phish
Rounder
Roy Orbison
NRBQ
Rykodisc
Alison Krauss
Morphine
Bob Marley
Bruce Cockburn
Tone-Cool
Arlo Guthrie
Medeski Martin & Wood
Sweetfish
The Beach Boys
Bob Mould
Susan Tedeschi

know these guys?
they know us!

THEY TRUSTED US WITH THEIR MASTERING.
508-481-9322 www.cdndr.com



...ndr...
NORTHEASTERN DIGITAL RECORDING, INC.

northeastern digital
unparalleled service, experience, and technology

Because the Future is Now.



Test drive the world's first Digital Microphone....

You have entrusted your life's work to the crystal clear world of digital recording. Go digital at the source with the beyerdynamic MCD Series of digital recording microphones.

- II 24 bit A/D conversion
- II Total self-noise of -120dB
- II Word clock synchronization built-in
- II Gold vapor, true condenser capsule
- II Linear frequency response
- II Customized equalization curves available
- II Proprietary TrueMatch™ "look ahead" DSP prevents the A/D converter from overloading, eliminating digital clipping
- II AES/EBU digital output from the microphone

Digital recording with all the speed bumps removed. Our MCD Series of digital microphones allow you to move into the fast lane of digital recording. Simply set the levels and capture your sound without fear of digital clipping

beyerdynamic... *Fidelity in Audio.*™

*... drive away with one and
we'll pay for the Gas!*

for more information

1.800.293.4463
e-mail: salesUSA@beyerdynamic.com
56 Central Ave., Farmingdale, NY 11735



MPD 200 Power Supply

Purchase an MCD 100 cardioid or MCD 101 omnidirectional microphone in 1999 and we will send you a \$25 pre-paid gas card to thank you! Contact beyerdynamic for further details.



beyerdynamic

CIRCLE #067 ON PRODUCT INFO CARD

FIELD TEST

ues for the Release control are marked as 0.25 to 2.5 seconds. However, it is difficult to quantify the exact release time in JoeMeek units. According to the manual, the unit uses a compound release circuit that reacts quickly to short bursts of volume, and less quickly to sustained volume, which helps maintain the transparency of the sound.

The SC4's Width control is my favorite feature. Width controls the Side signal or the level of the ambient sound information after the M/S is decoded back to stereo. Stereo width

control is an important tool when mixing, as you can adjust the perceived lateral "size" of a stereo image. The center-detented point provides 100% of the normal stereo width. Fully counterclockwise is full mono, and in the 200% fully clockwise position, the Side signal is twice as loud as in normal stereo, offering plenty of width adjustment without mono compatibility worries.

MAKING IT FUN

In session, the SC4's Width control was valuable for adjusting the relative size of different stereo instrument/

vocal recordings within a final master stereo mix. When combining numerous stereo pairs of strings, backing vocals, acoustic pianos, pads or drum kits—perhaps with just too much aggregate stereo spreading—all this excessive width information in a pop music mix can end up sounding washed out and blurred and lack a solid center mono component. A simple fix to this problem is to collapse the left and right channels of a stereo pair with panpots, but this builds the center up *and* reduces ambience. Adjusting the M/S matrix offers a more careful method with its main use for increasing width. Adding stereo width by increasing the Side signal will open up the sound, exposing more of the ambient information—whether natural or artificially added.

The SC4 is easy and fun to use. A very noncritical approach should be taken when using this unit, which I believe contributes to the whole line's popularity. I found it easy to compress anything from stereo pads and keyboards to vocals and full mixes. If you use the unit for a single mono source, I suggest sending the source to both inputs and then summing or mixing the two outputs together. I used the SC4 for a stereo mix where I was looking for a "rubbery" special-effect compression. The sound of the unit is non-transparent, chunky, thick and smooth—perfect for use with thin, excessively bright productions. The sound reminds me of the little old British Pye compressor that I bet Meek used himself. Control over Width was handy for widening and bringing out more ambience from a stereo string section recording made in an apparently dry room. This was a case in which I used a Slope of 1 and very little squash: I was mainly interested in cranking the width up to hear more of that dry room.

The JoeMeek SC4 is priced at \$2,000, and the DAD DC4 digital interface board is \$300. Clearly, this box is my favorite from JM, and with its unique, alternative compressor sound and simple, effective way to manipulate M/S, the SC4 is a worthy addition to any outboard rack.

Distributed by PMI Audio, 23773 Madison St., Torrance, CA 90505; 310/373-9129; fax 310/373-4714; www.pmiaudio.com.

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

M-1 MICROPHONE PREAMPLIFIER

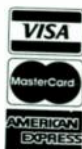


(Actual size)

Excellence

Since 1987 the M-1 mic preamp has been impressing artists, engineers and listeners around the world. Typical comments: "Whoa!" "Even the producer could tell the difference." The audio circuitry is simple, elegant and superior:

- **Jensen JT-16-B mic-input transformer.** Jensen's best mic-input model. If you thought transformers were a compromise, you haven't heard this one!
- **990C discrete op-amp** provides extremely low input noise, excellent output characteristics and superior sonic performance. Class-A operation.
- **No coupling capacitors in the signal path.** Capacitors degrade the signal. Transformerless circuits need them. Cheaper circuits use them. Not the M-1.
- **VU-1 LED meter option** (shown) provides great metering where you really need it.
- **Jensen JT-11-BMQ line-output transformer option** (Jensen's best).
- All push-buttons are LED backlit, dimly when off, brightly when on. Channels and options can be added later. Much more. 15-day trial period. Experience **excellence!**



THE JOHN HARDY COMPANY

★★★★★
Ask about the
Jensen
Twin Servo®
990 mic preamp!

Phone: 847-864-8060

P.O. Box AA631
Evanston, IL 60204

Fax: 847-864-8076

CIRCLE #068 ON PRODUCT INFO CARD

Collaborate...



Collaborate

Isn't that what you really want to do? Brainstorm. Share ideas. Share the load. Make great projects. That is what our business is all about.

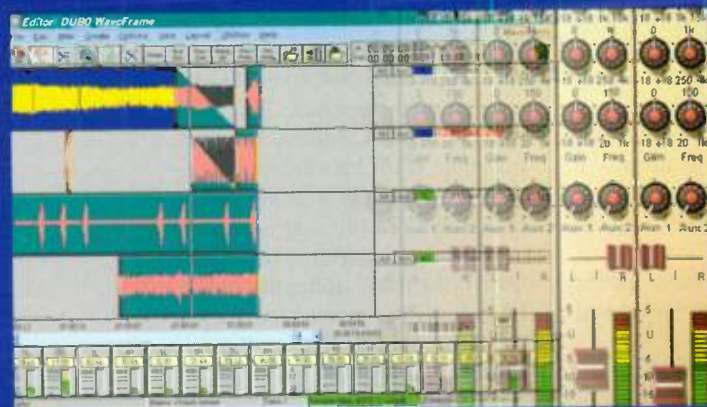
WaveFrame and TASCAM have joined forces to make new levels of collaboration possible. With WaveFrame 6.5 and the TASCAM MMR-8 digital recorder and MMP-16 digital player being 100% compatible, you can optimize your work flow and collaborate.

Record, Assemble, Edit your project on WaveFrame 6.5. Move your drives to a MMR and your project plays back exactly as you edited. Record additional material and make changes on the MMR and move the drive back to your WaveFrame for further editing. All seamless.

The TASCAM MMR/MMP is the tool that makes mixing and recording facility collaboration possible. It is not only 100% WaveFrame compatible, but records, reads and writes in all of the major DAW disk formats. The MMR/MMP can even translate between formats to help you collaborate.

WaveFrame is working to make collaborating even better, with a new Sampler, Broadcast quality Random Access Digital Video, NT Server based sound library system, a New DSP Mixer engine with plug-ins and our All Real Time Editing WaveFrame is the best way to collaborate.

All exactly as you imagined it would be.



SOUNDELUX HOLLYWOOD is widely acclaimed for providing the highest quality audio services to the entertainment industry. Soundelux uses WaveFrame for its editorial services and TASCAM MMR-8 and MMP-16s for recording and mixing. Soundelux has earned five Academy Awards and fifteen Emmy Awards, including the 1995 Academy Award for Best Sound Effects Editing on *Braveheart* and the Academy Award for Scientific and Technical Achievement in 1994.

Above Left:
Kim Waugh, President
Vine Street Studios & Signet Soundelux Studios

Above Right:
Wylie Stateman, Co-Founder/Supervising Sound Editor
Soundelux Entertainment Group

TASCAM.

TEAC America, Inc.
7733 Telegraph Road
Montebello, CA 90640
213.726.0303
fax 213.727.7635
www.tascam.com

WaveFrame

Distributed by:
Advanced Systems Group, LLC
1226 Powell Street
Emeryville, CA 94608
510.654.8300
fax 510.654.8370
www.waveframe.com

CIRCLE #069 ON PRODUCT INFO CARD

REQUISITE AUDIO PAL

TUBE MIC PREAMP/AUDIO LIMITER

In the past decade, the substantial demand for tube-based outboard gear has driven prices in the vintage gear market steadily upward. As a result, those of us seeking the “warmth and musicality” that vintage gear can provide are finding more options in the “vintage style” new gear hitting the market. Requisite Audio is one vendor that has answered this demand with a single-channel, all-tube combination preamplifier/optical limiter appropriately named the PAL.

THE DESIGN

In developing the PAL, Requisite Audio owner/lead designer Danny McKinney combined features of Requisite's Y7 preamp and its L1 classic style optical limiter into a single 2-rackspace package priced at \$2,300. The units are handcrafted

output or gain reduction display on the VU meter. Two PALs can be linked for stereo applications with a ¼-inch jack and a Link mode switch.

Three large knobs control the mic/DI input gain, peak reduction and output level. Compression ratios are variable between 10:1 and 3:1, with the peak reduction knob increasing the amount of gain reduction. At the 10:1 ratio, the PAL exhibits mild compression until the program level reaches -20 dB, at which point the limiting function actually hits 10:1. The PAL can provide as much as 68 dB of gain in the mic mode and up to 13 dB of gain in the limiter mode, and drive at +26 dB before clipping.

THE SOUND

Using the PAL as a vocal mic preamp with a U67 into an Apogee AD-8000, we tracked a female vo-

a U67 into the PAL was big and open sounding. The low end was round and pronounced—even without the use of a DI on the bass—with the transient sounds of the strings crisp and clear. Tweaking the compression settings worked some interesting sustain effects into the mix.

Calibrating two PALs in Link mode as a stereo pair was easy. We decided to record some live drums using a minimal mic setup. With the RE20 kick and SM57 snare going into a Neve 1272 preamp, we routed a pair of KM56s through the PALs as a pair of X/Y overheads and let the tweaking begin. The clarity and detail were fantastic. Experimenting with compression settings, gain input and muting of the snare and kick created a rich-sounding live room ambience that momentarily made me think I was



and point-to-point hand-wired using the highest quality components. All transformers are based on classic designs and upgraded wherever appropriate. The only circuit boards used in the PAL are for non-audio functions such as power supply components.

Operation of the PAL is simple. Inputs include mic, line-level and a Hi-Z direct input that is accessible on the front panel. Controls include a toggle for selecting line or mic sources (the Hi-Z input is also active in mic mode); a -20dB mic input pad; phantom power switch; and another switch for choosing

alist for a project on a local label. I began with the peak level set fully counterclockwise to hear how the vocal would sound with minimal compression. The results were amazingly clear, detailed and without coloration. Varying the settings between the input, peak and output gain stages allowed me to bring out subtle amounts of airiness in her voice. Toggling between both of the compression ratios, the clarity remained.

For a test on a mono instrument, an acoustic bass miked with

Rudy Van Gelder. The PALs really worked well in this situation.

Next, we ran some material through the Hi-Z DI inputs, beginning with a mono source. A Music Man Stingray bass through the DI sounded crisp, with the limiting smoothing it out nicely. The sound was not quite as crunchy as I would normally want for electric bass, so the PAL probably wouldn't be my first choice for this application.

Working with stereo drum loops on a Korg Triton going through the DI inputs, we wanted to see what the PAL would add in terms of presence and detail. Results at the

BY WALT SZALVA

Electronic Musician's 1998 Choice for Best Microphone —*at any price.*

RØDE™ NT1

Large Diaphragm Condenser Microphone

Here's What They Said:

"It gets our award for two simple reasons: It sounds great, and it's as inexpensive as they come. You need adjectives? How about fat, warm, and present? Heck, how about rich, sexy, and downright delectable? We won't hide our surprise in learning that the NT1 held its own, at least tonally, against mics costing four and five times the money."

—EM Editors, January 1998, EM

"The NT1 sounded surprisingly good on just about everything, but I especially liked it on vocals, on acoustic guitar, and as a drum overhead. This mic has a very open and detailed sound with lots of presence."

—Brian Knave,
April 1998, EM

"The NT1 has a rich, stunning sound—very transparent, present, and brightly detailed—that would prove a valuable addition to any mic cabinet."

—Brian Knave, April 1998, EM

"...the NT1 compared very favorably to both the AKG C414 and the Neumann U 87—and that's saying a lot!"

—Brian Knave, April 1998, EM

"...puts vocal tracks right in your face with startling clarity."

—Brian Knave, April 1998, EM

"...cymbals and hi-hats were reproduced exceptionally well..."

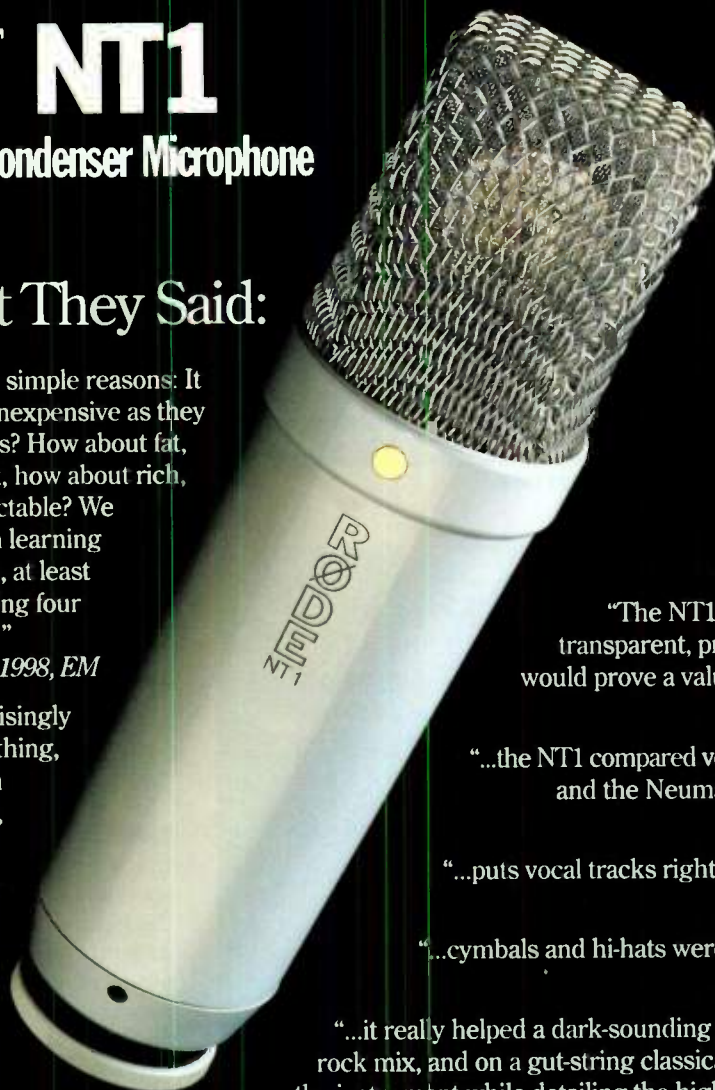
—Brian Knave, April 1998, EM

"...it really helped a dark-sounding acoustic guitar cut through a busy rock mix, and on a gut-string classical guitar, it captured the warmth of the instrument while detailing the high end and minimizing boominess."

—Brian Knave, April 1998, EM



1998 NOMINEE



Don't Trust What You Read? Trust What You Hear.

Send for a free RØDE Microphone Audio Demo CD.

Write to "Free CD," c/o Event at the address on this page,
or visit our special Web address, <http://www.event1.com/rodecdd/>



P.O. Box 4189
Santa Barbara, CA 93140-4189
Voice: 805-566-7777
Fax: 805-566-7771
E-mail: info@event1.com
Web: www.event1.com

CIRCLE #070 ON PRODUCT INFO CARD

In the Studio?

FREE Guide Saves You Time and Money!

Nothing is more frustrating than making CDs or cassettes and finding out that there's something wrong with your master. **DISC MAKERS' Making A Great Master** provides insider information, as well as common sense tips, on preparing an error-free master on the first try. No matter where you record your product, you need this 36-page booklet before leaving the studio.

Call Today For Your FREE Guide:
1-800-468-9353

www.discmakers.com/mix · info@discmakers.com

DISC MAKERS
CD, CASSETTE, AND VINYL MANUFACTURING MADE EASY

CIRCLE #071 ON PRODUCT INFO CARD

A SOUND REASON FOR A PRO DAT RECORDER



PCM-R500 Digital Audio Recorder

Reliable 4 Direct Drive Motor Transport; a Jog Shuttle Dial for easy operation; Super Bit Mapping® for near 20-bit performance; and balanced XLR Analog & Digital I/O. Eddie Ciletti in *EQ Magazine* said, "The Sony PCM-R500 is a great buy for the money...a big improvement for DAT users in this price class."

©1999 Sony Electronics Inc. All rights reserved.
Sony and Super Bit Mapping are trademarks of Sony.

SONY

FIELD TEST

initial settings (peak level gain turned counterclockwise) were predictably warm and clear. However, we really had a lot of fun tweaking the input gain and slamming the compression into gear. A nice, clean, puffy texture to the sound added a whole new dimension to the drum loops.

For a final test, we wanted to see how the PALs sounded in a line-level situation. We sent a 2-channel final mix

We really had a lot of fun tweaking the input gain and slamming the compression into gear.

of a song through the linked units to hear how it compared to some of our favorite stereo compressors (a Manley Vari-Mu and a Focusrite Red 3). The overall sound of the PALs was extremely clean at the initial uncompressed stage. For an hour, we tried various settings in an attempt to make the unit distort. Only by slamming the gain at a very high compression output in a 10:1 ratio did the PALs start to sound remotely unnatural. In comparison to the Manley and Focusrite, it affects program material in a much more natural-sounding way, while adding a bit of body to the low end. Very musical and pleasing.

THE VERDICT

If you're looking for a clean, natural-sounding preamp/compressor combo, the PAL is a good choice for your rack. As a mic preamp, the all-tube design is impeccably built to add depth and clarity with dynamic control that is very natural sounding. As a line-level amplifier and bus compressor, two linked PALs provide an option for ultra-clean compression on 2-channel material. With this in mind, it would be hard to buy just one. In fact, I thought these sounded so good that I had to buy two for myself...

Requisite Audio, 2645 E. Glenoaks Blvd., Glendale, CA 91206; 818/247-2047; fax 818/247-4498; www.requisiteaudio.com. ■

Walt Szalva was born and raised in America.

PROTEA EQUALIZE

THE NEW PROTEA SYSTEM II EQUALIZER/SYSTEM PROCESSORS



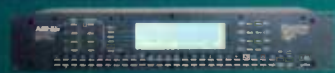
Equalize the Protea way. The new Ashly Protea System II digital equalizer/processors offer all the remarkable versatility and control of the original Protea series while providing enhanced sound quality and exceptional signal-to-noise, making them well suited to nearly any application, from F.O.H. to studio recording. We've taken the Protea's already-impressive features—intuitive user interface, extensive control options, expansion possibilities (up to 16 channels of EQ, using 2- and 4-channel slave units), built-in compressor/limiter, and much more—and added a host of truly professional improvements. The System II features a totally redesigned DSP chain (with new 100MHz DSP and 24-bit A/D/A), >110dB dynamic range, <-90dBu signal-to-noise ratio, 1.364-second time delay (quadruple that of the previous Protea!), seamless preset switching to eliminate dropouts, inaudible zipper noise, increased filter adjustment speed, finer compression ratio steps, easier MIDI channel programming, and more. The result is a series of revolutionary equalizer/processors with audiophile quality specs and the versatility for F.O.H. and monitor-mixing, speaker cluster alignment, in-ear monitoring, and even studio recording.

Original Protea Owners:

Your original 4.24G may be upgraded to include the full features and benefits of the Protea 4.24G System II. Please contact our Customer Service Department for the details.

4.24G

Digital equalization mother unit—the programmable, four-channel equalizer/processor that lies at the heart of the Protea System II. Can be used to drive any Protea series graphic slave unit, and can be controlled by the 4.24RD remote controller, or via PC software.



2.24GS/4.24GS

Two- and four-channel processors with: 28 graphic filter bands, full-function compressor/limiter, and 1.364-second delay per channel. Controllable by 4.24G or 4.24RD, or via included PC software.



2.24PS/4.24PS

Two- and four-channel processors with: 12 parametric filter bands, high and low shelf filters, full-function compressor/limiter, and 1.364-second delay per channel. Controllable via included PC software.



4.24RD

Optional full-function remote control with display for Protea graphic processors (4.24G, 2.24GS, 4.24GS).



Protea System Software

For added versatility, you can control every function of your entire Protea system from your PC. Available FREE on our web site: ashly.com



ASHLY

Ashly Audio, Inc. • 847 Holt Road, Webster, NY 14580-9103

Toll Free: 800-828-6308 • Tel: 716-872-0010 • Fax: 716-872-0739 • <http://www.ashly.com>

International Agents: E&E Exports, Inc., 17922 Sky Park Circle, Suite P, Irvine, CA 92714 • Tel: 714-440-0760 • Fax: 714-440-0766

In Canada: Gertraud Distribution Inc. • Toll-Free Tel: 888-462-8346 • In Mexico: Comercializadora Gonher S.A. de C.V. • Tel: 52 (17) 16-82-00

CIRCLE #072 ON PRODUCT INFO CARD

100

BRAUNER VALVET

LARGE-DIAPHRAGM STUDIO TUBE MICROPHONE

It's easy to get jaded about microphones today. You can't swing a dead cat without hitting another new condenser mic. And the constant din of "just as good as" in the marketplace is loud enough to rattle the fillings in your tightly clenched teeth. However, poke your head above the clamor, and the mic population thins out. That's where you'll find mics like the Brauner Valvet.

UNDER THE HOOD

A dual-pattern (cardioid/omni) tube mic, Valvet is priced at \$2,695 with suspension, power supply, cable and metal road-case. Removing three Allen-head screws that lock the outer housing to the internal chassis, I looked inside. The German-made Valvet has a dual, large-diaphragm, pressure gradient condenser capsule featuring a Siemens EF 86 vacuum tube and an LL1577 Lundahl output transformer. The hard plastic base of the capsule is disc-shaped, with a hemispherical nipple. A crescent-shaped cradle attached to the top appears to help provide shock isolation for the metal capsule.

Each backplate of the capsule has 108 holes drilled into it. Those and the ten through-holes are plainly visible because the gold-coated membranes are extremely thin. Construction quality inside the mic is solid and clean. The printed circuit card in the body of the mic has perhaps the fewest components I've seen.

The circular headgrille has a flat open top and uses a double mesh metal grille that is very open in appearance. The custom mic suspension uses six elastic bands and an inner semicircular cradle that the mic snugs into. The connection between the mic and the cradle looks a bit disconcerting, but the cradle holds the mic quite firmly and at



the same time allows it to be rotated for positioning. A lever on the suspension-mount pipe thread allows the mic to be tilted and then locked into place.

The separate power supply has three toggle switches: One changes the pattern from cardioid to omni. Another flips the polarity of the signal, and a third turns the supply on and off. A trendy blue LED indicates power. On the back side are connections for the multi-pin cable to the mic, a mic level output and a standard IEC power jack. All power is provided by this power supply, so phantom power is not required. Brauner lists the specs in a minimalist manual. Self-noise is 13 dBA, in omni or cardioid. Signal-to-noise is 81 dBA in cardioid, and sensitivity is 28 mV/Pa. Frequency response is listed as 40 to 22k Hz, -3 dB. Maximum SPL is 142 dB (0.3% THD). The manual notes directivity as omni and figure-eight, which is perhaps a cut-and-paste error from another model, as the Valvet is cardioid and omni. Switching between patterns with the Valvet merely creates several gentle, low-level "whumps."

THE SOUND

If I were to write a two-word review of Valvet, it would say: "Instant Airband." Although it's a tube mic, the Valvet isn't the sort of tube mic that gives that slow, soft, smokey sound. This is the mic to use to get that intimate, down-the-throat R&B ballad vocal. If the vocalist has polyps, you'll be able to count them. Make sure your vocalist doesn't have any mouth noise problems. Valvet will not ignore them.

I had a first fling with the Valvet at Flite Three in Baltimore. Going through their API console, the brightened Valvet, combined with the API edge, was very unflattering on male vocals. Acoustic fingerpicked guitar, on the other hand, sounded quite nice. This experience again emphasizes the importance of matching the right mic with the right preamp for the specific job. My guess would be that the Valvet, given its high-profile personality, would be better matched with more neutral preamps like the Millennia Media and Benchmark.

Back at my studio, I set up a Neumann TLM103 side by side with the Valvet in cardioid and, using a pair of GML mic pre's, ran to left and right inputs of my Orban Audicity workstation. The GML are recognized to be mostly neutral. Positioning myself between the mics and trimming the Valvet back a few dB to match the TLM103, I recorded a piece of narration. On playback I was surprised to find that, although the Valvet track was brighter, the difference wasn't as great as I had expected. The Valvet wouldn't be my choice for V/O work with a sibilant voice, nor would I grab it to beef up a thin voice or instrument—this mic has other uses. On ballad vocals where sibilance is low and there are few hard consonants, the Valvet will

BY TY FORD

Full Sail graduate **Derrick Perkins** with **Stevie Wonder** in one of Full Sail's **Solid State Logic SL 9000 J** studios.

Derrick is **Co-Associate Producer & Programmer** for **Stevie Wonder's** platinum album, *Conversation Peace*, including the **GRAMMY** Award-winning single, "For Your Love."

"Today's entertainment industry, more than ever before, requires employees who not only love the art, but who understand the technology that's involved in taking it to the people. Full Sail is a place where a person with dreams of working in this industry can find a way to get in. I know first-hand, because I hired Derrick, a graduate. Thanks to Full Sail, he was able to translate his love of music into a career in the studio."

-**Stevie Wonder**

FULL SAIL
Real World Education

School of:
Audio • Show Production & Touring
Film/Video • Computer Animation
Digital Media • Game Design

800.226.7625
www.fullsail.com

3300 University Boulevard • Winter Park, FL 32789 • Financial aid available to those who qualify • Job placement assistance • Accredited by ACCSCT

©1999 Full Sail Records, Inc. All rights reserved. The terms "Full Sail", "Full Sail Real World Education", and the Full Sail logo are either registered service marks or service marks of Full Sail Records, Inc. Other product and company names mentioned herein may be the trademarks of their respective owners. Full Sail Real World Education is not sponsored, endorsed by or affiliated with such other companies.

CIRCLE #073 ON PRODUCT INFO CARD

FIELD TEST

raise the vocal into that intimate, rarefied "air space" that a lot of people seek these days.

On fingerpicked guitar, my Martin D28S sounded very "airified." Somewhat old, medium bronze strings sounded newer. Every nuance and flaw, especially those with an edge, were quite audible. Switching to a D'Andrea medium flat pick resulted in the sort of sound you might look for when tracking an acoustic guitar for a rhythm part that needs a bit of bite to be heard through a mix, but there was too much pick sound for solo work. I would imagine the Valvet would be equally revealing on nylon or gut strings, providing finger squeaks were minimal.

Considering Valvet's preference for higher frequencies (and, by the way, quite a bit of sound makes it to the capsule through the top of the headgrille), I wasn't surprised that minor movements of the mic or source resulted in noticeable tonal variations. Got nasty reflections in your room? You'll hear them. At a distance of about 2.5 feet in my moderately damped space, the openness of the Valvet translated into being able to

hear more early reflections. The TLM103, while not as bright, sounded more direct and didn't hear the room as much. Like most large capsule condensers, get a source a bit too far off-axis and you'll hear some strange artifacts.

In the dreaded key jangle test, the TLM103 splatted a bit more than the Valvet. Even more interesting, the spectra of their splatter was quite similar. I would have expected a noticeable upward shift in the frequency of the key noise with the Valvet.

To my ears, the one thing this mic doesn't deliver is the "meat" of heavy midrange. That's not a condemnation. It's just obvious that the mic wasn't designed to do that job. The proximity bass hump is, of course, more present in the cardioid mode than in omni. You'll get some meat in cardioid, but as you close in, there's less air to diffuse the high frequencies and they become more apparent as well. Although I did not have an actual curve to compare this mic to others, to my ear the Valvet curve reminds me a bit of the AKG 414 curve: respectable bottom, lesser mids, sizzle on top.

But whether in cardioid or omni pattern, the net effect of the Valvet is com-

parable to someone opening the drapes and letting the light in. Without making any direct comparisons, I had similar experiences with the Neumann M149 and one of the Manley cardioids. If your complaint is that everything sounds too dark (and your hearing is okay), the Valvet will definitely brighten things up. Just make sure you know what you're getting yourself into. If your studio has low ceilings and only minimum absorption and diffusion, you will hear the ceiling and wall bounce as you pull the mic back. Push the mic in too close, and the highs may be excessive. The Valvet performs much better in a properly designed big room with high ceilings and a proper combination of diffusion and absorption. I'd like to have the opportunity to use a pair of Valvets for a coincident omni orchestral recording in a nice hall. Maybe next time.

Brauner Microphones are distributed by Transamerica Audio Group, 2721 Calle Olivo, Thousand Oaks, CA 91360; 805/241-4443; fax 805/241-7839; www.transaudiogroup.com.

Ty Ford, a semi-regular contributor to Mix, can be reached at www.jagunet.com/~tyford.

KEYFAX OMNIBUS EDITION

by Julian Colbeck

Order your own
**Keyfax Omnibus
Edition from MixBooks**

catalog: #71082 for 24.95 plus S&H

from the U.S.

Call (800) 543-7771

Fax (800) 633-6219

International orders

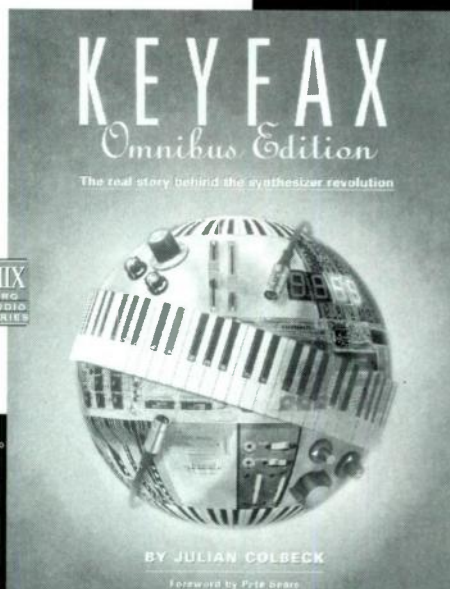
Call (913) 967-1719

Fax (913) 967-1901

Mail to MixBooks: c/o PRIMEDIA Intertec
9800 Metcalf Ave.

Overland Park, KS 66212-2215

Internet - <http://www.mixbooks.com>



Foreword by
Pete Sears

**PRIMEDIA
Intertec**



**The Keyfax
Omnibus Edition
is a buyers guide
like no other!**

This compendium of the previous five volumes in the Keyfax series adds tons of new historical information from the world's foremost expert on classic synths.

Colbeck profiles the top 100 keyboards of all time and the 13 leading synth manufacturers, as well as providing technical specifications for hundreds of other synths.

Available from your local book or music retailer exclusively through:
Hal Leonard Corp.



Digital essentials.

interface solutions from z-systems

24/96 and 16/44.1: Happy together, at last!



The z-3src sample rate converter supports sample rates from 32 kHz to 96 kHz at resolutions from 16 bits to 24 bits.

The z-3src sample rate converter is the perfect tool to make today's and tomorrow's high-sample-rate, high-resolution formats coexist peacefully with yesterday's formats. Supporting up to 24 bits at 96 kHz, the z-3src can convert between virtually any sample rates, formats, and wordwidths you can throw at it. Loaded with features and amazingly flexible, the z-3src is suitable for audio applications demanding the utmost in transparency, yet it has a suggested retail price of only \$1500. Install one today – you'll be happy, your equipment will be happy, and, most important of all, your clients will be happy.

Never climb behind your rack of digital gear again!

The z-16.16 Digital Detangler connects up to 16 AES/EBU, S/PDIF, and optical digital audio sources and destinations.



The z-16.16 Digital Detangler™ is a digital audio switcher, patchbay, distribution amplifier, and format converter, all in one easy-to-use package. Custom-configurable to meet your exact needs, the z-16.16 can handle AES/EBU, S/PDIF, and optical input and output formats. Once you connect all of your digital equipment to the z-16.16, changing "who speaks to who" is as easy as pressing a few buttons. Up to 99 presets can be saved and recalled. Install a z-16.16 Digital Detangler in your facility and you'll ask yourself the same question thousands of ecstatic users have asked themselves: "How did I ever live without a Digital Detangler?" Available in sizes from 8x8 to 64x64 stereo pairs. Mac and PC software control also available.

z-systems audio engineering

4641-F N.W. 6th Street • Gainesville, FL 32609
Tel: 352.371.0990 • Fax: 352.371.0093
e-mail: z-sys@z-sys.com • web: <http://www.z-sys.com>

ZSYS.

CIRCLE #075 ON PRODUCT INFO CARD

WHY LOUDER SOUNDS BETTER



PHOTO: STEVE JENNINGS PHOTO ILLUSTRATION: NINA CHISAGO

All too often we hear complaints that the sound is too loud at concerts. Further, widespread enactment of sound control regulations often requires concert sound engineers to limit SPLs to mandated levels. However, despite regulations and a growing awareness on the part of concert engineers that high SPLs are dangerous, few seem able to turn it down. Though concerts are louder than ever—and many in the music business suffer some hearing loss—there seem to be hidden forces at work that encourage engineers to turn up the volume. We are painting ourselves into a corner.

This is not a trivial problem. Results of the free screenings offered annually at the AES convention by the House Ear Institute suggest that hearing loss accumulates in our industry like black T-shirts. The averages by age show several dB of loss above 2 kHz for each ten years of age, a process that accelerates with time. For those in their 40s, the mean threshold of hearing

measured was reduced by 12 dB or more above 2.5 kHz. Pushing down all the sliders on the right side of a graphic EQ simulates the hearing of the typical middle-aged audio professional.

After four hours at 95 dBA in one day, a listener's hearing is considered at risk. Under somewhat lax OSHA guidelines, exposure time should be cut in half for each 5dB increase, so for levels averaging 100 dB, over two hours is considered dangerous, and the European formula is even stricter, halving permissible exposure for each additional 3 dB. Clearly, we are able to hurt ourselves, our clients and their audiences with today's concert sound levels.

There are many political and career forces that encourage engineers to turn it up—the guitarist's girlfriend and the band's manager spring to mind. Plus, the physiological and emotional impact of loud sound simply gets everyone's

heart beating faster. Bad venue acoustics or a terrible mix position often tempt a mixer to turn it up (not always a successful tactic). But there are also subtle mechanisms of human audio perception that tend to make the console's faders "upwards sticky" and encourage higher concert levels.

LOUDNESS PERCEPTION

The ear is not a linear device—its response varies with frequency. Hearing sensitivity peaks in the high-mids and falls off at the extremes, and the hearing curve also changes with volume, becoming slightly flatter at higher SPLs. In order to maintain a perceived balance between high and lows (and mids and low-mids, and so on) a "flat" playback system may need to be EQ'd differently for different levels of reproduction. The "loudness" control on your stereo attempts to correct this problem by applying a progressive EQ that compensates for the well-known "equal loudness

—CONTINUED ON PAGE 136

BY MARK FRINK

**TOUR
PROFILE**

SONGS AND STORIES FROM MOBY DICK

*Laurie Anderson Gives Melville's Classic
a Technological Makeover*

Songs and Stories from Moby Dick," the latest touring show by Laurie Anderson, is a one-and-a-half-hour theatrical presentation that makes extensive use of computer-based technology. The almost continuous multiscreen video projection is streamed directly from hard disk, the FOH mix and onstage performers' in-ear mixes are largely dependent on computer-based console automation, and a new instrument developed specifically for the show, the "talking stick," requires its own Macintosh G3.

None of this will surprise those familiar with Anderson's career. Described as "the 20th Century's most famous performance artist and high priestess of multimedia performance technology," Anderson has long been known for her innovative use of digital technology, both in concert and in the recording studio.



and FOH engineer Jody Elff in late October, after the first of five shows at the Zellerbach Auditorium in Berkeley, Calif.

SOUND DESIGNER/ PERFORMER

Sound designer Green has been working with Anderson for more than a decade and has, at one time or another, functioned as Anderson's studio engineer, MIDI tech, FOH mixer and playback operator. "I was on the 'Empty Places, Strange Angels' tour that was in 1989-90, and then I also did what was the beginning of the 'Nerve Bible' tour," he recalls. At some point, Green also began mixing monitors. "That gave me enormous respect for people who [mix monitors] for a living," he says. "It's a crazy, almost black art. You learn to get your information from places other than what you hear."

For "Moby Dick," Green is not



Sound designer/monitor engineer/performer Miles Green at his offstage playback and wireless control center. A "talking stick" is in the foreground.

However, although press coverage of "Moby Dick" has been extensive, most of it has concentrated on the artistic challenges that Anderson faced in adapting Herman Melville's multilayered novel for the stage. In the general press, the high-tech production has been rather vaguely described as "techno-magic," "mind-blowing brain candy," and a "90-minute visual and aural extravaganza." For a more detailed discussion of the show's technical underpinnings, *Mix* talked with sound designer Miles Green



FOH engineer Jody Elff is using automation to control presets for Cadac and Yamaha mixers and four Harmonizers.

only the sound designer of record (Anderson and long-time collaborator and electronics designer Bob Bielecki also had significant input), but also appears onstage as a supporting character, Falling Man. "When we started the show I didn't know what my role was going to be," recalls Green, who anticipated he would be co-mixing FOH or taking care of playback chores. "When we first got the Crown [PM311 headset] mics, I put one on and

tried it out onstage and sang one of

BY CHRIS MICHIE

—CONTINUED ON PAGE 126

Building Bridges

Photos by Steve Jennings

Text by Chris Michie

The 1999 Bridge School Benefit Concerts

Organized and hosted by Pegi and Neil Young, the annual all-acoustic benefit concert for the Bridge School has become one of the most anticipated and rewarding concert events of the fall calendar. Held over two days in late October at the Shoreline Amphitheater in Mountain View, Calif., the 1999 shows gave audiences an opportunity to see a stellar lineup of artists performing both favorite and less familiar songs in often surprising collaborations.

Tackling this complicated production for the first time, Sound Image (Escondido, Calif.) set up an FOH position with three 48-input Yamaha PM4000s, all routed through a fourth 24-channel PM4000, which served as the primary "event desk." Three 56-input Whirlwind snake systems, labeled A, B and C, fed the FOH boards and three Ramco SX-1 monitor consoles onstage and provided transformer-isolated splits for video and recording trucks. P.A. was a QSC Powerlight-powered ACE G5 system, and onstage monitors were a mix of G2 single-12 and Sound Image 2x12 wedges. Several artists brought their own in-ear systems.

"The most difficult part of the production was the prep work," says Sound Image audio stage manager Rick Stanley, who developed comprehensive mic patching charts for the nine scheduled acts with Dave Lohr, Neil Young's engineer. Thanks to careful planning, each act was assigned dedicated input channels, allowing each mixer's settings to remain undisturbed from soundcheck through multiple set changes. "We effectively ran the FOH position as a 150-input console," explains Stanley. "Some doubling up was necessary when Smashing Pumpkins added an extra drum kit, but otherwise everyone kept their own channels. The hardest part was figuring out the choreography," he laughs, referring to the multipin connector switching among A, B and C snake systems.

Most acts brought their own FOH engineers, with Sound Image's Rich Davis taking up any slack and keeping between-set announcement mics, video feeds and other inputs live on the 24-channel PM4000 event desk. The event desk also hosted Neil Young's harmonica, vocal and acoustic guitar inputs, enabling him to join any band's set in progress. Bob Delson and Mark Humphries managed the monitor systems, and John Tompkins and Christian Walsh handled all stagebox patching chores. ■



Emmylou Harris



Tom Waits



Roger Daltrey



Billie Joe Armstrong of Green Day



Roger Daltrey and Eddie Vedder



Neil Young, Pegi Young, Eddie Vedder and Sheryl Crow



Neil Young



Eddie Vedder, John Entwistle, J. J. Arment (bass player for Pearl Jam), Emmylou Harris, Neil Young, Roger Daltrey, Sheryl Crow



Roger Daltrey and Eddie Vedder (both right) join Neil Young's band



Lucinda Williams, Emmylou Harris, Neil Young



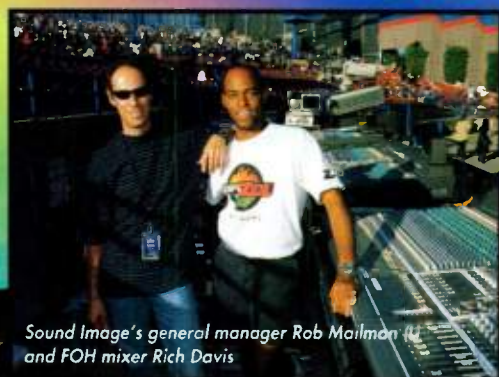
Sheryl Crow



Eddie Vedder



Billy Corgan
of Smashing Pumpkins



Sound Image's general manager Rob Mailman
and FOH mixer Rich Davis



Sheryl Crow (in boa) joins Brian Wilson and band



Pete Townshend

**If you'd like a world class
large-diaphragm
condenser mic but don't
want to spend \$1000.00
You'll Love The
MXL 2001**

- 1" gold Diaphragm
- 30-20 kHz
- 130 Spl
- 80 dB S/N
- 200 ohm Balanced transformer output
- Heavy duty metal construction



- Comes complete with mic stand adaptor*
- 50mm x 190mm

* Shown w optional heavy duty shock mt

Available thru dealers worldwide
www.mars-cam.com

Tel: 310-390-6608
Fax: 310-391-8926
sales@mars-com.com

Pro-Audio Div.
Marshall
MXL Condenser Microphones
MOGAMI wire & cable

CIRCLE #115 ON PRODUCT INFO CARD

Studio [Buy Direct]



- for popular mixers
- expandable chassis
- padded armrest
- multi-access bridge
- steel leg sets
- built-in rack space

workstations

- universal chassis design
- padded armrest
- low profile monitor bridge
- steel leg sets
- built-in rack space
- optional finishes



rack enclosures



Call for a free product guide
(800) 427.5698
Outside U.S. (573) 346.8549

ARGOSY
www.argosyconsole.com

CIRCLE #076 ON PRODUCT INFO CARD

LIVE SOUND

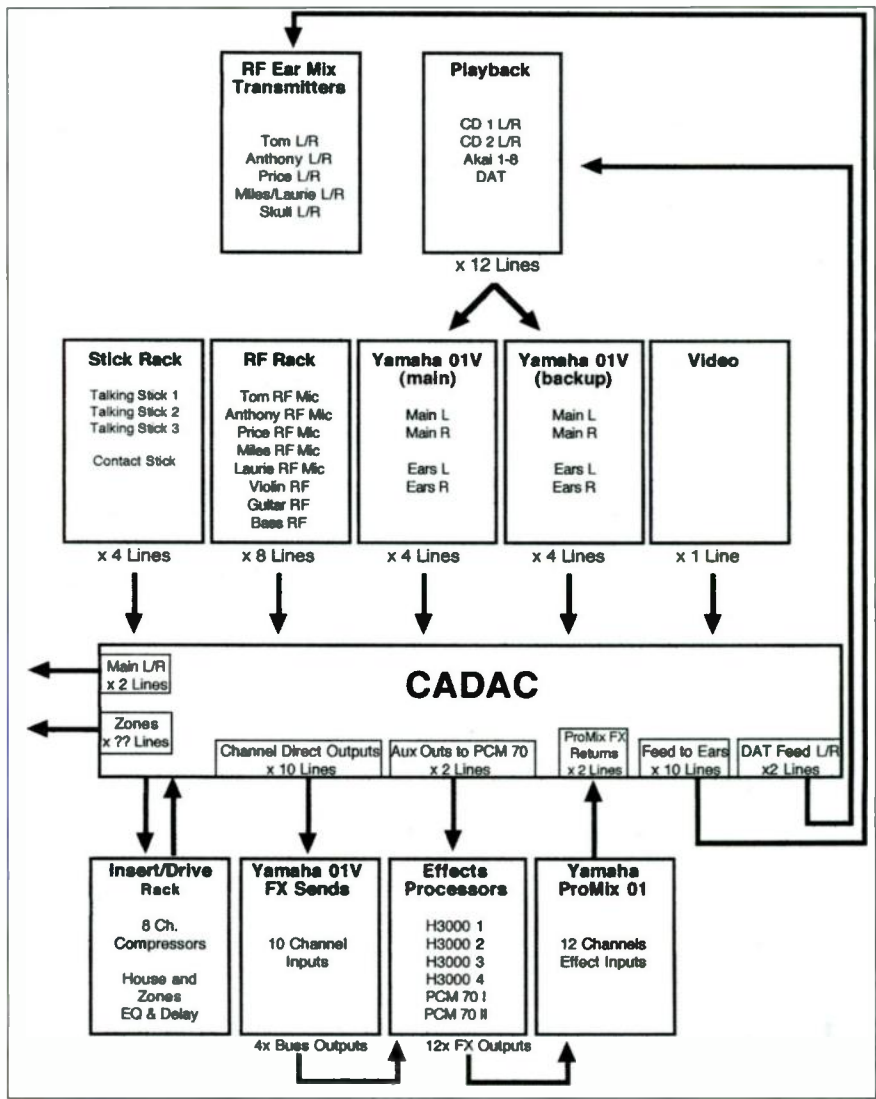
—FROM PAGE 123, *MOBY DICK*
the songs from the show. Laurie was so excited—she said, ‘Would you be in the show?’” Green had already decided to position himself onstage, close to the performers, and had equipped himself with “in-ears” for monitoring the performers’ cues. “So it was very easy for me to cross the line to become a performer,” he explains.

As Green’s sudden recruitment indicates, the production has gone through quite an evolutionary process. “This is the 34th show and is a different show from what we started with,” says Green, noting that major technical and artistic changes were made both in rehearsal and during the first series of road shows. “[Anderson] changes her mind in the process enough that it has to be flexible,” says Green of the resulting sound design, and it was only during a “pretty gruel-

ing” two weeks of technical rehearsal in April that all of the pieces came together full scale.
“I feel that [as a sound designer] I’m really just an advocate for the artist,” Green continues. “I try to work with what she wants. It actually hasn’t been difficult at all to define what is my responsibility and what is hers. As much as she knows about things, she doesn’t keep up with all the latest technology and doesn’t really want to. So I would do research for things that, between the two of us, we couldn’t come up with an immediate answer for.”

THE TALKING STICK

One of the most strikingly original elements of “Moby Dick” is the “talking stick,” a MIDI control device designed as a 5-foot pole about the size and shape of a bladeless oar. Developed by Bielecki and tour sponsor Interval Research of Palo Alto, Calif., the talking stick is equipped with a long-throw poten-



Audio wiring diagram for “Songs and Stories from Moby Dick”

ONE THING THESE COMPETING SOUND COMPANIES DO AGREE ON...



ATK's V-DOSC System

"Our QSC amps are solid and reliable. QSC's PowerLights are a great match for the V-DOSC system. The 9,000-watt PowerLight 9.0s give us a tremendous amount of headroom."

– Scott Harmala, Vice President of engineering
AudioteK/ATK



SE Systems' JBL HLA System

"We've been using QSC power for over 15 years. The PowerLights have really made the difference sonically on our HLA system and we never have to worry about them failing. Our QSC amps never let us down."

– Cliff Miller, President
SE Systems



Carlson Audio's EAW System

"We're constantly running the amps at full power. The overall reliability is great and performance is outstanding. And the fact that the guys aren't worn out from working and stacking the amps is a plus."

– Mark Carlson, President
Carlson Audio



CTS's Turbosound Flash/Flood System

"QSC has once again delivered breakthrough amplifier technology in a unique touring package. From full, tight low end to crisp, clean highs, our Turbosound speaker systems have never sounded better."

– Carl Taylor, President
CTS Audio, Inc.



Sound Image's G-5 Touring System

**"What can I say about QSC?
Great people. Great amps. Unmatched reliability."**

– David R. Shadoan, President
Sound Image

**For more information about QSC products call
(800)854-4079 or visit us at www.qscaudio.com**

CIRCLE #046 ON PRODUCT INFO CARD

They said it best: "QSC is the first choice for touring audio power!"



QSC
AUDIO

Hear the Power of Technology.

tiometer and a modified wireless microphone, which allows it to communicate with a Macintosh G3 computer at the side of the stage. A software patch, written in Opcode's Max object-oriented programming language by Dominic Robson for Interval Research, allows the operator to play audio samples direct from the computer hard drive.

"Drawing your hand smoothly from one end of the potentiometer throw to the other just plays back a sample from one end to the other, forwards or backwards," explains FOH mixer Jody

Elff. Holding one position anywhere on the stick causes a continuous loop of the sample at that point, allowing for a variety of stuttering effects or sustained tones. "It's reminiscent of a project that Laurie did very early on, with a piece of magnetic tape on a violin bow," Green notes. And, as with the magnetic tapes, different samples are loaded for different songs; at one point in "Moby Dick," there are three talking sticks playing at once, each with its own offstage G3. "It's a new instrument, so developing a way that it can be played in an ensemble is something of a challenge," Green says.

EUROPADISK, LTD.

CD REPLICATION

Retail-Ready Packages or Bulk

NEW, FAST - DIGITAL PRINTING!

Booklets, tray cards, J-cards, posters!

- **Vinyl Records**
- **Cassettes**
- **Graphics Design**
- **Graphics Printing**
- **Mastering Studio**

Why deal with brokers when you can work directly with our factory and save? Everything we sell, we make in-house!

Best Service...Best Price...Period.

Free catalog or quote: **(800) 455-8555**

EUROPADISK, LTD.

75 Varick Street, New York, NY 10013 (212) 226-4401 FAX (212) 966-0456

<http://www.europadisk.com>

Major credit cards accepted.

CIRCLE #077 ON PRODUCT INFO CARD

SONGS AND STORIES FROM MOBY DICK

**VISUAL DESIGN, MUSIC,
AND LYRICS BY LAURIE ANDERSON**

CAST AND CREW

Performers

Laurie Anderson....Pip, the Whale, a Reader
Tom NelisAhab, Noah, Explorer
Price WaldmanThe Cook, Second Mate,
Running Man
Anthony TurnerStanding Man
Miles GreenFalling Man

Musicians

Laurie Anderson....violin, keyboards, guitar,
talking stick
Skúli Sverrisson....bass, prepared bass, samples

Artistic Collaborators

Christopher Kondek....co-visual design
Miles Greensound design
Jody Elff.....sound mixer
Michael Chybowskilighting design
James Schuette.....co-set design
Susan Hilfertycostume design
Bob Bieleckielectronics design
Ben Rubinvideo systems design
Anne Bogartstaging co-direction
Julie Crosbygeneral management
Bohdan Bushellproduction manager
Lisa Porter.....production stage manager

Talking Stick Development Team

Bob Adams, Jesse Dorogusker, John Eichenseer,
Dominic Robson, Geoff Smith

PLAYBACK FROM CUSTOM CD

When not appearing onstage, Green oversees several racks of gear at the playback position offstage right. Primary playback devices are two CD players and a 16-track Akai hard disk recorder. "We chose CD over MiniDisc because this show is so much about hi-fi," Green notes. "I also wanted something off the shelf that had been around long enough that it would always work." In addition to cueing playback from custom CDs, Green manages some multitrack cues that are played back and mixed live, chiefly electronic drum beats and other synchronized elements.

Routing all signals through a Yamaha 01V, which stores all the presets for the performers' in-ear monitor cues, Green sends two stereo playback mixes to FOH, one intended for playback over the P.A. and the other a premix for the performers' in-ear mixes, which are also mixed from FOH. "In one case there's a vocal count for the performers onstage," Green explains. "Obviously, we don't want that to go out to the house."

In addition to racks holding Shure Micad wireless microphone receivers and Shure PSM600 in-ear wireless trans-

Introducing a new professional live sound console for people with more sense than money.



SERIES
TWO

If you thought you couldn't afford a fully-featured, professional live sound console with classic 3-tier raked styling, prepare to think again. With prices starting at just \$6500 and 3 frame sizes including 24, 32 and 40 channels, Soundcraft's new Series TWO is a powerful, flexible console from a company with an impeccable heritage in live sound mixing.

Series TWO is equipped with the facilities you need to handle the most demanding shows:

- Three frame sizes: 24, 32 and 40 channel
- Classic raked frame design, with flat fader tray
- Compact footprint
- Wide-range input stage with switchable 48V and Phase Reverse
- Variable frequency High Pass Filter with separate In/Out switch
- Classic 4-band Soundcraft EQ with two swept mids and EQ In/Out switch
- 8 mono Auxes, with Pre/Post fader switching in pairs, and Pre/Post EQ switch
- 8 Group busses
- Left, Centre, Right master mix busses
- Direct Output from each channel with Pre button to allow recording feeds
- Integral meterbridge with LED input and output metering
- Two fully-featured Stereo line inputs as standard
- Four stereo returns with routing, Auxes and 'Tilt' EQ
- 11x2 Matrix as standard
- MIDI mute system: 8 manual mute groups plus 128 MIDI-controllable mute snapshots
- Master section includes SOLO (PFL and SIP), Talkback and 2-track returns
- Separate power supply

www.soundcraft.com

Soundcraft +44 (0)1707 665000

info@soundcraft.com

Soundcraft US 1-888-251-8352

soundcraft-usa@harman.com



Soundcraft

H A Harman International Company

CIRCLE #078 ON PRODUCT INFO CARD

LIVE SOUND

mitters, Green's station includes a second Yamaha 01V and a Tascam DA-88 for backup, plus the various receivers for Anderson's violin, electric guitar and keyboard. A talking stick control rack contains three G3s, which are networked together with Ethernet so that newly edited sounds can be immediately dubbed onto the other two machines. Using the BIAS Peak stereo digital editing application and a CD recorder, Green can edit sound files onsite and burn new CDs whenever the show sequence changes or new songs are introduced. "It's been great having a full digital studio onsite," he notes.

MONITORS MIXED AT FOH

FOH and in-ear monitor mixes are the responsibility of Elff. The master console is a Cadac M Type monitor board, a modular design which allows for a variety of configurations. "In the console setup software you define how the frame is filled, and then the computer knows what to look for when it is linked to the board," Elff explains. "It's a great-sounding console, so clean and quiet."

Primary inputs are the five Crown

PM311 vocal mics, Anderson's violin, guitar and keyboard inputs, plus a stereo pair of inputs for Skúli Sverrisson's 5- and 6-string basses, which he processes and mixes himself onstage. Elff inserts dbx 1066 and 1046 compressors on all the vocal channels, plus violin and guitar channels. Additional inputs from Green's offstage playback center include the three talking stick outputs, a video playback line for two scenes in which the actors lip-sync to a video projection, and playback premixes for audience and in-ear monitor mixes (see audio wiring diagram on page 126).

On the selection of "the Garth Brooks mic," Green notes that, for this show, at least, isolation was of prime importance. "We tried other headset mics, but there is so much vocal processing in the show and so much soft-spoken text that we needed the off-axis rejection from the Crowns," Green says. "The Crown mics are amazing. You can go in front of the speaker stacks to some degree and they won't take off."

MIDI RECALLS EFFECTS SETTINGS

All sound effects processing is done in four Eventide H3000s and two Lexicon PCM70s, with effects sends and returns

managed by Yamaha ProMix 01 and 01V small-format digital mixers. "The Cadac automation software is sending out a MIDI command stream that controls the recalls for the ProMix 01 and the 01V," Elff explains. "Throughout the show I can load settings that always give me exactly the same Harmonizer settings scene to scene for each cue in the show. I'm also transmitting, by way of that same series of recalls, patch changes to all the effects processors. So for each cue in the show I can just hit a recall and all of the effects settings load up exactly the same way every night, and I get the same levels back."

Accurate recalls of Harmonizer settings are particularly important, as effects are intrinsic to Anderson's voice and violin performances. "I consider [Anderson] a virtuoso on the H3000s," Green observes. "It's an instrument that she plays very well. It's used in almost every pre-production track, usually two units at once to get a composite sound. On the violin it's almost always two effects, sometimes three."

Elff admits that, prior to this tour, he was less than expert on the Harmonizer. "I know [the Harmonizer] pretty well just because they show up in racks from

140 DB SOUND
1ST STAGE AUDIO
A TO Z ENTERPRISES
A.V.L. SYSTEMS INT'L.
A.V.P.S.
ABBA TRADING
ABE V. SYSTEMS
ADVANCED AUDIO
ADVANCED AUDIO & LIGHT
AERO SOUND
AFFORDABLE SOUND
AFRIKAN ROOTS
ALABAMA SHAKESPEARE FEST.
ALLIED AUDIO SERVICES
ALL STAR AUDIO
ALL STAR SOUND
ALTEL SYSTEMS, INC.
AMERICAN ELECTRIC CONTROL
AMERICAN PRO AUDIO
ANDREW STAGE & SOUND
ANDREWS AUDIO
APPLIED DIGITAL
ARCH ANGEL CONCERTS
ARROW AUDIO
ARSENAL SOUND
ASR PRO EVENTS
AUDIOACTIVE PROJECTS CORP.
AUDIO EVENT SERVICES
AUDIO FORCE
AUDIO PRODUCTIONS
AUDIO SPECTRUM
AUDIO TECHNIQUES
AUDIO VISIONS
AUDIO WEST
AUDIOMATION
BAKERSFIELD COMM. CHURCH
BANANA SOUND
C-TEK SOUND
CABLETEK ELECTRONICS LTD.
CARL'S MUSIC
CARLSON AUDIO
CARLTON CAREY EVENTS
CASCADE SOUND
CBS TELEVISION
CHRYSLER AUDIO, L.L.C.
CHURCH OF THE OPEN DOOR
CLASSIC CASES
CONCERT PRODUCTION
CONNECTICUT AUDIO & THEATRICAL
CRIED
CROSSROADS AUDIO
CRYSTAL TAYLOR SYSTEMS
D.B. SOUND
DALLAS BACKUP
DAMON GOLD
DAMRON PRODUCTIONS
DAVID KERSH BAND
DB SOUND SYSTEMS
DECEBELS SOUND & LIGHT
DESIGN EFX REMOTE
DIGITAL SERVICES
DIRECT SOUND
DISNEYLAND
DMW SYSTEMS
DOLBY LABORATORIES, INC.
DONOVAN AUDIO INC.
DOWLEN SOUND
DUNAMUS LIGHT & SOUND

DYNACOUSTICS
E.O. SOUND
E-TECH SYSTEMS INC.
EAGLE AUDIO & LIGHT
EASTERN STAGE PRODUCTIONS
ECHO AUDIO PRODUCTIONS
EIGHTH DAY SOUND
ELECTROTEC PRODUCTIONS
ELECTROTEC/NASHVILLE
ENTERTAINMENT SOUND
EP SYSTEMS
FAB-3
FETTER PRODUCTIONS
FIDELITY SOUND
FIRE HOUSE
FIRST STAGE AUDIO
FLAG SYSTEMS
FLORIDA TECHNICAL SERVICES
FRANKIE VALLI
FRESNO CONVENTION CENTER
FULL SAIL RECORDING
FUTURE SONICS
G & G LEASING
GALLANT MOBILE RECORDING
GAMBLE ASSOCIATES
GAND CONCERT SOUND
GARRETT SOUND & LIGHTING
GARY BARLOUGH
GMS AUDIO
GOAD INTERNATIONAL
GOODMAN AUDIO SERVICES
HARPO STUDIOS
HI-TECH AUDIO & LIGHTING
HORN AUDIO
I-MAG
ICB AUDIO
IN CONCERT PRODUCTION
J.K. SOUND
J.L. AUDIO SYSTEMS
J.R. SOUND CO.
JACK LINK ASSOCIATES
JAMM-BUDO PRODUCTIONS
JASON SOUND
JEAN MARC LIARD
JOSEPH PRODUCTIONS
KIAN CONCERT SOUND
L.J. PRODUCTIONS
LATITUDE SOUND
LE MOBILE
LES COOLEY
LIL' RED SOUND & RECORDING
LING AUDIO PRODUCTIONS

HAPPY NEW YEAR...

To all our friends throughout the years. We thank you for the opportunity to do business with you and wish you great success in the millennium. Cheers!

LIVE SOUND SERVICES
LOCAL ALLIED AUDIO SERVICES
LOUD & CLEAR, INC.
M.P. PRODUCTIONS, INC.
M.P. SOUND
MARC, INC.
MARTIN HEALEY PRODUCTIONS
MARYLAND SOUND
MAVCO
MAXX PRODUCTIONS
MD SYSTEMS/CLAIR BROS.
MEETING SERVICES INC.
METROPOLITAN OPERA
MIDCOM
MIDDLE HOUSE
MINNESOTA PUBLIC RADIO
MIRROR IMAGE STUDIOS
MOORE P.A. HIRE
MSC SYSTEMS
MSI JAPAN
MUSICANVAS
N.B.C. TELEVISION
N.B.S. MUSIC TECH
NAKED ZOO PRODUCTIONS
NASHVILLE CARTAGE & SOUND
NATIONAL AUDIO
NELSON SOUND
NEP, INC.
NOMAD PRODUCTIONS
NORTH METRO FELLOWSHIP
NORTH STAR PRODUCTIONS
OJ PRODUCTIONS
ON CUE
ON STAGE AUDIO
ON TRACK PRODUCTIONS
OPTI-CASE
ORDWAY MUSIC THEATRE
OWEN AUDIO
PAC AUDIO
PACIFIC WEST SOUND
PETE BLAUSON
POWER AUDIO
PRAGMATTECH
PRATT SOUND
PREFERRED SOUND
PRO MEDIA S.S.I.
PRO AUDIO RENTAL SYSTEMS
PRO AUDIO SYSTEMS
PROMIX
PROSHOW U.S.A.
PRO SHOW RENTALS LTD.
PRODUCTION SERVICES, INC.

PROFESSIONAL SOUND & RECORDING
PYRAMID LIGHT & SOUND
QUICKBEAM SYSTEMS
R & R AUDIO
R & R SOUND SERVICES
R.O. SOUND & COMMUNICATIONS, INC.
R.S. ENTERTAINMENT
RAD AUDIO
RADIO CITY PRODUCTIONS
RAVEN RENTAL
RDA SYSTEMS
RDT SOUND ENGINEERING
RELIES SOUND INC.
RIVER CITIES SOUND INC.
ROCK CITY SOUND INC.
ROCK STREET MUSIC
ROCKY MOUNTAIN SOUND
RONDELLI MUSIC
ROXY THEATER (ATLANTA)
RSA AUDIO SERVICES
RTH GROUP
S.K. SYSTEMS INC.
SABINE
SANDY BLYTH SOUND
SATURN SYSTEMS
SCAVENOR SOUND INC.
SCHUBERT SYSTEMS GROUP
SEE FACTOR
SEISMIC AUDIO
SGA PRODUCTIONS
SHAPED MUSIC
SHEFFIELD AUDIO & VIDEO
SHORT AUDIO CONCEPTS
SHOW CO.
SIGNAL PERFECTION LTD.
SIMS MUSIC & SOUND
SISTER HAZEL
SLAMHAMMER SOUND, INC.
SHOW SOUND
SOLO SOUND
SOLO TECH
SONY TELEVISION
SOS PRODUCTIONS
SOUND BY FITCH
SOUND ART
SOUND CONCEPTS
SOUND FORCE
SOUND GARDEN
SOUND LOGIC
SOUND OF AUTHORITY
SOUND ON STAGE
SOUND S.W.

SOUND SERVICES
SOUND SERVICES, INC.
SOUND WAVE AUDIO
SOUNDS GREAT
SPEEDA SOUND
SPENCER JACKSON
STAGE KATZ
STAGE TECH INC.
STAGE TECHNIQUES
STAGELITE SOUND
STAGING TECHNIQUES
STATE OF NEW YORK
STEPHENS SOUND SERVICES
STIRLING AUDIO SERVICES
SUBSTANTIAL SOUND
SUPER HT PRODUCTIONS
TAURUS PRODUCTIONS
TECHNORICS
TECH SERVICES GROUP
TECHNOTRIX
THE CHINA CLUB
THE EMOTIONS
THE SOUND ROOM
THIRD EAR SOUND
THORNAPPLE SOUND
THUNDER AUDIO
THUNDER STRUCK PRODUCTIONS
TNT SOUND
TRI MEDIA
TRI-STATE FELLOWSHIP
TRIPLE S
TRUMP TAJ MAHAL CASINO
TY HERNDON
U.S. ARMY FIELD BAND
U.S. AUDIO CO.
ULTRA SOUND
UNIVERSAL STUDIOS (ORLANDO)
UP WITH PEOPLE
WASHINGTON PROFESSIONAL
WEINLEY AUDIO SYSTEMS
WEST COAST SOUND
WEST INDIES SOUND & LIGHT
WESTBURY NATIONAL SHOW LTD.
WESTWOOD ONE RADIO, INC.
WILLIAMGERARD PRODUCTIONS
WIREWOKS CORP.
WIRE TECHNOLOGIES
WIZZARD SOUND
WORLD AUDIO

Thanks Everyone!

RAMTECH INDUSTRIES INC.

800-817-2683 / 352-466-0920

www.ramtech.net

This will be the most imitated speaker on the market.

Again.

Eighteen years ago, Meyer Sound rocked this industry by introducing the most sophisticated loudspeaker yet--The UPA-1 featuring the first trapezoidal cabinet (US patent # 271,967) and the first professional loudspeaker with dedicated control electronics*. It was eventually imitated by almost every other loudspeaker manufacturer.

Today, the Self-Powered UPA-P radically improves upon its classic predecessor by perfecting every aspect of loudspeaker design: High SPL, low distortion, high efficiency, linear response, precise coverage, consistent performance, and unbeatable convenience.

The new UPA-P is a revolution. Only the progressive thinking and uncompromised engineering of Meyer Sound could produce a system this powerful, this flat, this compact.

Flat phase response +/- 35 degrees from 600Hz to 16 kHz. Great response for a studio monitor, unheard of in a high power PA product... until now.

An integrated, powerful 2-channel amplifier for over 1000W peak power (350 Watts/channel). No amp racks, no complex and costly wiring, less truck and storage space, faster installation time.

133 dB peak SPL at one meter.

A new constant directivity CQ™ horn, the culmination of years of research in our own anechoic chamber, guarantees the most accurately defined high-frequency coverage (Pat. pend.)

Only 77lbs total weight.

An Intelligent AC™ system that automatically adjusts to the operating AC line voltage from 80 to 265 VAC.

CE and UL Approval.

Do the math. The Self-Powered Ultra Series is surprisingly affordable and costs substantially less than conventionally amplified systems.



UPA-1P

The Self-Powered Ultra Series

*You owe it to yourself
and your business to hear this system.*



CIRCLE #080 ON PRODUCT INFO CARD

Meyer Sound Laboratories, Inc. - 2832 San Pablo Avenue - Berkeley, CA 94702-2204 - (510) 486.1166 - fax (510) 486.8356 - www.meyersound.com

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

Learn Audio Recording

Like nowhere else.



All students train, hands-on, in cutting edge 48-track Analog/Digital Recording studios that feature:

• SSL • Otari • Amek
• Neotek • Studer • Neumann

PLUS...

• Mac G3/TASCAM Digital Lab
• StudioMaster Mix Down Lab
• Individual Pro Tools Work Stations
and Much Much More

1-800-562-6383

2300 E. Broadway Rd., Tempe, AZ 85282



CONSERVATORY OF
Recording
Arts & Sciences



Award winning professionals teach no more than 12 students per class.



Only recording school authorized by Avid Digidesign to teach Pro Tools Courses 135 & 235.



Every student is trained on Pro Tools & completes an internship in the industry for graduation.

CIRCLE #081 ON PRODUCT INFO CARD

LIVE SOUND

time to time," Elff says. "[But] to the degree that they're used in this show, I've never done before. But the user interface is very friendly. That rack of Harmonizers is [Anderson's] and have come right out of the studio with her own settings already in them. That's something that she's really got down. She's got it to a place that's really uniquely hers. It's more than just setting a particular switch on the Harmonizer, it's all about the way she uses her voice with the effect." Effects outputs are returned to the Cadac from the ProMix 01 as a stereo pair. "Because it's all the heavily processed stuff, the fact that the signal passes through a couple of smaller consoles is not an issue," Elff notes. "All the source material comes through the Cadac, which sounds great."

Elff is actively involved in the FOH mix—"There are a number of cues that I do during the show as manual, real-time cues based on the actors' pacing and speech," he says—but all of the show's many sound effects and sound treatments are programmed as 55 snapshots, which Elff simply recalls in sequence. For one section, in which the Ahab character taps his crutch on the floor, the tapping signal is Foleyed off-stage with a "contact stick" by system technician Chad Scheer. "We had a stick with a contact mic in it for the original choreography, but, because of an accident earlier in the run of the show, crutches were introduced and became part of the choreography," Elff explains. "We're having Bob Bielecki work on a crutch with a contact mic built in."

Though the Cadac is designed primarily as a monitor console, Elff does little actual monitor mixing. "The in-ear mixes are pretty static," he says. "We'll set up in each house, and if anybody needs a little more or a little less during the first evening's sound-check, we'll make adjustments. But once we get settled in to each venue it seems to be pretty much stable." Setting up the P.A. feeds is actually more challenging, Elff says. "Because it's a monitor console, [the Cadac] gives me great flexibility with the ear mixes, but at the same time, it's a little bit less practical for an FOH application." Nevertheless, Elff has worked out a system for deriving additional P.A. feeds from a monitor bus and assigns extra P.A. outputs and record feeds via the console's output matrix. "Given the nature of the show, the M-Type was the right choice," he says.

Listen. Hear.

- Sales/Rentals
- Complete Systems
- Customized Fit
- Audiologist Network
- Hearing Protection

Concert, Theatrical, Media, Film,
Video & many more applications!
Triple Platinum H.E.A.R.® Affiliates
Talk to us about your system!



EAR MONITORS
FULL RANGE

EM²
DUAL DRIVER

Full Range or Dual Driver Design • Wireless & Hard Wired Systems
Global Service & Support • Upgrade Pre-Existing Systems
From The Innovators of The Technology

Hear what you've been missing!

FUTURE SONICS (877)FSI-EARS
Outside the U.S. (215)598-8828
sales@futuresonics.com
www.futuresonics.com
INCORPORATED
CIRCLE #082 ON PRODUCT INFO CARD

©1998 Future Sonics, Inc. All Rights Reserved.

AVALON

PURE CLASS A MUSIC RECORDING SYSTEMS

Emily Lazar

Mastering Engineer
"The Lodge" Studios, New York.

"I love my Avalons!"

I rely on the AD2077 Mastering Equalizer for its incredible depth and elegance. It is the most versatile EQ I've ever used. The integrity of the stereo image is both wide and true and the tonal range is extraordinary. I can achieve great control in the bass, while keeping the midrange smooth and precise... and the high end air seems to go on forever!

When I need color and super-fat compression, I turn to my VT-747SP. It gives me the flexibility of choosing whether I want to add the tube signal path or not... and that extra little EQ rocks!

Avalon truly sets the pace...
absolutely brilliant!"



VT-737SP Mono vacuum tube preamplifier, opto-compressor and discrete, Class A four-band equalizer. Unlimited rich sound loaded with sonic character, ideal for direct to tape, DAW and digital recording. \$2,295



VT-747SP Stereo vacuum tube opto-compressor with LF and HF spectral side-chain control, discrete Class A six-band program equalizer and tube bypass. Excellent for stereo buss compression, audio sweetening and mastering. \$2,495

AVALON  DESIGN

P.O. Box 5976 San Clemente, CA 92672 USA

Tel: 949-492-2000 • Fax: 949-492-4284

www.avalondesign.com

STUDIO MANAGEMENT SOFTWARE

STUDIO SUITE

#1 Choice of Top Studios!

NEW! 4.0

YOUR LOGO HERE

Mac / PC • Networkable • Relational

office studio tech

Contacts	Production Orders	Sessions	Rooms
Calendar	Invoices	Tape Library & Labels	Equipment Inventory
Media Inventory	Recording Budgets	Songs & Track Sheets	Maintenance Log
Bar Codes	To Order	Recall Sheets	Patchbay Labeler
Events & Alarms	Help	Sample Library	Part Stock

Setup Open All Open Preferred About Set Menu Log Out

by **AlterMedia™** **Call: 1.800.450.5740** get a FREE demo at
 International: 1.770.303.0970 **www.studiosuite.com**

CIRCLE #084 ON PRODUCT INFO CARD

ANNOUNCEMENT

CD of 100 Free Sound Effects

- No Cost - No Obligation
- Production Ready
- From The Hollywood Edge Library
- No strings attached
- For working sfx pros only

Available Now - Call
1-800-292-3755

www.hollywoodedge.com

"Best Sound Effects Library without a doubt," - Oliver Stone

"Excellent," - Martin Scorsese

"Kicks Butt!" - John Hughes

CIRCLE #085 ON PRODUCT INFO CARD

LIVE SOUND

EAW SPONSORS TOUR

Apart from the P.A. system, all the sound equipment for the tour is rented from Firehouse Productions in Red Hook, N.Y. Tour sponsor EAW (Whitinsville, Mass.) supplied the house P.A. system, which includes KF755 and KF750 full-range cabinets. "The 755 is designed more as a downthrow box," explains Elff, who arranged the stacks with the KF750s on top and the KF755s below. For low bass, the 750/755 system is augmented with EAW KF940 subwoofers, which also served as speaker risers at Zellerbach Auditorium; a pair of slightly modified Firehouse F12s served as front fills. (Elff also tied into the house system, which consists of flown Meyer Sound MSL-3s.) System amplifiers are all from Crown, EAW 8600 processors provide crossover and speaker management functions, and Elff uses a BSS Varicurve for overall system EQ.

For system setup and analysis, Elff is running Metric Halo's SpectraFoo on his Macintosh laptop. "The EAW system doesn't need a whole lot of tweaking; they're nice-sounding cabinets, and they cover the house pretty well," Elff says. "One of the challenges of this show is the placement of the P.A. because of video projection issues. We don't necessarily have the option to put the P.A. in the most ideal place for coverage, because they would end up in the way of the projectors. Also, we don't always have the option to fly the system. We've been carrying a lot of rigging hardware with us that's only been used once because there aren't physical rigging points."

Commenting on the computer-heavy production, Elff says, "We've got at least ten G3 laptops on the tour. All the video playback is from hard disk, controlled by a G3 laptop. It's a real joy to work this way because we can all cue up in a flash." And, despite the technical complexity of the show, both Green and Elff seemed fairly relaxed. "All the audio gear on the show has performed really well," Elff says. "We had a Harmonizer go out on us while we were in rehearsal, but Eventide fixed it and turned it around in a day for us. At this point there aren't many 'fixes' going on, the show's pretty much running and is comfortable, and is tremendously fun to do each night." ■

Chris Michie is a Mix technical editor.

the ultimate console
the ultimate speaker system
the ultimate deal from
the world's #1 factory direct music store

CARVIN
TCS
TOURING CONCERT SYSTEM

The TCS Touring Concert Systems:

- Provide Studio quality from 80 to 130dB with tremendous power handling!
- Transparent-controlled highs & solid bass
- Quick-Link™ system for easier fly set-ups
- Best performance value in the industry!

The S/L Studio-Live 8 bus inline consoles:

- Available in 24, 40 and 56 channels
- 8 Aux Sends for effects and stage monitors
- Compact-high performance with more features than any other console in its class!



FREE CATALOG

ORDER 24 hrs www.carvin.com or
Call 800-854-2235 Mon-Fri 6:30 am -
6pm, Sat 9 am - 5 pm PST

www.carvin.com

World's #1 Factory Direct Music Store
Musicians • Schools • Churches • Businesses • Contractors



CIRCLE #086 ON PRODUCT INFO CARD

For pros who have a real ear for music, an eye for perfection, and the desire for total luxury,
Kurzweil is proud to introduce the K2600

Production Workstation brand new
for model year 2000 available now.



This is not your father's Kurzweil. It is the Workstation you have always dreamed of: Smarter, Quieter, Cleaner, Friendlier, Hipper, Phatter, and Stronger.



More complete, more expandable, more flexible. Stunning new Sound Set - you must experience to believe. Options are now user installable.



Compatible with all K2500 sounds and CD-ROMs; the largest library in the world.

**A new synthesizer for a new century of sound & music
available in 76-key, 88-key, and 3-space rack**

Test drive one now at your authorized dealer

KURZWEIL®
...It's the sound

CIRCLE #087 ON PRODUCT INFO CARD

P.O. Box 99995, Lakewood, WA 98499-0995 telephone (253)589-3200 fax (253)588-6809 see your authorized dealer or visit our website at www.youngchang.com/kurzweil

fully equalizing and aligning them with the mains can add more perceived power. Cleanly extending the lowest octave is one of the last great challenges to accurate sound reinforcement.

THE TALENT KNOB

Many live sound engineers are familiar with the experience of listening to the tape of a loud show, only to find that what had seemed like a good performance was in fact plagued by out-of-tune instruments and off-key singing. Though the deficiencies of such live recordings are often blamed on the necessarily incomplete nature of board tapes—we are talking about “sound reinforcement,” after all—this only explains problems with mix balance or EQ. Critical bandwidth, the ability to discern tone or pitch within a range, is affected by high SPLs and, as a result, many singers will pitch slightly flat in loud environments.

This extra reason why louder sounds better is also a barrier to improving the performance. If you've been in search of the missing “suck” knob, here it is. As volume increases, what might have

sounded out of tune or off-key now sounds okay. The widening of critical bandwidth makes it harder to discern tones that are close to each other when it's louder. Similarly, cramped rehearsal spaces can give false impressions. Another example is garage bands that go from clubs to larger venues and have trouble getting their sound right.

OTHER TOOLS

Another mechanism at work is the masking of one frequency range by another that is proportionately too loud. In the frequency response of a sound system, smooth peaks are preferable to sharp ones. It is increasingly understood that graphic equalizers do not have sufficient precision for smoothing out the response of sound systems. Their controls fall at fixed intervals on standard ISO frequencies, unlike the system's response peaks, which—surprise!—rarely match the ISO marks. In the course of setting individual channel EQ, you often see many of the same boosts and cuts across the board, which simply act as corrective adjustments to the system EQ.

If a system is optimized for a smoother response with precise parametric filters, perhaps the best use of a

graphic is to quickly re-contour the P.A. to help its response at louder levels. In fact, this is how you find the best mix engineers using their graphic during a show. All EQ is subjective.

Perhaps a more precise system EQ tool for mix engineers would be a set of filters centered at frequencies where human audio perception changes with different sound pressure levels (with additional facility to compensate for increased component distortion at higher levels). It is worth noting that we are now seeing crossovers on the market with dynamic filters available on each output, and a few live engineers already use a mastering EQ across their mix bus.

GO ON, MIX

Last but not least, the amount of headroom in contemporary sound systems has become a panacea for a multitude of sins. All of the previous suggestions may not have as much of an impact as a good, active mix. Move the faders, feel the force, Luke. In the past, engineers were forced to mix around the limits of their systems. Back in the days when mixers brought elements up *and then back down*, hundreds instead of thou-



audio composite engineering

Unique
Unique ... Durable

Light
Lightweight ... Carbon

... Advancing the Art
of Concert Audio

www.audiocomposite.com 760.741.3787

within these walls
the high definition
digital sound of
tomorrow will
come alive

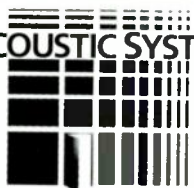
inside
these walls
the acoustic
technologies
of tomorrow
provide
guaranteed
isolation
levels in
modular
panels

modular construction is to concrete walls
what digital sound is to 8 track audio

ACOUSTIC SYSTEMS

800-749-1460

www.acousticsystems.com



The science of silence

CIRCLE #090 ON PRODUCT INFO CARD

LIVE SOUND

sands of watts were sufficient for quality sound. Today we often see the insertion of many channel compressors in attempts to create a console that mixes itself. It's not unusual to find younger engineers "mixing" without touching the faders.

A static mix must be higher in volume for all its elements to be heard. Employing an active mix, as an alternative to simply achieving a balance where everything is heard equally, can help the show sound better at a lower volume. What would happen if the lighting guy just turned all the lights on? Organize the order of your input list so that individual channels can be turned up AND down without taking your fingers off other faders. As a last resort, you could try using your VCAs to mix. Eight fingers, eight faders. Cool, huh?

One final thought: You have heard the show hundreds of times, know all the words and need something extra to make it exciting, but your audience may have different needs. Try mixing for them.

WHAT?

Now all this may fall on deaf ears. Sure, I know some of you are already damaged goods, but it doesn't have to get worse. Some of the best engineers have hearing problems and manage to compensate. The important thing is to manage your daily exposure so it doesn't get any worse. It is possible to have a loud show that isn't damaging. Recently I was the system tech at an outdoor show with a headliner whose engineer had mixed top arena rock bands for years. When the sound cop finally showed up halfway through the set, he was forced to turn the volume down 10 dB. Because of outstanding engineering skills and mixing chops, the show sounded just as good at this lower level, perhaps better. I've heard this year's lack of sell-out shows attributed to everything from high ticket prices to competition from entertainment alternatives. Is it possible that the decline of tickets sales in an otherwise growing economy can be attributed to disgruntled concertgoers? A quarter-million tiny hairs suspended in fluid, winding through the coil of the inner ear. This nonrenewable asset is our most precious resource in the concert business. ■

Mark Frink is Mix's sound reinforcement editor. He can be contacted at mfrink@teleport.com.

PROJECT STUDIO EXPERTS



WORLDWIDE DELIVERY

The Largest Selection Of The Best Products In The Business



- ▶ DIGITAL & ANALOG MULTITRACKS & CONSOLES ▶
- ▶ EFFECTS, MONITORS, MICS & PRE-AMPS ▶
- ▶ KEYBOARDS, GUITARS & ELECTRONIC PERCUSSION ▶

CALL NOW

800-264-6614



OUTSIDE U.S.- 860-442-9600

FAX: 860-442-0463

CARUSO MUSIC

94 State Street • New London, CT 06320 USA • E-mail: sales@caruso.net • http://www.caruso.net

CIRCLE #091 ON PRODUCT INFO CARD

because **not** all discs are created equal

In a market that's cluttered with CD-R brands, shoppers might be forgiven for believing that that one disc is pretty much like another. But that's simply not the case. With its Certified Plus CD-R discs, TDK is proud to offer the only line of media designed and manufactured to meet rigorous Certified Plus quality standards.

The TDK Certified Plus Difference

TDK's Certified Plus quality assurance program is an extension of the company's corporate-wide commitment to zero-defect quality. It is a Certified Plus mandate that all TDK CD-R discs excel in three key performance areas: **compatibility, durability and reliability.**

The all-encompassing Certified Plus program involves every aspect of the CD-R manufacturing process. As part of the program, TDK requires that each CD-R disc is tested to the most exacting standards, with 100% inspection of every disc before it leaves the factory. All TDK Certified Plus CD-R discs are manufactured in ISO-9002 production facilities and are required to perform far in excess of Orange Book Part II industry standards.

TDK CD-R Means 100% Compatibility

Compatibility has always been a key issue in the CD-R business. Today, TDK offers the first truly "universal" media capable of operating flawlessly in every brand and speed of CD-R writer and playback device, including the latest high-speed 8x CD writers as well as future generations of even higher-speed writers.

Key to its All Speed™ writing compatibility is the use of a newly developed IsoPure recording dye. This super-sensitive metal-stabilized cyanine material creates perfectly formed data marks on the disc, free from the irregularities that can

TDK All-Speed Certified Plus CD-R Achieve Lowest BLER



translate into data errors and high jitter levels. An additional benefit of IsoPure technology is the long-term stability that enables TDK Certified Plus CD-R media to achieve an astounding archival storage rating of more than 200 years!

TDK Certified Plus CD-R discs also utilize a new Reflex Mirror Tuning Technology that uses the superior reflectivity and hardness of pure silver to achieve higher reflectivity than previous CD-R media. In addition, a new double layer protective system featuring a hard protective coating provides a tough, high-impact shield that is more than 50 percent more resistant to physical damage than previous CD-R media.

Superior Performance

Reflecting the company's commitment to Certified Plus quality standards, TDK recently commissioned Compact



TDK 80 minute/700MB CD-Rs
DATA MUSIC



50-piece CD-R cakebox

Disc Consulting (CDC), an independent testing agency, to assess the overall quality of eight leading CD-R brands. Together these brands represented more than 90% of all CD-R sold in the U.S. TDK is proud to announce that its CD-R media outperformed all competitors.

One of the most important tests conducted by the CDC was to determine the Block Error Rate (BLER), or the average number of data errors generated over a ten-second period. It is a widely accepted fact that to ensure compatibility across all drives from all manufacturers, old and new, the lower a disc's BLER, the more likely it is that a disc can be read reliably in all those drives. After rigorous testing, TDK came out on top – with the lowest BLER of all eight brands tested.

Superior Convenience

TDK offers its Certified Plus CD-R discs in several convenient configurations. For day-to-day recording use or any low-volume application, TDK offers individual discs in jewel-case packaging with a choice of label surfaces: our standard surface disc with TDK logo (easily labeled with a felt-tip marker pen) and a shiny silver blank-surface disc designed for silk-screen label printing.

For larger volume applications, the ideal choice is TDK's 50-piece CD-R cakebox. The space-saving cakebox holds 50 blank shiny-surface Certified Plus CD-R on a spindle support. The replaceable plastic cover keeps the discs in factory-fresh condition, ready for any recording or duplication project.

www.tdk.com

CIRCLE #092 ON PRODUCT INFO CARD

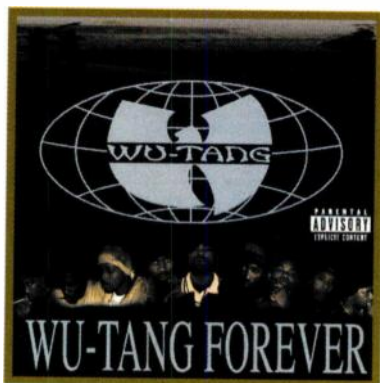
RECORDING NOTES

STAYIN' ALIVE

CARLOS BESS ON
WORKING WITH
WU-TANG CLAN

by Dan Daley

Many recording artists make the newspapers for record and concert reviews and personality profiles. A few go on and make the gossip and celebrity columns as well, for their marriages, divorces, affairs and the occasional punch-out with the doorman or a drunk autograph hound. But Wu-Tang Clan, whose Platinum record sales have made them modern rap legends, also manage to make the front pages on an alarmingly regular basis. Russell Jones—a.k.a. Ol' Dirty Bastard—is one of the core Wu-Tang rappers (the group has nine main members, including producer RZA, but the Clan's numbers are nebulous and can include posse members), and he is a rapper



with a serious rap sheet. There have been assaults, shootings (he's been shot twice!), numerous arrests and assorted controversies that have, unfortunately, taken away some of the limelight from Wu-Tang's combustible music.

Studio owners in New York City know Wu-Tang.



Carlos Bess in front of the custom Dynaudio/C12 142dB "Wall of Terror" at 36 Chambers

Several have indicated that they no longer take bookings from the group. That was a significant contributing factor to the group's decision to set up their own studio on West 37th Street in Manhattan, named 36 Chambers after one of their records. It's located in two of the rooms that once operated as Skyline Studios, which closed three years ago, and it's fitted with New York's only Amek 9098 console.

"I won't say that that stuff didn't happen," says Carlos Bess, Wu-Tang's engineer since their first album, and he acknowledges that the number of studios available to the group in New York was dwindling. "But a lot of studio owners just don't know how to handle them. They don't know how to handle rappers in general."

Bess is 29 and was brought up on Manhattan's Upper West Side, coming of age as an engineer around the same time that hip hop did. His was not the trendy world of the pricey hangouts along West End Avenue, or of the exclusive Dakota coop on West 72nd Street and Central Park West. Still as ominous as ever, not even an ex-

terior sandblasting can wash away connotations of *Rosemary's Baby* or John Lennon's murder. Bess' world was more like the one over on West 99th Street and Amsterdam Avenue, in the city park that the homeboys have called Rock Steady Park for two generations. When Bess was barely an adolescent, he remembers that he had to stay within a couple of blocks of his home on West 84th Street. "Go a block or two off that and you get your ass kicked, you know what I'm saying?" he recalls. "You remember the [gang] movie *The Warriors*? It wasn't as crazy as that, but it was guys from the Bronx and Brooklyn and Queens and it was about territory. There was a lot of warring for territory in those days. That's how people established themselves within the groups. By warring."

According to Bess, though, in the late '70s and early '80s, break dancing, rapping and graffiti tagging became outlets for aggression and competition between crews. Soon, graffiti-covered subway trains were synonymous with New York City itself, hot-shot break-dancers could be

—CONTINUED ON PAGE 150

JASON MILES PAYS TRIBUTE TO WEATHER REPORT

by Gary Eskow

Professional associations with the likes of Miles Davis, The Crusaders, Michael Jackson, Whitney Houston and Brian Setzer would tame the ambition of many musicians, but keyboardist Jason Miles, whose reputation as a synth programming whiz early in the MIDI era led to gigs with a group of stellar musicians, wanted more. The grueling pace of session work and understanding that the job of a programmer is to develop a tool set that others will use creatively led Miles to expand into production, where he could set the pace, select material (including some of his

leafy, upstate New York community. Here he writes, arranges and mixes his work, including his latest recording, *Celebrating the Music of Weather Report*. When *Mix* caught up with Miles, the last nuances had been applied and he was preparing for his next endeavor, a tribute to his friend and colleague, Brazilian composer Ivan Lins. Lins' work may be underappreciated by the average North American music fan, but a roster of major-label talent, including Sting, Dianne Reeves, Grover Washington Jr. and Michael Franks are already onboard to help Miles increase his visibility.

The Weather Report tribute will be released on Telarc in February. "I've always loved Weather Report," Miles says. "They were a huge influence on me and many other musicians. I responded most to their probing, exploring way of working; they had a freedom of expression that is often lacking today." Which begs the question: How do you re-

joice in musical freedom and record a CD that stands a chance of finding a place in a current market that is more delineated (read: restricted)?

"Well, that's the question!" Miles quickly replies. "Let's put things in sequence: In 1998 I got a call from Jay Beckenstein of Spyro Gya. He was making a solo record and wanted me to produce several

tracks—he's got his own studio, BearTracks, in Suffern, N.Y., which is not far away from me. I like to work with sounds and music from other cultures, so I picked out an African tune for him to record Weather Report's 'Black Market.' I came home and started working on an arrangement of the tune, and I liked the fact that Jay told me to make it sound like me without trying to reproduce the original recording. I put chanting into the chart, and some samples that you wouldn't normally associate with that piece—sort of the Year 2k version of the tune!

"During our work on this track, we realized that no one had done anything with the music of Weather Report. Jay prodded me to get something going, and so I put together some demos at my place and started shopping the project. Naturally, I was turned down by every label I approached. Fortunately, almost every artist I approached—Mike Brecker, David Sanborn, Omar Hakim, Cyro Batista—said they wanted to participate, and so I kept pushing. Then one day I got a call from Tom Jung up in Connecticut. He'd heard my demos and said he thought he could hook me

up with a label.

Three days later Telarc called, and the deal fell into place smoothly."

Miles arranged and produced all 11 cuts on the album, which includes classic Weather Report tunes like "Birdland" (featuring hot-as-can-be jazz guitarist Chuck Loeb), "Palladium" and "Harlequin." "I like to think that I'm capable in these areas, but I also didn't have a million-dollar budget, so I took on as many responsibilities as I could handle myself," Miles notes.

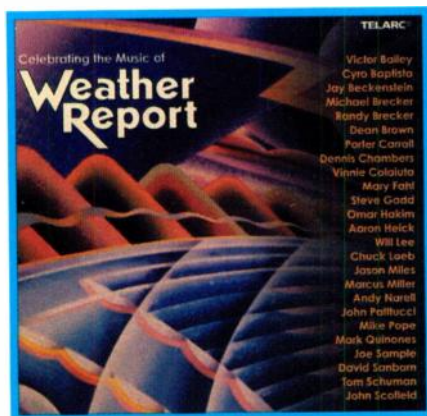
The pre-production process was exhaustive and nonstop. "I closed myself in my basement for four weeks arranging the record—14-hour days spent putting MIDI tracks together. My wife wouldn't even let me step out of the house to pick up the mail because I was unshaven and unkempt!"

As you would expect, Miles has an extensive synth rack, which includes a

—CONTINUED ON PAGE 154



PHOTO ELEONORA ALBERTO



own compositions), and do more playing and arranging. His production credits include work with Vanessa Williams, Michael Brecker and Heavy D.

Miles operates a project studio out of his home in a

THOMAS DOLBY'S "SHE BLINDED ME WITH SCIENCE"

by Tim Morse

The creator of this month's quirky Classic Track from 1983 was born Thomas Morgan Robertson on October 14, 1958, in Cairo, Egypt (he's the son of a British archeologist). He became intrigued with music and technology at a young age, and by the time he was 18, he was building his own synthesizers. Robertson went to college to study meteorology and was nicknamed Dolby by schoolmates for his outside interests, and the nickname stuck. By 1979, Dolby founded the Camera Club with Bruce Wooley, Trevor Horn and Geoff Downes. After leaving that group, he joined Lene Lovich's band and wrote the hit song "New Toy." Dolby continued writing songs for others and producing artists before he began his solo career in 1981. He recorded singles that became minor hits in the UK, and on the strength of that released his first solo album, *The Golden Age of Wireless*, in May 1982.

Dolby remembers that in the songwriting process for "She Blinded Me With Science," "The first thing I got was the title—that sometimes happened with my songs. The next thing that happened was the groove, and then I fleshed it out, partly from the cinematic implications. I started thinking about the video quite early on, and at that point I had put out a couple of singles that had videos associated with them, and I was getting ready to write and direct my own. I was very interested in that genre, so I was thinking cinematically from the get-go. And I had a strong sense that this was the era of Adam Ant and Simon Le Bon and Sting and so on, and I wasn't a poster child in that sense! But on the other hand, the sort of slightly forlorn mad scientist character was somewhat endearing to people and was definitely a part of my personality

and one I probably inherited from my dad, who is the real thing. And so I decided I was going to create a vehicle for that character. And that's what the song and the video were."

Dolby had a sequence running in his home studio and sang over it and put it down on cassette as a demo. Next, he met with prospective producers, and ended up choosing Tim Friese-Greene to help co-produce the song.

"She Blinded Me With Science" and "One of Our Submarines" were both recorded in one week at Mayfair Studios in London. At that time, the studio was equipped with a 24-track analog 2-inch and an MCI mixing board. Most of

trumpet line which, Dolby believes, "subliminally gives it some air, instead of everything being so tight in the same register. In the same way you could use a piccolo or a trumpet in a brass section in unison, but a couple of octaves up."

The sample-and-hold feature on the Moog was responsible for the tinkling bell sounds at the beginning of the song, and the Source also made the descending "phone" part after the chorus. This was achieved, Dolby says, "by putting the resonance all the way up on the filter and turning off the oscillators, so when you play, all you hear is the resonance of the filters. If you double that up, you can tune it to intervals, but it doesn't really play in a precise tonality across the keyboard."

Dolby's drum machine on the track was a PPG unit (originally designed to work Tangerine Dream's light show) connected to a set of Simmons drums. He reports: "It played them in a unique way; it had a short gate time on the voltage it put out, and it made it sound different from the hexagonal pads that were very symptomatic of that era." The PPG drum module allowed the user to tune the playback sample rate, and on "Science" the snare drum was detuned three or four octaves to give it that "cracky" sound. The kick and snare are Simmons, and the cowbell playing on the offbeats was generated from the PPG. The tom-toms are from the Simmons module fed through the bass amp. The output of an Eventide Harmonizer was used for the strange rising and falling pitch at the end of the

song. "Tim Friese-Greene hopped on my rig and programmed a rim shot that he wanted to use as a sound source for a part," Dolby says. "And he probably had to pre-delay it a fair amount, because the Harmonizer added quite a lot of delay."

Dolby's lead vocals (which he terms "theatrical") were recorded using a Neumann U87. There were only two takes of the vocal, one of which was used with no editing. The unusual flanging sound on the backing vocals was actually a result of doubling the vocals (sung by Mutt Lange and Miriam Stockley) with a violin and a synthesizer. Magnus Pyke, who contributed the odd



PHOTO: ©MICHAEL OCHS ARCHIVE/VEINCE CA

"Science" was recorded on synthesizers. A Moog Source synth played by Dolby's bass guitarist, Matthew Seligman, was used for the prominent bass lines. Instead of going direct, however, Friese-Greene fattened up the synthesized sounds by feeding them out to Seligman's miked bass amp in the studio.

The Source was also used for some top-line parts, but the majority of the keyboard parts were played on a Roland JP-4. The ominous-sounding strings were also created on the JP-4, using four tracks two octaves apart, stereo left and right. The horns in the chorus were from the Roland, but the Source was used again for a piccolo

System Two

CASCADE

Analog & Digital Audio Testing



SYS-2522A

The Complete Testing Solution

SYS-2422A System Two + DSP for advanced analog applications:

- ❖ Generates Sine, Sine Burst, Dual Sine, Stereo Sine, Shaped Burst, IMD, Square, Noise, FASTTEST™, Multitone, and many other signals
- ❖ Measures Phase, Frequency, THD + N, IMD, Frequency Response (5 ways), Individual/Group Harmonic Distortion
- ❖ FFT up to 32k length and 4096 averages
- ❖ Analog sine wave residual THD + N ≤ -108 dB
- ❖ MLS and other techniques for acoustical measurements

SYS-2522A Dual Domain with digital I/O and digital audio interface signal generation and measurement:

- ❖ Includes all of the above SYS-2422A features and functions
- ❖ Generates and analyzes analog and digital signals in their own domains
- ❖ Continuous digital sample rate coverage from 8k to 192k
- ❖ Generates and analyzes impaired and normal digital audio interface signals, including INTERVU analyzer with time domain display, eye patterns, histograms
- ❖ Digital sine wave residual ≤ -160 dB (0.000001%)
- ❖ Single and dual connector digital audio interfaces 48/96/192 kHz

Audio Precision designs and manufactures the System Two Cascade and a complete line of other audio analyzers in Beaverton, Oregon USA. Contact our worldwide force of sales representatives for information and on-site demonstrations.

CIRCLE #094 ON PRODUCT INFO CARD

**Audio
precision**

PO Box 2209
Beaverton Oregon 97075-2209
Tel: (503) 627-0832 Fax: (503) 641-8906
Us Toll Free: 1-800-231-7350
Email: sales@audioprecision.com
Web Site: www.audioprecision.com

INTERNATIONAL DISTRIBUTORS: Australia: Yonke Electronics Pty. Ltd., Tel: 39563 7844; Austria: ELSINCO GmbH, Tel: (1)815 04 00; Belgium: Heynen N.V., Tel: 11 600 909; Brazil: Interwaves Ltda., Tel: (21) 494 2155; Bulgaria: Elsinco Rep. Office Sofia, Tel: (2) 958 12 43; Canada: Elsinco Electronics Inc., Tel: (416) 342-6999; China: GELEC (HK) Ltd., Tel: 2919 8368; China, Hong Kong: A.C.E. (Int'l) Co. Ltd., Tel: 2424 0387; S&V Instruments Co. Ltd., Tel: 2833 9987; Croatia: Elsinco Rep. Office Zagreb, Tel: (1) 61 61 61; Czech Republic: Elsinco Praha spol. s r.o., Tel: (2) 4149 0147; Denmark: npi Elektronik aps, Tel: 86 57 15 11; Finland: Genelec OY, Tel: 17 813 311; France: ETS Mesureur, Tel: (1) 45 83 66 41; Germany: Elsinco GmbH, Tel: (0212) 70913-0; Greece: KEM Electronics Ltd., Tel: 1 67 48514/5; Hungary: Elsinco Budapest KFT, Tel: (1) 339 0000; India: Comcon Industries, Tel: 11 6311506; Israel: Dan-El Technologies Ltd., Tel: (03) 521 6487; Italy: Audio Link s.r.l., Tel: 0521 648723; Japan: Toyo Corporation, Tel: 3 3279 0771; Korea: B&P International Co., Ltd., Tel: 2 546-1457; Malaysia: Test Measurement & Engineering Sdn. (Sole agent), Tel: (03) 621 6277; Netherlands: Heynen B.V., Tel: 485 55 09 09; New Zealand: Audio & Video Wholesalers, Tel: 9 279 7206; Norway: LydRommet as, Tel: 22 00 54 00; Poland: Elsinco Polska sp. z o.o., Tel: (22) 832 40 42; Portugal: MRA Instrumentacao, Tel: 1 4217472; Singapore: TME Systems Pte Ltd., Tel: 747-7234; Slovakia: Elsinco Slovensko s.r.o., Tel: 7 6428 4165; Slovenia: Elsinco d.o.o., Tel: 1 62 77; South Africa: Soundvision Mfg. Tel: 11 477-1315; Spain: Alaya Ingenieros, Tel: 91 567 97 00; Sweden: TTS Tal & Ton Studioteknik AB, Tel: 31 52 51 50; Switzerland: Dr. W. A. Gunther Audio Systems AG, Tel: 071 71 40 40; Taiwan: Double Advance Tech., Tel: 2 2590 8896; Thailand: Massworld Company Ltd., Tel: 2-294-4930; United Kingdom: Thurlby Thandar Instruments, Ltd., Tel: (1480) 412451 (8/10/99)bb

speaking parts, used the same miking setup as Dolby. A celebrity TV scientist in the UK, Pyke was a very stubborn and awkward character, and agreed to do the project only after considerable cajoling. Dolby remembers, "When he was working with me in the studio, I would say, 'Dr. Pyke, when I wave my hand you say: "She blinded me with science!"' And on the first few he did; he said, 'She blinded me with science?' And I said, 'That's great, but it's not really a question; it's like an exclamation.' And he goes, 'Yes, but as a known scientist it would be a bit surprising if a girl blinded me with science.' The tape was rolling and that's what leads in the 12-inch. Every time he went to the U.S. afterwards people would come up behind him and yell, 'Science!' And it drove him absolutely bonkers."

Dolby recalls fondly that mixing in those days had a nice liveness to it: "When we ran a mix, there would often be several people in the control room: The tape op had to be in charge of making sure the Revox tape delay was rewound and that it wasn't going to run out of tape in the middle of the take. And somebody else would be monitoring the desk, and his precise job was to switch on channels 1-12, but only after the guitar kicks in, because otherwise you would hear the noise. It was very exciting doing a mix in those days. It was a *performance*. You'd take a deep breath and say, 'Guys, I've got a good feeling about this next one.'"

There was a single marathon session to mix the 7-inch versions of "Science" and "Submarines"; 20 hours later they began working on the 12-inch of "Science" (which is probably the best-known version) and managed to mix it in a mere three hours. Dolby says, "In spite of the constraints we managed to come up with something that sounded pretty good. So, in a way, I get more stimulation out of working within a set of constraints like that than when you have unlimited choices."

Dolby wrote and directed the famous video for the song, which was shot in one day and cost just £10,000. The whole process on the song from pre-production to finished video took a month, and it became a very wise investment for Dolby and his record company—MTV and dance clubs jumped on the song, and it took off quickly on the radio. It became so popular, in fact, that Capitol decided to repackage Dolby's first album, *The Golden Age of Wireless*, with the new tracks. When the album was initially released, it sold

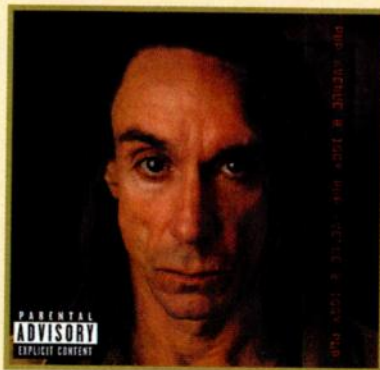
about 40,000 copies; when re-released with "Science," it went to more than 700,000 in its first year. The single shot up the chart to Number Five (U.S.), and the album went to Number 13.

After recording music for many years, Dolby became involved with a group of composers and sound designers creating music for video games and virtual reality systems. Once known as Headspace, the Silicon Valley-based company changed its name to Beatnik this year; Dolby, who now goes by Thomas

Dolby Robertson, is the president/CEO. Beatnik has also been involved in a number of educational programs and recently sponsored a contest, with the Expression Center for New Media in Emeryville, Calif., in which students were given the chance to remix "She Blinded Me With Science," using both new and original elements in different combinations. As Dolby says, "It's kind of music with training wheels. My 4-year-old could do a mix, and it still sounds pretty good." ■

Cool Spins

The Mix Staff Members Pick Their Current Favorites



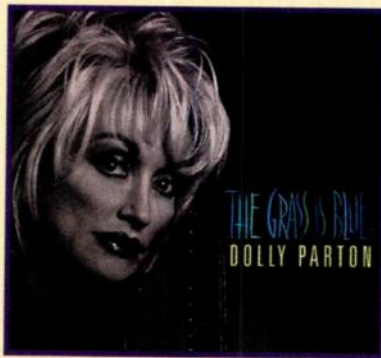
Iggy Pop: *Avenue B* (Virgin)

Sometimes you can judge a book, or a CD, by its cover. This is the case with Iggy Pop's new one, "adorned" with a close-up of the bald-faced, thin-lipped Iggy-ster, disconcertingly direct in his gaze, surprisingly clear-eyed and looking like the farmer in Grant Wood's "American Gothic"—only with long, stringy split ends and accompanied by a "Parental Advisory: Explicit Content" label rather than a shifty-eyed missus. Speaking of which, Iggy's marriage has also come to a split end, and that, along with his 50th birthday three years ago, seems to have led to this wintry meditation of an album.

While former cohort/producer David Bowie is busy recasting himself as an upbeat rock 'n' roller, Iggy gets more serious and poetic, facing his own mortality, failings, frailties and mixed feelings about demon rock 'n' roll. But then Iggy always wanted more—more rawness, and more respect, simultaneously. In the opening spoken-word passage, he talks about finding solace in books and wanting to find "a balance between joy and dignity on my way out. Above all, I didn't want to take

any more shit. From anybody." Strung together with diary-like spoken-word pieces are stripped-down songs such as the rhythmic and crunchy "Corruption," the anxiously rockabilly "Shakin' All Over," the self-important "Nazi Girlfriend," an almost-breezy "Avenue B" (featuring Medeski, Martin and Wood) and a tender "Miss Argentina." Iggy flirts with bad taste throughout, but producer Don Was keeps the tone uniformly restrained, warm and introspective. Recent converts looking for the fancy-free pop of "Lust For Life" will be disappointed by most of Avenue B, but those who want to get intimate with Iggy can party with the original punker—on his terms.

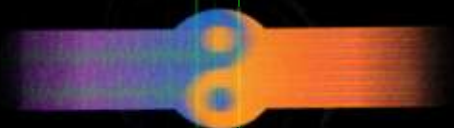
Producer: Don Was. Engineer: Mark Howard. Additional recording and mixing: Ray Martin, Raeann Zschokke, Hal Cragin, Andrew Scheps, Rik Pekkonen, Lance Pierre. Studios: 262 Mott Street (NYC), Teatro (Oxnard, CA), The Theatre (NYC), Ocean Way No. 3 (Hollywood, CA) and The Record Plant (Hollywood, CA) as well as Shacklyn Studios, Studio 12A and Punker Pad West. Mastering: Stephen Marcussen. —Kimberly Chun



Dolly Parton: *The Grass Is Blue* (Sugar Hill)

It's no surprise that Dolly Parton could make a fine album of acoustic string band music; the wonder is that it's taken

—CONTINUED ON PAGE 156



BALANCE OF POWER



96 INPUTS?

76 OUTPUTS?

SMALL FOOTPRINT?

THE ANSWER IS COMING.



Yamaha Corporation of America • 6600 Orangethorpe Avenue • Buena Park, CA 90620 • 714-522-9000 • Yamaha PA Web Site — www.yamaha.com/proaudio

©1999 Yamaha Corporation of America. Yamaha is a registered trademark of Yamaha Corporation. www.yamaha.com

CIRCLE #095 ON PRODUCT INFO CARD

—FROM PAGE 144, WU-TANG

found wowing each other and passers-by on street corners around town, and rap itself developed subcultures in which a war of words symbolized the turf that used to be the focus of violence. Rap was a good metaphor for violence, but as gangsta and other forms of rap ascended, life began to imitate art. The violence from which rap sprang could not be left completely behind.

Bess watched the goings-on in the park. He became enthralled by the DJs who were creating a new art form, scratching out remixes on the spot. He begged his father for a turntable and other equipment. But when he was 11, his parents divorced and the DJ dream died with that separation. Then, in junior high, Bess discovered a latent talent for rhythm. "Everyone used to be banging on decks and tables and on the walls in school," he says. "So after a while I picked up the drums, and I was good at it."

Bess auditioned for the High School of Music & Art, but didn't make it. The system instead put him in a school that was crowded and didn't nurture his sort of talent, so Bess started cutting

classes and hanging on West 48th Street—Manhattan's own Music Row—where Manny's, Sam Ash and other music stores had windows filled with wonder for budding players. "Me and a

**Everyone was like
a rapper or wanted
to be a producer.
No one from the streets
wanted to be an
engineer.
I was kind of different
like that.**

—Carlos Bess

friend from school would go down there every day, 9 a.m., show up and check out the gear," Bess says. "The drum machines. It got to where we were doing demos for the sales depart-

ment. And the guy there dug it 'cause we would be showing him what the boxes could do. I got real good on the Roland RX-15. So they let us hang out all day. I learned like 40 machines in a year. But then they got a new manager, and he kicked us out. So I went over to Alex's [Music], and he let me hang out."

In 1986, Chicago's house music movement started making a dent in New York's urban music psyche. Bess and his own crew—DJ Choco and DJ I/Que—were deep in it. "There was so much new music coming out," he says. "There was Latin hip hop, which was like a real ballady kind of hip hop that they used to play on Hot 97 when it was on 103." Urban radio was establishing loose borders for the hip hop culture, and in a boom-box world, you were what you listened to.

As the music became more machine-oriented, Bess' command of the drum machine started getting him calls for programming sessions. His first recording session was at the venerable Regent Sound, where the studio's by-then-ancient MCI console seemed like an alien technology to Bess. "All I had been seeing up to that time was guys with PortaStudios in their houses," he

THE STUDIO BUSINESS BOOK

Updated Edition!

Revised Ed. by Jim Mandell

**If you need in-depth,
detailed, specific
information on all aspects
of putting together and
managing a recording
studio, then this book is
for you!**

You can order it now!

(#7104X for \$34.95) plus S&H

MIX

PRIMEDIA
Intertec

Call (800) 543-7771

Fax (800) 633-6219

From the U.S.

International orders

Call (913) 967-1719 — Fax (913) 967-1901

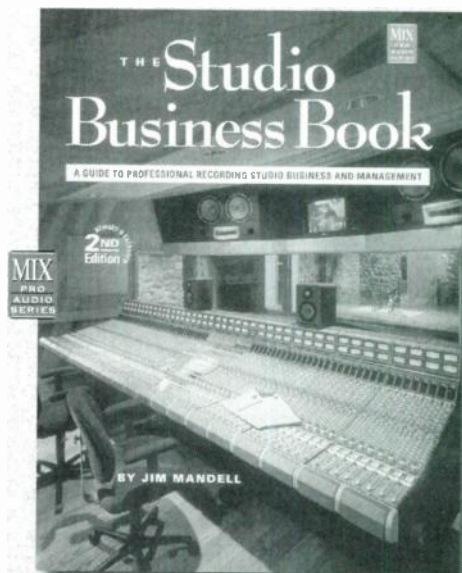
Mail to MixBooks: c/o PRIMEDIA Intertec

9800 Metcalf Ave., Overland Park, KS 66212-2215

Internet — <http://www.mixbooks.com>

This updated edition of the informative, wide-ranging guide presents all you need to know about:

- Writing a business plan
 - Getting funding
 - Buying equipment
- Determining expenses and rates
- Bidding on projects
- Developing new income and contacts
 - Advertising and PR
 - Scheduling
- Managing, hiring, and firing personnel
 - And more



Available from your local
book or music retailer
exclusively through:
Hal Leonard Corp.



CIRCLE #096 ON PRODUCT INFO CARD

HDR24/96. 24-TRACK 24-BIT HARD DISK RECORDING. ADVANCED WAVEFORM EDITING. NO EXTERNAL COMPUTER NEEDED. \$4999 SUGGESTED U.S. RETAIL.



HDR24/96 editing features include 8 takes per track with non-destructive comping, non-destructive cut/copy/paste of tracks, regions or super-regions, drag-and-drop fades & crossfades, 1x/2x/



4x/8x/24x waveform views, true waveform editing with pencil tool, bi-directional cursor scrub, unlimited locators and loops, DSP time compression/expansion, invert, pitch shift & normalize and much, much more... with unlimited undos — but without requiring an external computer!

- Built-in 20-gig Ultra-DMA hard disk plus front panel bay for additional easily available pull-out drives
- Intuitive analog tape deck interface and monitoring
- Syncs to SMPTE, MIDI, Black Burst, PAL & NTSC without extra cards
- Unlimited HDR24/96 linking! Sync 48, 72, 96, 128 or more tracks
- 96kHz upgradable via software
- Uses Digital 8 • Bus I/O cards
- 3.5-inch disk drive for software upgrades & tempo map importing
- Fast Ethernet port built-in
- Optional SCSI port
- Remotes available.

New hard disk recorders were all over the place at this fall's AES convention. A fair amount of the buzz was at the Mackie booth.

The HDR24/96 was the only recorder with built-in non-destructive graphic waveform editing. Just plug in a mouse, keyboard and SVGA monitor to view all recorder parameters on screen in real time. And enjoy complete editing control with unlimited levels of undo, drag-and-drop crossfades with 9 preset combinations plus fade/crossfade editor, DSP time compression/expansion, pitch shift and lots more.

The HDR24/96 was the only recorder that uses pull-out Ultra-DMA hard drives, so affordable that you can keep one for each project — over 90 minutes of 24-track recording time costs less than a reel of 2-inch tape!

The HDR24/96 was the only recorder with built-in 100Mbps Ethernet. And of course the only one that interfaces directly with the Digital 8 • Bus.

No wonder *Pro Audio Review* Magazine gave it a "PAR Excellence" Award right on the spot.

Call toll-free or visit our website for preliminary info on the new HDR24/96. Shipping soon from Mackie Digital.

MACKIE
Digital Systems

www.mackie.com • 888/226-9847

CIRCLE #097 ON PRODUCT INFO CARD



DIGITAL MACKIES
AT OUR FACTORY IN
WOODBRIDGE, VA, USA

record, and he picked up on PARIS quite quickly."

Though he enjoys working in hard disk media, Miles says, "At the end of the day, I want to have pieces of tape that I can hold onto, so all of our work is archived on ADAT tapes. If the worst comes to worst and everything crashes, I know that I can go to any studio and mix. Plus, Telarc is talking about doing a 5.1 mix of this record, and I don't have the setup to execute that here. By transferring all of the material to ADATs, I know that I can go to another studio and do that work at any time."

Miles gets back to the Big Question: "Okay, so how do you take music that was so free and stream it to fit today's marketing standards? I felt that not only the music, but the recorded sound of the Weather Report albums was interesting for the '70s, but that if these compositions were to be successful today they had to be adapted—particularly the grooves—to fit current tastes."

Smooth jazz, the likely outlet for this kind of work, demands pronounced, repeated melodies. "Right, and we took that into account. Back in the day, Weather Report took a more traditional, open head jazz approach to their compositions. The twist they brought was the use of electronic instruments. The kind of blowing they featured doesn't fit into the playlist of smooth jazz stations, and I took this into account as well."

"The first concern was finding a couple of tunes that we could record with integrity and still fit into the radio mentality of today. We wanted a creative commerciality. This is not an artist-driven project, but a concept, and it has to be marketed as such. Chuck Loeb is not only a smoking guitar player, he's enjoying success on smooth jazz stations with his own music, and so the album leads off with an arrangement of 'Birdland' that features him. We're not sacrificing the integrity of the music, just letting it flow into an area that makes sense with the state of the market." ■

—FROM PAGE 148, COOL SPINS

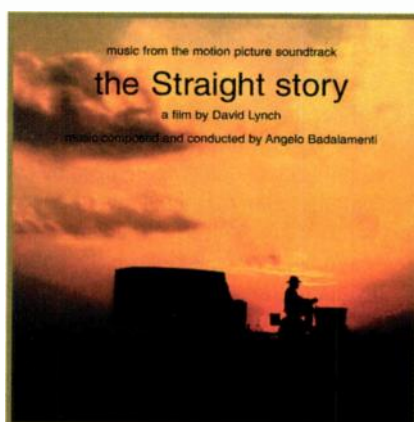
her so long to get to it. On this superb, beautifully recorded outing she fronts a stellar acoustic group consisting of Jerry Douglas on dobro, Sam Bush on mandolin, Stuart Duncan on fiddle, Bryan Sutton on guitar, Jim Mills on banjo and Barry Bales on bass; Alison Krauss is among those helping out on

harmony vocals. The repertoire comes from all over: There's a Lester Flatt tune ("I'm Gonna Sleep With One Eye Open") and venerable songs by the Louvin Brothers ("Cash on the Barrelhead") and Hazel Dickens ("A Few Old Memories"). She tackles the ageless and still mysterious mountain ballad "Silver Dagger" (popularized by the Callahan Brothers in the '30s), and also a Billy Joel song, the lovely "Travelin' Prayer." Interspersed are a handful of excellent Parton originals, including the title tune and the affecting "Endless Stream of Tears." With its mixture of bluegrass instrumentation and old-time harmonies, the CD is a wonderful throwback to simpler times in country music; indeed, to Parton's own East Tennessee roots. Still, most of these songs pack an emotional wallop that makes this project as vital and "contemporary" as anything else coming out Nashville today.

Producer: Steve Buckingham. Engineer: Gary Paczosa (additional engineering by Toby Seay and Chuck Turner). Studios: The Sound Kitchen and The Doghouse (both in Nashville). Mastering: Doug Sax/The Mastering Lab (LA). —Blair Jackson

Angelo Badalamenti: *Music From the Motion Picture Soundtrack "The Straight Story"* (Windham Hill)

An everyday story of a man and his lawn mower, *The Straight Story* is a surprisingly involving film, a gift both for film aficionados and general audiences. The acting and cinematography cry out for award nominations, but director David Lynch's meticulous sound design and Angelo Badalamenti's sensitive score are equally rewarding. Alternating between simple yet effective themes for piano,



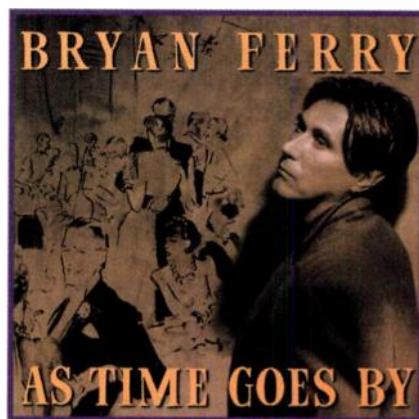
acoustic guitar or country fiddle and quartet and orchestral arrangements in an ambient vein, Badalamenti provides an emotive and supportive score for almost the entire movie—no radio-friendly rockers mar this quiet and dignified collection. As heard in theaters, several of the themes accompany contemplative panoramas of Midwestern wheat fields, visual treats that are echoed by

the stately pacing and pastoral simplicity of the music. Apart from some mildly foreboding synth washes reminiscent of Badalamenti's score for *Twin Peaks*, the overall tone is positive, if restrained, and the 52-minute CD works both on its own terms and as a subtle reminder of Lynch's poignant yet heart-warming film.

Producers: David Lynch and Angelo Badalamenti. Scoring, recording and mixing engineer: John Neff. Mixed by David Lynch. Studio: Asymmetrical Studio (Hollywood, CA). —Chris Michie

Bryan Ferry: *As Time Goes By* (Virgin)

This latest collection of covers is perhaps Bryan Ferry's most audacious artistic statement since his genre-busting solo debut, 1973's *These Foolish Things*. The new set concentrates entirely on songs from a Golden Age of songwriting—three are by Cole Porter, including the priceless "Miss Otis Regrets"—and Ferry plays them completely straight, singing confidently in front of a small



"cocktail" ensemble led by pianist and co-arranger Colin Good. The homogenous song selection—all 15 are from the decade 1928-38—includes several familiar chestnuts, and it is a mark of Ferry's considerable ambition that he tackles sacred cows like "As Time Goes By" from *Casablanca* and "Falling In Love Again," Marlene Dietrich's signature song from *The Blue Angel*. But it is the voice that carries the material, rather than the reverse: Ferry's singing is extraordinarily intimate, and the unfussy mix reveals an unvarnished sincerity and emotional presence that seems almost shocking, given Ferry's history of archly deconstructing iconic works such as "A Hard Rain's A-Gonna Fall" and "It's My Party." A surprising and very welcome comeback from an original talent whose recent releases have tended to disappoint.

Producers: Rhett Davies and Bryan Ferry. Engineer: Mark Tucker. Additional engineering: Sven Taits and Chris Dibble. Studio: Lansdowne Studios (London). Mastering: Bob Ludwig/Gateway Studios (Portland, ME).

—Chris Michie ■

Millennia

Music & Media Systems

HV-3D

Pavarotti
Neil Young
George Benson
Clair Brothers
Celine Dion
Shania Twain
Linda Ronstadt
Andrea Bocelli
The Three Tenors
Streisand Live
Academy Awards
Grammy Awards
MTV Music Awards
Los Angeles Philharmonic
San Francisco Symphony
Cleveland Orchestra
Baltimore Symphony
Louisville Symphony
Houston Symphony
Israel Philharmonic
National Symphony
New World Symphony
Opera La Scala
San Francisco Opera
Hollywood Bowl
Kennedy Center
Paramount Pictures
Skywalker Ranch
20th Century Fox
Todd A/O Scoring
Soundeluxe Scoring
Bruce Swedien
Bob Clearmountain
Walter Afanasieff
Mark Mancina
Frank Serafine
Shawn Murphy
Danny Elfman
Denny Purcell
Hans Zimmer
Walter Becker
Boo Ludwig
Tom Jung
Randy Travis
Keith Jarrett
Bill Bottrell
Chuck Ainlay
David Josephson
Nick Gutzanski
Sony Classical
Telarc International
David Bonitt Remote
Elmore Remote
Harmonia Mundi Records
Disc Makers
R-Sound
Brooks and Dunn
Audio Analysts
Sound Image, and many more...

Ushering in a new Millennium...
with special thanks to our distinguished
and discriminating customers.
For those achieving excellence & timelessness
amidst an era of change.
The HV-3D four- and eight-channel
microphone preamplifier
New look. Same sonic performance.

Transformerless audio path
23 dBu input headroom — no pads required
32 dBu output headroom — high current
Entirely shielded internal power supply
High resolution gain switching (36 steps)
Optional remote gain control
Optional "DC Inputs" — ideal for ribbon mics
Optional DPA (B&K) +130V mic inputs
Constructed for life
Cosmetically appealing
Effortless, lifelike musical
performance at all dynamic
levels & frequency extensions



Millennia Media, Inc.
Pleasant Valley, CA

530.647.0750

Fax 530.647.9921

<http://www.mil-media.com>

CIRCLE #104 ON PRODUCT INFO CARD

—FROM PAGE 158, L.A. GRAPEVINE

Fairchild and Yamaha to AMS and API. The studio decor is different, but the ambience remains much the same. High ceilings and black, gray and silver tones make for classic studio style, and a sense of serenity and order prevails in the control room. One can't help but note that Yoshiki is definitely a perfectionist—even the banks of Apogee converters have been custom-silk-screened to accommodate the color scheme.

The overall control room design has been kept intact. While some structural work was done to fit in the giant console, most of the revamping, by Peterson/LaTouf construction and technical consultant Gary Starr, was done to provide acoustical improvements. Now, Genelec 1035B mains grace the soffits, and a back-wall treatment designed by Starr has made for more even sound dispersion.

"We kept the basic shape, but we made remarkable differences in acoustics with the changes to the speakers and the modifications to the back wall," Dooley says. "There was only one place where you could really hear correctly before, in the center sweet spot. Now, you can sit all the way across this console and hear exactly the same frequency response. And Gary [Starr] did a great thing using Helmholtz resonators; even that bass buildup you'd normally expect to hear when you're sitting on the couch in the back of the room is gone. You sit there and hear the same thing you hear at the console. And the Genelecs are a real improvement. They sound really sweet."

The enlarged central machine room serves a Pro Tools suite and both Studio A and Studio B, which is mainly used as Yoshiki's private composing room. It houses four Sony 3348s, which the complex uses in a unique way, with some special wiring. "We wanted to do 48k/24-bit recording," explains Dooley. "But, for us the 3348HRs didn't quite work. For one thing, they're not really 24-bit unless you use external converters. And, since their tape speed is a lot faster, the rewind time is a lot longer, which didn't fit in with Yoshiki's style of recording. So, what we're doing is bit-splitting with Apogee AD8000SE converters between two 3348s, and it really sounds amazing. We call it 'Multidestination Hi Res.' It allows us to record simultaneously to the 3348 and to the Pro Tools MIX Plus system."

Recent projects in Studio A have included Don Henley and Brooks & Dunn, both with producer/engineer



Coolio and Soundcastle traffic manager Michelle Reiner take a break at Studio One's new SSL 9000 J.

Rob Jacobs, and Ricky Martin, working on a commercial spot for Pepsi with Desmond Child producing and Matt Gruber and Jules Gandar engineering.

Meanwhile, across the hill, the popular South studio stays busy with mixing and overdubbing. In November '98, the Neve 8078 console was enlarged and now boasts 80 inputs and 32 monitor channels fitted with 104 faders of GML automation. In 1999, South played host to such clients as Tracy Chapman with producer David Kershenbaum, Fiona Apple with producer Jon Brion and engineer Rick Costey, and Marilyn Manson with engineer Dave Sardi. The complex that houses the studio, previously home to Madonna's Maverick Records, has now also become part of Extasy. The offices are being used for the newly formed Extasy Records International, which is signing and preparing to record an eclectic roster of talent. And the expansion's not over yet. We suspect a third facility, but the inscrutable Dooley would only say, "There are exciting plans in the works...I just can't talk about them yet."

Renovations are under way at Buddy King's Soundcastle Studios, including the installation of an SSL 9k. Set in the artsy Silverlake district with its lively musical scene, '60s and '70s antique shops, and cool restaurants, Soundcastle just might have the hippest location in town. And, as I discovered on this trip, if you take the 5, it's actually easy to get to.

Entering through the gate on Rowena Street, you notice that the exterior of

the two-room complex doesn't look like any other studio in town. Built by King in the mid-'70s, the multistory redwood-and-glass structures that comprise the facility have an airy architecture unlike the typical recording studio bunker. King, although originally an engineer, is well-known for being an artistic visionary, and the basic design of the buildings reflect that trait, as well as the California style of the period.

A few years ago, King decided to semi-retire to Las Vegas, removing himself from the day-to-day operations of the studio. But, it seems that retirement didn't take—he's back and recommitted to making Soundcastle a player in L.A. To that end, he's refurbishing the complex, beginning with Studio One, where he's replaced the Neve VR with the 80-input SSL 9000 J Series, purchased new outboard equipment and made cosmetic improvements.

On the day I dropped in, chief engineer Thom Roy was readying Studio One for its shakeout session, smiling like it was Christmas morning as he opened boxes of Avalon and Focusrite equipment and installed them in the racks. ("When you don't have enough racks," he laughs, "that's a good problem.")

Roy is thrilled with the console selection: "A 9000 was really the only choice for this room. Something we really like about it is the way it handles the extremes; it sounds great on both strings and on grinding, in-your-face power music. I never thought we'd see those two worlds together, but this console can do both of them."

George Newburn and Jackie McNaney of Studio 440 consulted on the new bronze-and-mahogany color scheme and wall treatments for the control room and the expansion of the glassed-in entry porch into a larger lounge. "I love the existing architecture," Newburn says. "We wanted to do something that went along with the era."

"Working with George from 440 is interesting," King muses. "Sometimes he's almost like a psychiatrist. One of the things I like about the process with him is that he's very sensitive."

King says it was time to invest in the studio. "Recently, spurred on by a friend's comments, I realized that it was time to either put some money into the studios or to get out of the business entirely," he explains. "And I've always felt that spending five or ten thousand on a Band-Aid is just throwing your money away."

New studio traffic and client services manager Michelle Reiner reminded me

EXPERIENCE EXTASY.

The studios formerly known as **ONE ON ONE RECORDING** and **BROOKLYN RECORDING STUDIO** are pleased to announce a new name, a new look, and a continuation of the same tradition of sonic excellence, leading edge technologies and client service.

EXTASY RECORDING NORTH

**5253 LANKERSHIM BOULEVARD
NORTH HOLLYWOOD CA 91601
PH 818-761-3882 FAX 818-761-0949**

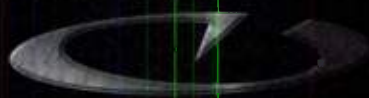
104 INPUT SSL 9000 J SERIES CONSOLE
LARGE TRACKING ROOM WITH 4 ISO BOOTHS
NEWLY RENOVATED CONTROL ROOM.
EXCELLENT SELECTION OF CURRENT AND CLASSIC
MICROPHONES AND OUTBOARD GEAR
FEATURING OVER 100 NEVE MIC PRE'S AND EQS
PRO TOOLS MIX PLUS SYSTEMS - 32 CHANNEL PRO CONTROL
RARE VINTAGE SYNTHESIZERS / AVID EDITING SUITE



EXTASY RECORDING SOUTH

**8000 BEVERLY BOULEVARD
LOS ANGELES CA 90048
PH 323-655-9200 FAX 323-655-0947**

CUSTOM 80 INPUT NEVE 8078 WITH GML MOVING
FADER AUTOMATION SYSTEM
GREAT OUTBOARD GEAR SELECTION
SONIC SOLUTIONS MASTERING SUITE



EXTASY RECORDING STUDIOS

CIRCLE #105 ON PRODUCT INFO CARD



"This is a Great School!"

Trina Shoemaker: LARW Graduate & Winner of
this year's GRAMMY for Best Engineer of the Year
"The Globe Sessions"—Sheryl Crow



Call for a catalog today!

5278 Lankershim Boulevard, North Hollywood, CA 91601

818-763-7400

<http://idt.net/~larw>

of the classic albums that have been recorded at Soundcastle, including projects by The Jacksons, Earth, Wind & Fire, Tupac Shakur, REO Speedwagon and Stevie Ray Vaughan.

"Soundcastle offers artists a creative environment where they can fully express their music, regardless of style," Reiner comments. "We feel it is very important that all artists feel welcome and at home at the studio."

On the day I visited, Coolio was ensconced in Studio Two working on his latest release with guest vocalist James Ingram and engineer Gabe Chiesi. Other recent projects have ranged from rap to rock, with artists including Mar J. Blige, B.B. King and Sean Lennon, as well as producers and engineers Keith Crouch, Booker T. Jones III and Michael Schlesinger.

Further remodeling is in the works, with upgrades and a possible console change planned for Studio Two (currently equipped with a 72-in SSL 4000 Plus). And yes, the forward-thinking King does have other projects in the works—at this point, mainly a companion dubbed PictureTalk, which he says will develop "musical programming for interactive post-production."

Fax L.A. news to 818/346-3062 or e-mail MsMDK@aol.com.

Absorbers and Diffusers

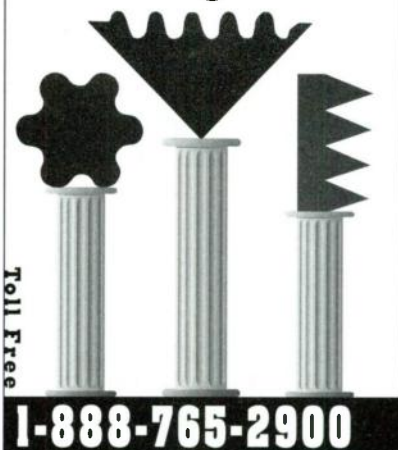


AcousticsFirst™...for materials that "look as good as they sound."

We've always considered our products to be museum quality. Now we know.

Museums, from forestry to the fine arts, have chosen our absorbers and diffusers to improve their sound and maintain their look.

Let us add your facility to the growing list of recording studios, churches, conference centers, and others who have discovered that our objects d'art can make them "look as good as they sound".



1-888-765-2900

Acoustics First Corporation

2247 Tomlyn Street
Richmond, VA 23230-3334 USA
Fax: 804-342-1107

E-mail: acoustics@i2020.net
Web: <http://www.acousticsfirst.com>

—FROM PAGE 158, NY METRO REPORT

him, just as he was about to head into Sterling Sound to master his latest recording, a trio album with bassist Larry Grenadier and drummer Bill Stewart.

"I'm one of the original Synclavier guys, and I hung in there with the system for a long time," he says. "Why? There are things about it I've never seen duplicated anywhere else—it's the sound quality in particular. The warmth of NED's sampled voices has never been touched. Remember, NED was trying to compete with Studer, not some yet-to-be-invented sampler. The level of connectors and internal wiring they used was superb, and no money went unspent, even on the details of electricity.

"A lot of the new boxes give you 128 voices in a single-rackspace unit, but something is sacrificed in terms of the richness of sound," he continues. "I predict that over the next ten years or so you'll see some companies returning to the standard of producing superb Class A-quality parts for synthesizers."

So Metheny held on to his Syn-

CIRCLE #106 ON PRODUCT INFO CARD

—FROM PAGE 159, PROJECT STUDIO

born the same day, same year and we're both drummers," says Staub. He shares a September 27, 1962, birthday with Simins, who throws in: "We have a similar vision. It's kind of a religious experience."

That preternatural friendship sustained the pair while they worked for the past two years on their latest project, in between Simins' touring commitments and Staub's work with Everlast and Run-D.M.C. The as-yet-untitled recording (which will be released in March by Grand Royal) picks up where the pair left off with *Butter 08*, which featured the Blues Explosion and Cibo Matto and production by Staub. The record includes sample-fueled, hip hop-inflected dance numbers as well as trad rock and acoustic ballads written, performed and programmed by Staub and Simins, with contributions by Beastie Boy Mike D, former Luscious Jackson keyboardist Vivian Trimble and Skeleton Key's Rick Lee.

For most of the project, the duo retreated to Staub's Astoria, N.Y., project studio, Astoria Lounge, where the engineer can be found when he isn't working at Greene Street Recording, Chung King or RPM. Amid the blue paneling and '50s decor of the basement studio, the pair have remixed or done pre-production for singles by Stereolab, Luscious Jackson and Asian Dub Foundation. The garage that once housed two cars is now a live room. The tile bathroom also gives good live sound, and the 30-by-25 control room, which is on a separate circuit, does double-duty as the laundry room for Staub's living quarters upstairs.

Staub seems to have crammed a lot of gear into the space. It houses a full-blown 24-bit Pro Tools MIX Plus system with Logic Audio Platinum, a Mark of the Unicorn digital timepiece, and a MIDI Timepiece II. He also owns a Tascam DA-98, an Akai 4-track hard disk recorder, as well as a Mackie 16-channel 1604 mixing console. Other equipment includes Avalon 737s, JoeMeek and dbx compressors, a DX72, Juno 106 sound modules, a Roland JV880 and Genelec 1030 monitors.

Since Staub is a drummer, it's not surprising he has a few tricks up his sleeve when it comes to remixing rhythm tracks. "A lot of times when I do a mix for someone and I don't like the drums, I'll sample the drums that are there and make them work more to my liking," he says. "I always like to make sure the drums are hitting hard, sound big."

He also got a rep for mixing rock and hip hop. Must be his Libran sense of judgment. "I think the trick is just finding the right balance between all the elements. You just do it until it feels right," he says. "I also think I'm very good at taking a track that has a lot of material, picking and choosing what to use when and where."

—Kimberly Chun

clavier and lived with its limitations—primarily the primitive sequencer that came with it. "I'd look with incredible envy at friends who had Logic and other sequencers," Metheny recalls. "The control on the input side of data kept pulling me to change my way of working, but until the MOTU 2408 and a computer that could handle recording lots of tracks and multiple plug-ins came together as a viable package, I stayed with the Synclavier."

So it came to be that in the waning days of the 20th century, a Macintosh with a 330MHz CPU was begat. Metheny purchased one of these towers, and his work method was altered forever. "Once I decided to make the move to native recording using the MOTU 2408, I had to decide on a sequencer," he says. "The choice came down to Logic or Digital Performer, and after looking at both, I realized that DP was more in

tune with the way I work. Logic was attractive because of its more detailed timing resolution, but the latest DP release obliterates that distinction."

Metheny says his model remained the all-in-one approach of the Synclavier: "When I got the G3, I was amazed at its speed. Like everyone else, I spent about three weeks troubleshooting the system, worrying that there weren't enough slots on the machine, trying to figure out how to interface video, and so on. You see, I immediately had a project to work on, the soundtrack album to Sigourney Weaver's new film, *A Map of the World*. I had to be able to score to picture right away."

Although Metheny tracks guitar and MIDI synth parts at his project studio—they do end up on his scores and albums alongside live overdubs—he does not plan on mixing at his place. "I've worked with Rob Eaton over at Right

COME TO THE STORE  FOR ALL THE MUSIC GEAR YOU CRAVE

www.sweetwater.com

CIRCLE #107 ON PRODUCT INFO CARD

JANUARY 2000, MIX 163

Track for years. I don't pretend to be a mixer," he says. "The way I worked on this recent film score required that I bring my computer over to Right Track with super-clean audio on it. If the tracks sounded inferior—when we dropped to the studio's Sony 3348 through their Neve Capricorn—compared to the over-dubs we went on to record, the process would have been a failure."

Worth noting is the fact that Metheny has no console in his studio. "I go right from Avalon preamps into a MOTU 1224, their new front end to the 2408," he says. "It has better converters than the 2408 itself."

So, how did the audio recorded to his G3 using the MOTU equipment stack up against the material tracked at Right Track? "Very, very well," Metheny says. "The real test came on the new trio record... These sessions were recorded directly onto a Sony 48-track HD recorder using Right Track's Capricorn. We then laid off individual guitar and bass tracks, plus a stereo drum pair, to my computer using MOTU's 308 box—it offers AES connectivity, which the 2408 itself lacks. I edited these tracks at my place, and we dumped them back to the 3348 for mixing. No one, including Rob, could hear any difference between the original audio and the tracks that had been offlined and edited on my G3. I realize that we were simply making digital transfers back and forth, but having that capability without degrading the signal at all is a tremendous benefit. The money I saved editing in my studio pays for the complete MOTU package, which is kind of amazing to think about." ■

E-mail New York news to scribeny@aol.com.

—FROM PAGE 159, NASHVILLE SKYLINE

and the Gatlin Brothers. Foster signed them, produced their records and, in general, rattled Nashville's cage. That iconoclasm gained him little sympathy in the 1980s, when a series of bad investments led to the loss of the label (the catalog is now owned by Sony) and much else.

Monument had its own studios in Nashville, and—like Norbert Putnam, that other gentleman outlaw who built a pop music empire under the noses of Music Row—Foster launched his vision of what Nashville could be.

I got to talk to Foster a couple of years ago while researching a book, and as the proverbial lion in winter, he

remained feisty. Always fascinated by country music, Foster began working as a regional sales rep for Mercury Records in 1954 when country was being challenged by defections to rockabilly. On a trip to Texas in 1956, Foster reported back to Mercury's Nashville chief of marketing that, while one Mercury country artist had sold 52 copies of a single at San Antonio's largest retailer, Carl Perkins' "Blue Suede Shoes" had sold 15,000 units in ten days. Foster's boss didn't want to hear about it. "He calls me back and says I'm a traitor, that I'd fallen in with the Indians and the Mexicans, and what the hell was this rock 'n' roll stuff anyway?" Foster said. "I quit on the spot."

But it was Roy Orbison who put Foster and Monument on the map. Publisher/producer Wesley Rose, owner of Acuff-Rose Music, brought the Texas singer to Foster in late 1959, mainly, Foster said, because he knew he had something in Orbison but wasn't sure where he fit into country music. Orbison had been produced by Chet Atkins on RCA, but with little success. "Wesley said I could have Roy for Monument on the condition that I make him sound the way Chet did on RCA, because Wesley liked that sound, even if it didn't sell records," he recalled.

Foster met Orbison on the first session in the studio in Nashville, and Foster was still chafing at Rose's dictum about how the records should sound. He kept looking for a song he thought could be a hit, visiting publishers but coming up empty. Orbison had played "Only the Lonely" for him earlier, but Foster said its structure was too awkward, with the chorus initially consisting of only that line coupled with a 32-bar verse, and it was longer than the conventional country or pop song at the time. He had also played "Come Back to Me, My Love" for Foster, whose instincts about song choices showed an analytical side. "Trouble was it was a teenage death song, too much like 'Teen Angel,'" he recalled. "And you can only have one teenage death song every 20 years. But there was this vocal figure on it, and one morning at breakfast it came to me that if we put that into 'Only the Lonely' we'd have a hit. So I walked over to Roy's room at the Anchor Motel downtown and knocked on his door and told him. He wasn't sure it would work, but we wound up cutting it a day or two later over at the RCA Studios." It went to Number 2 in 1960 and launched Orbison's career.

Foster used Nashville's studios, publishers, songwriters and musicians, but

he used them differently, spending an entire day on one or two songs and planning the sessions carefully in advance, rather than just relying on choosing a good song and counting on the musicians to come up with a fast arrangement. Foster was increasingly using musicians from both Muscle Shoals and Memphis. The R&B-style players from those cities were more receptive to his way of making records, and eventually he convinced some of those musicians to come to Nashville permanently. "The old guard down here was trying to do four songs in three-hour sessions," he said. "I looked at Motown, where they had a house band which went into the studio and stayed there all day until they came up with something everyone was happy with. I wondered how the hell we were supposed to compete with Motown."

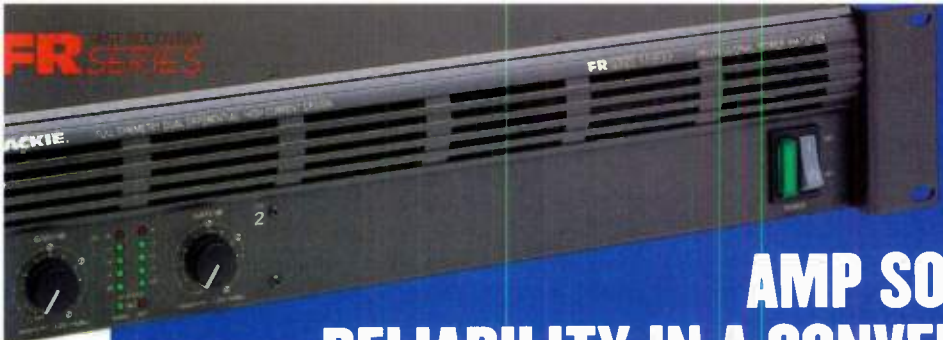
"I started out doing two songs a session and got down to doing one per session pretty quickly," he continued. "I couldn't get a regular band in Nashville until the Memphis guys got here, so I just went in and kept doing takes until I thought it was right. Not everyone connected with those sessions liked that... The studio was costing me money, so I always knew what I wanted when I walked in. But we still took as long as I thought we needed to, and I listened to any suggestions the musicians had. I do remember, though, that for 'Pretty Woman' we even went into the studio knowing the guitar lick ahead of time." Nonetheless, he remembered, "Wesley [Rose] told me I was ruining Nashville. And he wasn't the only person who ever said that to me there."

Foster and Nashville did not always see eye to eye, but by developing pop artists in Nashville he helped broaden the city's music industry. And Foster engendered tremendous loyalty from his artists. Even as Monument's ship was sinking, its hull rent by an unrelated financial deal gone bad, artists like Dolly Parton and Kristofferson stuck with him and tried to revive the label's flagging fortunes.

"I was always considered an outsider in Nashville, and I always considered myself to be that, too," Foster summed up. "It was always cliquish and resistant to change. And ultimately with what's going on now, it may wind up like New York or L.A. I hope not, though, 'cause it's a real friendly place."

Get well, Fred. ■

E-mail Nashville news to danurwriter@aol.com or fax 615/646-0102.



NEW M-800.

SAME FR SERIES™

AMP SOUND QUALITY AND

RELIABILITY IN A CONVENIENT SNACK SIZE.

Our M-1400i has become one of the best-selling power amplifiers in America¹. Now you can get the same clean sound, bullet-proof reliability and wealth of system enhancing features in a new slightly "smaller" size. The M-800 joins the mondo M-2600 to provide you with a complete family of FR Series High Current Power Amplifiers. Visit your nearest Mackie Dealer and check out the best watts-per-dollar amp line in the galaxy.

M-800

800 watts
@4 ohms bridged
550 watts
@8 ohms bridged
400 + 400 watts
@2 ohms stereo
275 + 275 watts
@4 ohms stereo
140 + 140 watts
@8 ohms stereo

Keeps on cranking when "wall socket" voltage is as low as 90 volts (due to brownouts or very long, thin extension cords).

Outputs: 1/4" jacks plus 5-way binding posts spaced for standard banana plugs.

Switchable "soft knee" limiter helps maximize SPL's without over-driving your PA cabinets (or the M-800).

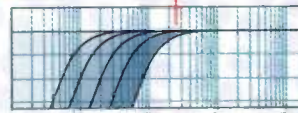
Quick switch configuration for stereo, mono or bridged output.



Inputs: Balanced/unbalanced 1/4" TRS jacks and XLRs plus XLR THRU for easy "daisy-chaining" to M-1400s, M-2600s and other M-800s.

LED display with output level ladder, signal present, overload & channel status.

Detented gain controls calibrated in both dB and volts.

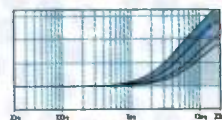


Variable low-cut filters can dramatically improve your PA system's low-end

response by cutting frequencies below the bass cabinets' minimum tuned frequency. 12dB/oct., variable from "Off" (0Hz) to 170Hz.

Built-in variable CD horn EQ.

Constant directivity horns achieve wide dispersion at the price of reduced high frequency response. The M-800 lets you restore lost treble or just add some sizzle to your PA system's top end.



Generous front panel intake gets its cooling air from the room instead of from inside a hot road case.

Other cool stuff that our overworked art department can't figure out how to draw a red callout line to...

- Short T-Design cooling air paths for smoother thermal gradient.
- Mirror-polished heat exchanger maximizes heat transfer & reliability.
- Fast-Recovery circuit design lets you drive the M-800 into clipping without audible distortion.
- 5-Year Transferrable Warranty.



M-2600: 2600

watts @ 4 ohms bridged • 1300+

1300 watts @ 2 ohms stereo • 24dB/oct. subwoofer crossover with 3 selectable frequencies • XLR thru outputs have selectable full-range, & crossover low / high outputs • Neutrik® Speakon® and 5-way binding post outputs • Forced-air T-Design cooling

©1999 Mackie Designs. All rights reserved. "Mackie" and the "Running Man" figure are registered trademarks of Mackie Designs Inc. "FR Series" is a trademark of Mackie Designs Inc.

All FR Series Power Amps have: • Variable frequency low-cut filters • Limiter with On/Off switch • Detented gain controls calibrated in dB and volts • Selectable stereo, mono & bridged amp modes • LED level display with Signal Present & Overload indicators • Balanced XLR & TRS inputs • XLR thru outputs • Superior T-Design cooling • 5-year transferrable Limited Warranty

M-800: 800 watts @ 4 ohms bridged • 400+400 watts @ 2 ohms stereo • Constant directivity horn EQ/Air EQ • 1/4" & 5-way binding post outputs

M-1400 & M-1400i: 1400 watts @ 4 ohms bridged • 700+700 @ 2 ohms stereo • Constant directivity horn EQ/Air EQ • 18dB/oct. subwoofer crossover with 2 selectable frequencies • M-1400i: 1/4" jacks and 5-way binding post outputs; 120V version only • M-1400: Neutrik® Speakon® and 5-way binding post outputs; 120, 220 & 100V models; • Forced-air T-design cooling

CIRCLE #108 ON PRODUCT INFO CARD

www.mackie.com

800-258-6883

MADE IN WOODINVILLE
WASHINGTON, USA BY
GENUINE MACKNOIDS

WhisperRoom INC.
Sound Isolation Enclosures



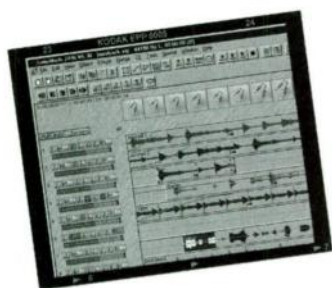
Recording • Practicing • Broadcasting etc.
Various Sizes

Tel: 423-585-5827 • Fax: 423-585-5831
Website: www.whisperroom.com
116 S. Sugar Hollow Rd., Morristown, TN 37813 USA

CIRCLE #109 ON PRODUCT INFO CARD

Samplitude 2496

Multitrack and CD Mastering



24 Bit, 192 kHz, unlimited audio and MIDI tracks, mixer, 5.1 surround, EQ, reverb, dynamics and 15 other built in effects, CD mastering and burning, AVI & Quick Time, MP3, MPEG, full wave editor and more. WIN 95/98, NT.



Talk: 1-800-330-7753
Surf: www.sekd.com



CIRCLE #110 ON PRODUCT INFO CARD

—FROM PAGE 159, SESSIONS & STUDIO NEWS
(Norcross, GA), Stone Temple Pilots engineer Nick DiDia produced Sony/550 Records artist Nine Days with assistance from Shawn Grove and Karl Egsieker...Curb Records country artist David Kersh tracked his new album at Ocean Way Nashville's Neve Room with producer Csaba Petocz, engineer Joe Chiccarelli and assistant engineers Aaron Swihart and Greg Fogie...



David Kersh and percussionist Paulinho DaCosta

NORTHEAST

All the world comes through *World Cafe* at Indre Studios in Philly: Bruce Hornsby played the studios' new Baldwin concert grand piano at a recent taping of the nationally syndicated radio show. The Indigo Girls also were sociable, playing songs off their new Epic album, *Come on Now Social*. The studio did remote recordings of performances by Ben Folds Five and Macy Gray. Managing editor of *Rockpile* Eric Caplan tracked his rock band Cottonmouth DN with engineer Bogdan Hernik...At BearTracks (Suffern, NY), Jack Scarangella recorded a self-produced release with engineer Kevin Halpin and assistant Michael Bates...Adrian Carr Music Designs Mastering (NYC) handled two albums by composer Chen Yi as well as an SB Productions/Motown CD of instrumentals by Ben Love...

NORTH CENTRAL

Michigan pop/rock combo The Burdons weren't a burden at Aurora Studios in Belmont, MI. They finished mixing their live CD on World Records with engineer Jack Conners...At Cata-mountain Recording (Cedar Falls, IA), owner Tom Tatman mixed a World Library CD, *Lenten Journey*, for Joe Mattingly and the Newman Singers...Colossal Mastering (Chicago) projects include a live album by Premonition jazz artist Patricia Barber (Michael Friedman produced)...

SOUTHWEST

Ramon Morales of SugarHill Studios (Houston) took off to tour nationally with local-girls-made-good Destiny's Child, who opened for TLC. Earlier this year Morales tracked the group's latest CD, *The Writing Is on the Wall*...Picki

Music Productions (Las Vegas) produced *Shattered Lives*, a documentary CD featuring the families of victims who lost their lives to drunk drivers. The recording will be broadcast on U.S., Canadian and UK radio...Gospel groups The Jackson Southernaires, Willie Neal Johnson and the Gospel Keynotes, the Mississippi Mass Choir and the Williams Brothers were recently inducted into the Gospel Music Hall of Fame in Detroit. And those artists had another thing in common: They all recorded at Omega Productions in Dallas...Pimpadelics tracked and mixed their upcoming release, produced by Tommy Boy Productions, engineered by Rick Rooney and assisted by Mical Caterina at Planet Dallas Recording Studios (Dallas)...Mark May and the Agitators recorded their Icehouse Records CD with producer/mix engineer Jeff Wells at Sound Arts Recording Studio (Houston)...

SOUTHERN CALIFORNIA

Joni Mitchell went the Ocean Way in Hollywood when she worked on sides for her new Warner Reprise album,



PHOTO: DAVID GOGGIN

Joni Mitchell with producer Larry Klein and engineer Allen Sides at Ocean Way in Hollywood

Both Sides Now, in Studio B. Producer Larry Klein and engineer Allen Sides toiled beside her, and the CD is slated for February release...Godsmack recently landed smack in Signet Soundelux Studios (L.A.) to mix a live concert for the SFX radio network with engineer Andrew Murdock and assistant Brian Dixon. Phil Collins planned to make music for the Super Bowl half-time show with engineer Frank Wolf...Columbia's Cypress Hill dropped in to Track Record (North Hollywood) to write and collaborate with Rage Against the Machine drummer Brad Wilk. DJ Muggs produced the sessions with engineer Sergio Garcia and assis-

"REASONS NOT TO BUY A MACKIE D8B... ZERO"

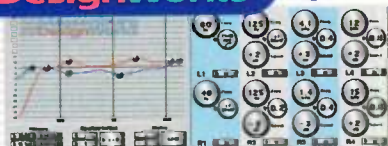
—ROGER NICHOLS, EQ MAGAZINE 11/99

AND 3 MORE REASONS TO GO FOR IT.

Massenburg DesignWorks

certified dBb plug-in

1 DSP PLUG-INS!

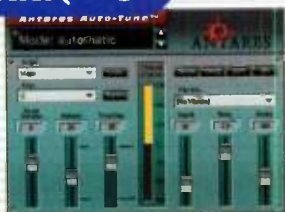


MDW 2x2 High-Resolution Parametric Equalizer plug-in from Grammy-winning engineer/producer George Massenburg. Mono/stereo EQ at 96kHz sample rate for unprecedented clarity and high frequency smoothness.

ANTARES

certified dBb plug-in

Antares Auto-Tune for the D8B uses advanced DSP algorithms to detect the incoming pitch of a voice or solo instrument as it's being tracked and instantly pitch-correct it without introducing distortion or artifacts. Fully automatable.



DRAWMER

certified dBb plug-in



Drawmer offers two dynamics packages for the D8B: ADX100 includes their industry standard frequency conscious gating, plus compression and limiting; ADX200 adds variable "Peak Punch" and further Drawmer innovations.

t.c. electronic

certified dBb plug-in



TC Reverb (bundled with the D8B UFX card) provides Reverb 1 and Reverb 2 algorithms from the renowned TC Electronic M2000 Studio Effects Processor. TC FX upgrade package contains an expanded set of M2000 reverbs plus Delay, Chorus, and Pitch. TC 2000 adds Reverb 3 from the TC M2000, de-essing, tremolo, phasing, and panning.

2 FREE OS UPGRADE!

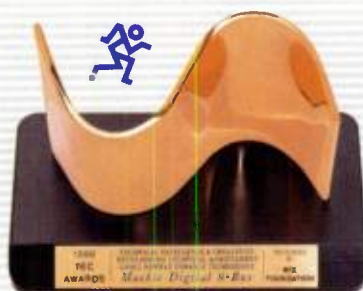
OS 3.0: OVER 30 NEW FEATURES!

Our Programming Department has been chugging the double lattes to create Mackie Realtime OS™ Version 3.0, packed with more new features and enhancements than you can shake a mouse at.

Here's just a partial list of what 3.0 adds to the already amazing D8B.

- **New key (sidechain) inputs** for all 48 onboard dynamic processors featuring soft knee architecture and single band 20-20k parametric EQ for frequency dependent processing such as de-essing
- **3rd-party plug-ins** via our new UFX card. Up to 16 simultaneous plug-ins on the first 48 channels, pre or post DSP, pre-fader via up to 4 UFX cards. Each plug-in is available twice — once when tracking, and again at mixdown!

- **Multiple Undo List** — 999 levels!
- Externally or internally accessible **inserts across Mains and Buses** plus **channel inserts pre and post DSP**.
- **Updated GUI** including 48-channel fader bank view screen.
- New **Snapshot libraries**.
- **MixLink™ networking** allows cascading of multiple Digital 8•Buses and remote control console mirroring of D8B from a second D8B or laptop via Ethernet.
- **Time Offset** (delay) adds a delay of up to 999 samples to the signal at the pre-DSP (dynamics / EQ) point in the signal path.
- **New surround capabilities** including depth-of-center control (LCR mixing with divergence), multiple surround panner window, individual LFE channel level control.
- **Multiple direct outs** per channel.
- **Optional level to tape** fader control.
- **Assignable, bi-directional MIDI control** of all D8B parameters.
- **Cross patching** allows substitution of channels between various banks.



3 '99 TEC AWARD!

We have a strict policy of not naming competitors in our ads. But in this case, Mix Magazine published who we competed against for their 1999 TEC Award for Outstanding Technical Achievement in Small Format Consoles: Allen & Heath's GS-3000, Digidesign's ProControl, Panasonic's WR-DA7, Spirit's Digital 328 and Yamaha's O1V.

Thank you to all who helped us win this prestigious award.

The list of top engineers and producers who use the award-winning Mackie Digital 8•Bus is growing daily. For info on the D8B, the new UFX card, 3rd-party plug-ins and how D8B owners can get their free OS upgrade, call toll-free or visit www.mackie.com.

While you're at it, call or e-mail us for a free Windows®/Mac®-compatible demo of the Digital 8•Bus 2.0 software.



MACKIE
Digital Systems

www.mackie.com • 800.258.6883



Digital Mackoids

tants Ai Fujisaki and Eric Williams. Producer Lanny Cordola produced the Beach Boys' cover of "Hungry Heart" for an upcoming Bruce Springsteen tribute with engineer Kevin Smith and assistant Garcia...At Sony Music Studios' Mastering Room, engineer David Mitson worked on a project for Save Ferris as well as a debut album for LEN, which includes the Gold single, "Steal My Sunshine"...Priority Records artist Bad Azz tracked and mixed at Skip Saylor Recording (L.A.) with producers Jelly Roll, Blacktoven and Lil Beau, engineers Chris Puram and Daniel Romero and assistants Ian Blanch, Paul Smith and Regula Merz...At the Village (West L.A.),



Counting Crows flew in for Ping-Pong at the Village: engineer Ok Hee Kim, guitarist Dan Vickrey, co-producer Dennis Herring, vocalist Adam Duritz, engineer Jim Scott and guitarist Dave Bryson.

Counting Crows recently mixed their critically acclaimed third album, *This Desert Life* (with time out for table tennis). David Lowery and Dennis Herring produced...At Larrabee North (Universal City), the ever-busy Rob Chiarelli mixed tracks for Priority artist Aaliyah with producer Donnie Skance and assistant Steve B and Interscope artist Tre Knocks with a variety of producers and assistant Steve B...*The Messenger's* Milla Novovich worked on demos for her Virgin sophomore effort at Swing House (L.A.) with engineer C.J. Buscaglia...At Bernie Grundman Mastering (Hollywood), 2nd II None was in the studio to work on their second CD, *Classic 220*, with producer DJ Quik and mastering engineer Brian "Big Bass" Gardner...

NORTHWEST

Sierra Sonics Recording Mansion (Reno, NV) recently got chronic with Dr. Dre, who was tracking *Dr. Dre 2001* with engineer Richard Huraia. A bevy of would-be heartthrobs also descended on the manse to record four songs for *Together*, an MTV television movie/boy

band spoof that airs this spring. Hula Hand Film Music oversaw the production engineered by Robert Kancro, and the four lead actors (picked from 1,200) went on to film in Vancouver...Larry Crane of Jackpot! (Portland, OR) worked with Cadallaca (with Corin Tucker of Sleater-Kinney), as well as Braille Stars and Sugarboom...At Egg Studios (Seattle), engineer Conrad Uno and producer Rob Morgan got cracking, mixing the new Squirrels album for Netherlands label Fan Mael. Uno also worked with Supernot and the legendary Henry Boy. Fireballs of Freedom tracked and mixed a new Estrus release with producer Tim Kerr and engineer Johnny Sangster...At DEAL (Redmond, WA), Strange Parade mixed their latest CD with producer Joe Benson and engineer Chuck Strouss...Peak Studios (Seattle) recorded Smashmouth live for broadcast on KNDD and KISS radio in Seattle...At Gravelvoice (Seattle), Scott Colburn edited projects by Land of the Loops and Aiko Shimata. Tucker Martine engineered both recordings...Vancouver pop/rock combo GLIMMER was in at Seventh Heaven Studios in Everson, WA, with producer/engineer David Lee Caron...Engineer Robert Bartleson worked at Haywire Recording in Portland with Lielythe, Intifada, Veneer, and Starter Kit...At Disc Makers (Seattle), engineer Max Rose mastered CDs by Zeke and Ponticello...

STUDIO NEWS

Producer/drummer Mark Hill plans to take pop clients such as 34 Below to the



Producer Mark Hill (back) with 34 Below

top of the charts with Hafler monitoring systems. Hafler TRM6 active monitor speakers and a TRM10s Trans•ana powered subwoofer were recently installed at his N'Focus Studios in Orange County, CA...Smashing Pumpkins and Liz Phair producer Brad Wood acquired a complete equipment package from Professional Audio Design for his new downtown Chicago facility, Idful Music. It included an SSL 4064 console system

and refurbished Studer A800 and A820 2-inch, 24-track machines...studio built recently completed Luminous Sound Studios in Dallas for producer/songwriter/director Paul Loomis. The \$3 million, 6,500-square-foot facility was designed by architect Peter Grueneisen...Soundtracs DPC II digital consoles were purchased by Howard Schwartz Recording (NYC), East Side Audio (NYC), the 5.1 Entertainment Group (L.A.) and the Peabody Conservatory of Music at Johns Hopkins University (Baltimore). ■

Fax Sessions & Studio News to 510/653-5142 or e-mail Kim_Chun@intertec.com.

SESSIONS & STUDIO NEWS GOES NORTH—TO CANADA

Armoury Studios (Vancouver) has kept busy, in spite of the death last May of its owner/producer, Bruce Fairbairn. Fairbairn's last recording, Yes' *The Ladder*, recently came out; Motley Crue prepared their new live album at the studio; and Garbage worked on their theme to the latest James Bond film. Other recent clients include Monster Magnet, Seal, Fear Factory and Tom Cochrane. Fairbairn's wife, Julie Glover, and manager Sheryl Preston continue to keep the Armoury active...Raffish children's artist Raffi found a room in Mushroom Studios in Vancouver. Michael Creber produced, and Rolf Hennemann engineered. Local boys Ocean 3 were also in to record new songs with engineer Blair Calibaba...Satellite Records artist Chicklet recorded their new self-produced CD, *Wanderlust*, at Audiolab Recording Studio (Toronto) with engineer Chris Hegge...Manta Sound (Toronto) recently acquired five SADiE Artemis digital audio workstations, one for each of its studios. The facility specializes in post-production for film and television, and its orchestral scoring credits include *The Ice Storm* and *Free Willy 3*...Bryston Ltd. of Peterborough, Ontario, recently installed PMC's BB-5 active monitoring system at Vlado Mellor's mastering suite at Sony Music in New York City. ■



Your Passport to 20,000*

Latin American Recording and Sound Professionals

No other Spanish-language magazine delivers equipment information and in-depth applications-oriented coverage of this caliber on the following topics:

RECORDING

SOUND REINFORCEMENT

AUDIO FOR FILM/VIDEO

MUSIC PRODUCTION

**NEW IN
2000**

SOUND INSTALLATION & LIGHTING



More than 20,000* copies of *Mix-Edición en Español* are distributed bi-monthly to live sound and recording professionals, aspiring pros, musicians and installation and lighting specialists in virtually every country in Central and South America, plus Spain, Puerto Rico and Spanish-speaking regions of the United States.

Mix-Edición en Español

For Advertising Information contact

Dan Hernandez, Advertising Director: (510) 985-3266

dan_hernandez@intertec.com

*Publisher's Own Data (includes newsstand single copy sales)

CIRCLE #119 ON PRODUCT INFO CARD

■ STUDIO SHOWCASE ■



Trans Continental Studios

7566 Southland Blvd., Ste. 107
Orlando, FL 32809
(407) 857-3414; Fax (407) 857-7229

The T Con 1 remote recording truck features the API Legacy recording console along with 5.1 monitoring via Mackie HR 824 monitors w/Genelec subwoofer. Choose your master and safety machines from our selection of: 3348 48-track, 48 tracks of DA-88, Otari RADAR 48-track 24-bit direct-to-disk recorder, Pro Tools|24. Partial outboard gear list includes 48 API mic preamps, Manley Optical compressor, Manley Vari Mu compressor, (5) API 560 EQ, (4) API 550 EQ, (4) Empirical Labs Distressors, (4) dbx 160 A compressors, Drawmer D201 gate, Sony Time Code DAT, Lexicon PCM70, Lexicon PCM42, Lexicon LXP-15 and Lexicon 300.



Artisan Recorders Mobile

P.O. Box 70247
Ft. Lauderdale, FL 33307
(954) 566-1800; Fax (954) 566-3090
e-mail: mobile_red@aol.com
<http://www.artisanmobile.com>

For over 20 years, Artisan Recorders has been providing excellence in remote recording and broadcast. Along with an extensive array of equipment in a comfortable aesthetic environment, our "Mobile Red" studio boasts an expert staff of technicians with a love of music and desire for perfection. Currently touring with ABC's *Tom Joyner Morning Show*. When you rock, we roll.



Dennis Drake's Music Lab

5 Nash Court
Morganville, NJ 07751
(732) 972-8448; Fax: (732) 972-1912
e-mail: musiclab@ix.netcom.com

Located an hour south of NYC, the Music Lab is a full-service audio mastering facility using state-of-the-art Sonic Solutions mated with classic tube gear from Summit Audio, Ampex and Pultec. Chief Engineer Dennis Drake specializes in back-catalog reissues and has mastered hundreds of CDs for Time-Life, Mercury, Verve and Brunswick, among others. Services also include archiving and mixdowns from 3- & 4-track analog masters.



Studio Atlantis

1140 N. Western Ave.
Hollywood, CA 90029
(323) 462-7761; Fax (323) 462-3393
<http://www.studio-atlantis.com>

- Neve VR 60 with Mad Labs CP-4 upgrade and Flying Faders
- 48-track Studer analog
- Pro Tools|24 digital recording & editing
- 5.1 surround sound by George Augspurger
- bau:ton designed
- Excellent selection of vintage and state-of-the-art outboard equipment & microphones
- Private lounges and restrooms
- Secured indoor parking
- Experienced and professional staff
- Creative and harmonious vibe



Turtle Recording Studios

1122 Vidal St.
White Rock, B.C., Canada V4B 3T3
(604) 535-8842
e-mail: info@turtlestudios.com
<http://www.turtlestudios.com>

A beautiful new ocean-front studio located in White Rock, B.C., 30 min. south of Vancouver near the U.S. border. With the renovation of a historical brick building, Turtle has brought world-class recording to a resort community best known for its sun, beaches, boardwalk, golfing and great dining. Studio features include a custom automated Neve 8108 console, Yamaha Disklavier grand piano, underground reverb chamber, large live room, great selection of new and vintage gear. Past clients include Bryan Adams, Sarah McLachlan, Kenny G, Pearl Jam, Soundgarden...



Cornerstone Studios Remote Truck

825 N. Main
Wichita, KS 67201
(888) 447-8729; Fax (316) 292-1178
<http://www.cornerstonestudios.com>

In the heart of the Midwest, Cornerstone Studios has provided high-quality audio production since 1989. Our remote truck, equipped with a custom Neotek console and digital multitrack recorders, can help you capture the excitement of your live event. After the remote, we can mix and edit in our Pro Tools|24 Mix control room. Here is what sets us apart: our 30x50-ft. tracking room, 2 iso booths, ISDN, extensive list of instruments and outboard gear, and our commitment to high-quality client care.

■ STUDIO SHOWCASE ■



Blue Heaven Studios

201 S. Eighth St.
Salina, KS 67401
(785) 825-8486; Fax (785) 825-0164
e-mail: jimmyd@acousticsounds.com
<http://www.acousticsounds.com>

Enjoy the relaxed, Midwest hospitality of BHS, a world-class analog recording studio created in a Gothic-style church. This unique studio features a 900-sq.-ft. kitchen, large recreation area with pool table, Ping-Pong, darts, TV, stereo and a separate private lounge for musicians. Features include a 160,000-cu.-ft. main studio, modified Neve 5106, MCI 2" 16-track, modified Ampex ATR-102 ½" 2-track, vintage tube mics, Hammond B-3, baby grand piano, DVD 24/96 audio/video capabilities, complete production, in-house photography and design, and more.



Airshow Mastering

3063 Sterling Circle, Ste. 3
Boulder, CO 80301

5400 Carolina Place
Springfield, VA 22151

(888) 545-9035
e-mail: airshow@airshowmastering.com
<http://www.airshowmastering.com>

Grammy-winning mastering engineers David Glasser and Charlie Pilzer are joined by talented music vets Paul Blakemore and James Tuttle in three superbly designed, well-equipped studios east and west. Now offering DSD/SACD recording and mastering and other high-resolution formats. To view credits, gear lists, project news, please visit our Web site.



Sheffield
AUDIO-VIDEO
PRODUCTIONS

SSL AXIOM MT
48' VIDEO/48' AUDIO

Sheffield Remote Recordings

13186 Sunnybrook Road
Phoenix, MD 21131
(800) 672-3220 or (410) 628-7260
e-mail: vance@sheffieldav.com
<http://www.sheffieldav.com>

Sheffield's truck is the largest SSL audio truck in North America. Add to that a Genelec 5.1 surround sound monitor system, analog or digital 48-track format, 12-input Neve Melbourne—and one of the best crews on the road today. This is not just a truck; it's a complete facility. Recent 1998-1999 credits include Aerosmith, Puff Daddy, Lenny Kravitz, New Orleans Jazz Festival, Boston Pops, R.E.M. and the Tibetan Freedom Festival.



Akashic Recording Studio

1388 Deer Trail Road
Boulder, CO 80302
(303) 444-2428
e-mail: prasanna@csd.net
<http://www.csd.net/~akashic>

Nestled in the wilderness above Boulder, Akashic provides the environment conducive to your best, most inspired work. Featured in *Mix*, Aug. '94 ("truly a top-flight facility"—Blair Jackson). Sonic Solutions mastering, Apogee 96k 24-bit, Audio Upgrades optimized console and 2" 24-track analog (Sony MCI JH-24), Sontec, Tube-Tech, Jeff Rowland, Cardas, Steinway, Lexicon, Ecoplate I & II. Clients: Big Head Todd & the Monsters, String Cheese Incident, Patrick Leonard, Bill Frisell, Ron Miles, Richie Cole. Leasing and residential services available.



DigiNote-Miami.com

407 Lincoln Road, No. 5C
South Beach, Miami, FL 33139
(305) 604-9210; Fax (305) 604-5967

Record in South Beach, Miami. Strictly specializing in Pro Tools. Described in *EQ* mag as: "The best Pro Tools studio in the world." We transfer from 24-track 2", ADAT or Tascam DA-88/98 using highest-quality Apogee AD8000 converters for the very best sound.

Genelec monitors and subwoofer. Neumann, Sony C800 mics, Avalon, Neve, TC Gold preamps. Various gear including Roland V-Drums, VG8 guitar synth, Trinity, etc.

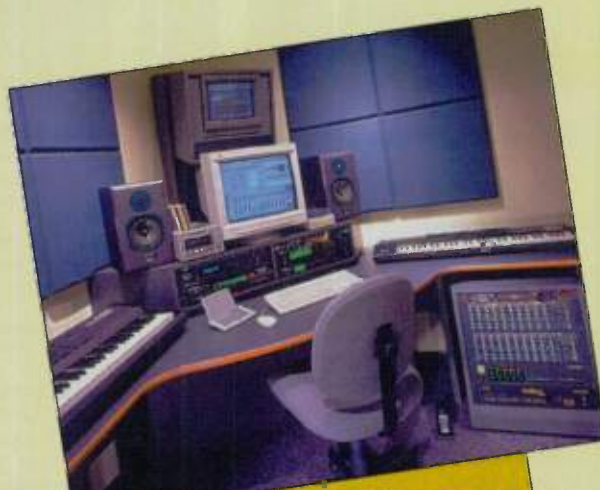
Rock-solid recording and mixing in luxurious surroundings with first-class engineering and service.

n p r

NPR

635 Massachusetts Ave., N.W.
Washington, D.C. 20001-3753
(202) 414-2482; Fax (202) 414-3033
e-mail: rgi@npr.org
<http://www.npr.org/studios>

Located in downtown Washington, D.C., Studio 4A offers a spectacular recording environment well-suited to all music genres. Studio 4A, at 2,600 sq. feet, is one of the largest recording facilities on the East Coast. We offer digital and analog multi-track recording, an extensive mic collection, digital editing suites and CD mastering. NPR also offers satellite uplinking, fiber and ISDN capabilities worldwide.



420 Ninth Avenue

Between 33rd & 34th Streets, New York, N.Y. 10001

Store and Mail Order Hours:

Sun. 10-5, Mon. thru Thurs. 9-7

Fri. 9-2, Sat. Closed

For Orders Call:

800-947-5508

212-444-6698

or FAX (24 Hours):

800-947-9003

212-444-5001

On the Web:

www.bhphotovideo.com

We Ship Worldwide

**OUR NEW
EXPANDED
LOCATION**





"THE PROFESSIONAL'S SOURCE"

FOR ORDERS CALL:
800-947-5508
212-444-6698

OR FAX (24 HOURS):
800-947-9003
212-444-5001

Store & Mail Order Hours:
Sunday 10-5
Monday thru Thursday 9-7
Friday 9-1 • Saturday Closed

On the Web: <http://www.bhphotovideo.com>

420 Ninth Ave. (Bet. 33rd & 34th St.) New York, N.Y. 10001

DIGITAL MIXERS

MACKIE

Digital 8 Bus Mixing Console

Everything you've been waiting for and more!!! The digital 8 bus from Mackie features great sound quality, full recording and mixdown capabilities, motorized faders and an array of digital features geared to take you flying into the next century. See for yourself what the entire industry is raving about.

FEATURES-

- 48 channels of automated compression, gating, EQ and delay
- Built-in 3-way meter display keeps you on top of your mix
- Built-in meter bridge
- Ultramix II automation for complete control, hook up an S-VGA monitor and you'll feel like you spent a lot more money
- All functions can be automated, not just levels and mutes
- Store EQ, reverb, compression, gating and even Aux send information
- Fast SCENE automation allows you to change parameter snapshots on every beat
- Reads Standard MIDI tempo maps, displaying clock info on the built-in position counter
- Truly the cutting edge of mixing technology



Panasonic

WR-DA7 Digital Mixing Console

Stop dreaming about your digital future, it's here! The Panasonic WR-DA7 digital mixer features 32-bit internal processing combined with 24-bit A/D and D/A converters as well as moving faders, instant recall, surround sound capabilities, and much more. Best of all, it's from Panasonic.

FEATURES-

- 32 Inputs/6 AUX send/returns
- 24-bit converters
- Large backlit LCD screen displays EQ, bus and aux assignments, and dynamic/delay settings
- 4-band parametric EQ
- Choice of Gate/Compressor/Limiter or Expander on each channel
- 5.1 channel surround sound in three modes on the bus outputs
- Output MMC
- Optional MIDI joystick



TASCAM

TMD1000 Digital Mixing Console

You want to see what all the digital mixing buzz is about? The NEW TMD1000 from Tascam will have you smilin' & automatin' in no time. It features fully automated EQ, levels, muting, panning and more in an attractive digital board with an analog feel! Your digital future never looked, or sounded, so clear.

FEATURES-

- 4 XLR mic inputs, 8 1/4" balanced TRS inputs
- 20-bit A/D conversion, 64x oversampling on input, 128x on output
- Store all settings, fully MIDI compatible
- **Optional IF-TD1000** adds another 8 channels of TDIF and a 2-channel sample rate converter
- **Optional FX-1000** Fx board adds another 4 dynamic processors and another pair of stereo effects



DIGITAL RECORDING

Lexicon

Lexicon Studio Recording System

The Lexicon Studio System interfaces with your favorite digital audio software for a complete hard disk recording package. Supporting both PC and Mac, Lexicon Studio can be expanded up to 32 voices from a variety of I/O options. For recording, editing, mixing and DSP, Lexicon Studio is here.

FEATURES-

- The Core-32 System PCI-Card is capable of supporting 32 audio streams simultaneously. It can also be used as a time code or clock master or slave
- The PC-90 Digital Reverb daughterboard attaches to the Core-32 providing 2 discrete stereo reverbs
- The LDI-12T delivers up to 12 channels of simultaneous I/O supporting analog (+4 XLR and -10 RCA), s/pdif, and ADAT
- Direct support of Steinberg Cubase VST and many other software programs
- Optional LDI-10T w/ 8 24-bit analog to digital I/O, coaxial S/PDIF digital I/O and time code input (PC only)



• Soon to be available LX3 I/O hub allows up to 3 LDI-10Ts to be used simultaneously.

EFFECTS PROCESSING

t.c. electronic

Finalizer Express



The Finalizer Express is a fast and efficient way to turn your mix into a Professional Master! Based upon TC's Multi-Award winning Finalizer Mastering Technology, it delivers the finishing touches of clarity, warmth and punch to your mixes, putting the world of professional mastering within your reach.

FEATURES-

- 24-bit resolution A/D & D/A converters
- 16 & 20 bit dithering
- TC's unique Multiband Comp & Limiter Algorithms
- Boost and cut over three bands with the Spectral Balance Controls
- Soft Clipping and Look Ahead Delay
- Finalize Matrix for 25 variations in style and rate

- Optimize overall level with the Automatic Make-Up Gain
- Extra compression in each band using Emphasis keys
- Record fades from the built-in Digital Fader or the optional TC Master Fader via MIDI
- Connections include AES/EBU, S/PDIF, Optical Toslink & MIDI I/O's
- High Res LED Metering of I/O & multi-band gain reduction

M3000 Professional Reverb



Incorporating TC Electronic's new VSS-3 technology, the M3000 is a great sounding, versatile reverb that is easy to use. Combining ultimate control of early reflections with a transparent reverb tail, the art of reverberation is brought to a new level. Whether it's a phone booth, cave or concert hall, the M3000 delivers high-quality ambience.

FEATURES-

- VSS-3, VSS-3 Gate, C.O.R.E. & REV-3 reverbs as well as Delay, Pitch, EQ, Chorus, Flanger, Tremolo, Phaser, Expander/Gate, Compressor and De-Esser
- 300 high-grade factory presets including Halls, Rooms, Plates, Ambience, Gated Reverbs, and more

- Up to 300 user presets in internal RAM and 300 more using an optional PCMCIA card
- Dual engine configuration featuring 24-bit A/D/D/A's
- Connections include AES/EBU, Coaxial S/PDIF, Optical Tos-Link/ADAT & analog XLR I/O's, MIDI IN/OUT/THRU, Clock Sync and External Control

Lexicon

PCM81 Multi-Effects Processor



The PCM-81 has everything that made the PCM80 the top choice among studio effects processors, and more. More effects, more algorithms, longer delay and full AES/EBU I/O.

FEATURES-

- 300 Presets include pitch, reverb, ambience, sophisticated modulators, 20 second stereo delays, and dynamic spatialization effects for 2-channel or surround sound applications

- 2 digital processors including Lexicon's Lexichip for the reverb and a second DSP engine for the other effects
- 24-bit internal processing
- Dynamic patching matrix for maximum effects control
- PCM card slot

COMPRESSORS

PreSonus

ACP88

8 Channel Compressor

Stemming from their popular ACP88, the ACP88 comprises eight channels of compression, limiting and noise gating for a variety of studio applications. It features individual side chain for each channel and it's attractive blue anodized finish lets you show your true sonic colors.

FEATURES-

- 8 separate compressors/gates with individual controls
- Servo balanced or unbalanced inputs & floating balanced or unbalanced outputs
- Individual side chain jacks for spectral compression and a separate sidechain jack for gate processing

- Each channel boasts full gain reduction metering, compression threshold indication & gate open/close
- Front panel buttons include hard/soft knee compression, peak/auto compression, bypass, gate range and link
- Link feature uses a unique summing bus for multiple combinations of master/slave link setups.



dbx

Blue Series 160SL Stereo Compressor

The dbx 160S combines the best features of all the great dbx compressors in a well-built unit where the craftsmanship is as stunning as the engineering is innovative. This is truly a desirable compressor.

FEATURES-

- 127dB dynamic range • Program dependent "Auto", or fully variable attack and release
- Hard knee/OverEasy switchable



SEVEN DAY CUSTOMER SATISFACTION GUARANTEE

CIRCLE #118 ON PRODUCT INFO CARD

FOR ORDERS CALL:
800-947-5508
212-444-6698

OR FAX (24 HOURS):
800-947-9003
212-444-5001

**MOST ORDERS SHIPPED
WITHIN 24 HOURS**
OVERNIGHT SERVICE AVAILABLE
On the Web: <http://www.bhphotovideo.com>

ANALOG TO DIGITAL CONVERTERS



Rosetta 96k 24-bit Analog to Digital Converter

The high-end quality analog to digital solution for the project studio. With support for both professional and consumer digital formats you can now record your audio at a higher resolution and with greater detail than standard converters found on MDM's, DAT's and DAW's. Ideal for mastering or tracking.

FEATURES-

- 24-bit, 44.1-48, 88.2-96 kHz Sample Rate ($\pm 10\%$)
- 116dB dynamic range (unweighted)
- Improved UV22HR for 16 and 20-bit A/D conversion

FRONT PANEL:

- Power switch • Sample Rate (44.1, 48, 88.2, 96kHz) selector • 16-bit (UV22), 20-bit (UV22) and

24-bit resolution selector • S/PDIF-ADAT optical selector • Soft Limit on or off • 12-segment metering w/ over indicator & Meter Clear switch • Level trim

REAR PANEL:

- XLR balanced inputs • 2 x AES/EBU for 88.2/96kHz 2 channel path, Coaxial S/PDIF, switchable S/PDIF or ADAT optical outputs • Wordclock out



lucid AD 9624 24-bit Analog to Digital Converter

Transparent analog to digital conversion designed to bring your music to the next level. XLR balanced inputs feed true 24-bit converters for revealing all the detail of the analog source. 16-bit masters can take advantage of the AD9624's noise shaping function which enhances clarity of low level signals.

FEATURES-

- 24-bit precision A/D conversion • Support for 32, 44.1, 48, 88.2 & 96kHz sample rates • Wordclock sync input • Selectable 16-bit noise shaping

- Simultaneous AES/EBU, coaxial and optical S/PDIF outputs • 20-segment LED meters w/ peak hold & clip indicators • ALSO AVAILABLE: DA9624 24-bit D/A converter



DIGITAL MULTI-TRACK RECORDERS

TASCAM

DA-88 Modular Digital Multitrack

The standard digital multitrack for post-production and winner of the Emmy award for technical excellence, the DA-88 delivers the best of Tascam's Hi-8 digital format. Its Shuttle/Jog wheel and track delay function allow for precise cueing and synchronization and the modular design allows for easy servicing and performance enhancements with third-party options.

FEATURES-

- 1.48 minutes record time on a single 120 min tape
- Expandable up to 128 Tracks using 16 machines
- User-definable track delay & crossfade
- Shuttle & Jog capability
- Auto punch with rehearsal



- SMPTE, MIDI and Sony 9-pin sync capability
- Options include RC-828/898 Remote Controllers, IF-AEB8/IF-88SD digital interfaces, MU-Series meter bridge, MMC-88 MIDI machine control interface, SY-88 Sync Card

DA-38 Digital Multitrack for Musicians

Designed especially for musicians, the DA-38 is an 8 track digital recorder that puts performance at an affordable price. It features an extremely fast transport, Hi-8 compatibility, rugged construction, ergonomic design and sync compatibility with DA-88s.



ALESIS

ADAT M20 20-bit Digital Audio Recorder

The M20 represents Alesis commitment to meeting the high standards of world-class audio engineers, producers, studio owners and high-end video and film post production studios. A new professional digital multi-track, the M20 records 20-bit for outstanding sound quality. Combined with a host of production features like SMPTE/EBU, the M20 is a powerful tool.

FEATURES-

- SVHS Recording format - up to 67 minutes recording.
- 18-XLR connections (9 in and 9 out) as well as a 56-pin ELCO connection.
- Digital I/O
- Includes LRC remote and a digital cable.



- 24-bit, 64x oversampling recording, 20-bit, 128x oversampling playback

ADAT XT20 Digital Audio Recorder

The New ADAT-XT20 provides a new standard in audio quality for affordable professional recorders while remaining completely compatible with over 100,000 ADATs in use worldwide. The XT20 uses the latest ultra-high fidelity 20-bit oversampling digital converters for sonic excellence, it could change the world.

FEATURES-

- 10-point autolocate system
- Dynamic Braking software lets the transport quickly wind to locate points while gently treating the tape.

ADAT OPTIONS-

- BRC for all Adat (except M20) w/ 460 locate pts, smpte/absolute time & bar and beat timing references, digital editing and transport control for up to 16 ADATs
- AIS 20-bit 8 channel analog - optical I/O interface



- Remote control
- Servo-balanced 56-pin ELCO connector
- Built-in electronic patchbay
- Copy/paste digital edits between machines.
- CADI remote control/autolocator for M20 w/ jog/shuttle & rj-45 ethernet connector for long distance cable runs
- Adat/Edit integrated PCI digital audio card and software for recording and editing on Mac & Windows computers

CD RECORDERS



CDR-850 CD Recorder

The new HHB CDR850 is one of the most comprehensive CD-R, CD-RW recorders available today. It delivers the outstanding sound quality that HHB is known at a lower price than previous models. Equipped with a complete range of analog and digital I/O and easy to use one touch recording modes make the CDR850 suitable for any audio environment no matter how sophisticated or demanding.



- CD-R, CD-RW compatible
- All functions accessible from front panel menu
- 4 one touch recording modes; 2 manual, 2 automatic
- Sample rate converter accepts any digital signal from 32kHz to 48kHz including varispeed

- Copies all CD, DAT, MD, DVD and DCC track starts
- Complete user control over SCMS
- Balanced XLR analog I/O, Unbalanced (RCA) phono analog I/O, AES/EBU digital input, coaxial & optical S/PDIF digital I/O

STUDIO DAT-RECORDERS

TASCAM

DA-45HR Master DAT Recorder

The new DA-45HR master DAT recorder provides true 24-bit resolution plus standard 16-bit recording capability for backward compatibility-making this the most versatile and great sounding DAT recorder available. With support for both major digital I/O protocols plus the ability to integrate the machine into virtually any analog environment, the DA-45HR is the ideal production tool for the audio professional.



FEATURES-

- Word Clock
- 24-bit A/D and 20-bit D/A with dither
- XLR balanced and RCA unbalanced analog I/O
- AES/EBU and S/PDIF digital I/O

- Word Sync In/Thru
- Alphanumeric data entry for naming programs
- Independent input level adjustment capability
- Output trim for XLR balanced analog output
- Optional RC-D45 Remote Controller

Panasonic SV-3800

The SV-3800 & SV-4100 feature highly accurate and reliable transport mechanisms with search speeds of up to 400X normal. Both use 20-bit D/A converters to satisfy even the highest professional expectations. The SV-4100 adds features such as instant start, program & cue assignment, enhanced system diagnostics, multiple digital interfaces and more. Panasonic DATs are found in studios throughout the world and are widely recognized as the most reliable DAT machines available on the market today.



FEATURES-

- 64x Oversampling A/D converter for outstanding phase characteristics
- Search by start ID or program number
- Single program play, handy for post.

- Adjustable analog input attenuation, +4/-10dBu
- L/R independent record levels
- Front panel hour meter display
- 8-pin parallel remote terminal
- 250x normal speed search

Fostex

D-15 Pro Studio DAT Recorder

The new Fostex D-15 features built in 8MB of RAM for instant start and scrubbing as well as a host of new features aimed at audio post production and recording studio environments. Optional expansion boards can be added to include SMPTE and RS-422 compatibility, allowing the D-15 to grow as you do.



FEATURES-

- Hold the peak reading on the digital bargraphs with a choice of 5 different settings
- Set cue levels and cue times
- Supports all frame rates including 30d1
- Newly designed, 4-motor transport is faster and more efficient (120 minute tape shuttles in about 60 sec.)
- Parallel interface • Front panel trim pots in addition to the level inputs

D-15TC & D-15TCR

The D-15TC comes with the addition of optional chase and sync capability installed. It also includes timecode reading and output. The D-15TCR comes with the further addition of an optional RS-422 port installed, adding timecode and serial control (Sony protocol except vari-speed)

SONY PCM-R500

Incorporating Sony's legendary high-reliability 40.D.1 Mechanism, the PCM-R500 sets a new standard for professional DAT recorders. The Jog/Shuttle wheel offers outstanding operational ease while extensive interface options and multiple menu modes meet a wide range of application needs.



FEATURES-

- Set-up menu for preference selection. Use this menu for setting ID6, level sync threshold, date & more. Also selects error indicator.
- Includes 8-pin parallel & wireless remote controls

- SBM recording for improved S/N (Sounds like 20bit)
- Independent L/R recording levels
- Equipped with auto head cleaning for improved sound quality.

VIDEO and PRO AUDIO



TO INQUIRE ABOUT YOUR ORDER:

800 221-5743 • 212 239-7765

OR FAX 24 HOURS:

800 947-2215 • 212 239-7549

New Address:

**420 Ninth Ave. (Bet. 33rd & 34th St.)
New York, N.Y. 10001**

B&H
PHOTO - VIDEO - PRO AUDIO

TUBE MICROPHONES



C12VR TUBE MICROPHONE

A legendary tube mic developed by AKG over 40 years ago. The carefully hand-made large dual diaphragm capsule offer a silky smooth, transparent high end, exquisite mid-range and a deep, rich bass response. Nine polar patterns and 3 bass roll-off positions are provided for unsurpassed flexibility. An outstanding mic for the serious recordist.

FEATURES-

- Re-issue of classic tube mic the C12
- Polar patterns include: Cardioid, Omnidirectional figure 8 and six intermediate settings accessible via remote control
- 3 position Bass-cut filter (Flat, 75 & 150Hz)
- Includes N-12cr power supply, H15/T shock suspension 10M cable, W42 foam wind-screen and professional metal case
- Frequency response 30Hz to 20kHz



audio-technica AT4060

Combining premium 40 series engineering and vintage tube technology, the AT4060 delivers a versatile and competent studio microphone. Low-noise and high SPL capabilities make the AT4060 a premier vocal mic as well as strings, guitars and other demanding applications.

FEATURES-

- 20 - 20,000 Hz freq response
- Dual gold-vaporized large diaphragm elements
- Includes the AT8560 power supply, AT8447 shock mount, rack mount adapters and case.



MICROPHONES

SHURE KSM-32

The new KSM32 side-address microphone features an extended frequency response for open, natural sound reproduction. Suitable for critical studio recording and live sound production, Shure steps up to the plate with another classic.

FEATURES-

- Class A, transformerless preamplifier circuitry for improved linearity across the full frequency range.
- Exceptionally low self-noise and increased dynamic range necessary for highly critical studio recording.
- 15 dB attenuation switch for handling high SPLs.
- Switchable low-frequency filter to reduce vibration noise or to counteract proximity effect.
- Great for vocals, acoustic instruments, ensembles and overhead miking of drums and percussion.
- SL model also features an elastic shock mount which greatly reduces external vibrations.



BPM CR10

The BPM CR10 Studio Condenser Mic features a full frequency response for competition against the best of the best.

FEATURES-

- 1" Gold diaphragm
- Suitable for most guitar and vocal recording applications.
- Includes Custom Aluminum Road Case, XLR-cable, wind screen and elastic suspension.



SAMPLING

AKAI

\$5000 & \$6000 Studio Samplers

Akai is proud to announce its next generation of samplers with the introduction of the S6000 and the S5000. Building upon Akai's legendary strengths, both machines feature up-to 128-voice polyphony and up-to 256 MB of RAM. They use the DOS disk format and WAV files as the native sample format allowing standard PC .WAV files to be loaded directly for instant playback - even samples downloaded from the Internet into your PC may be used. And of course, both the S6000 and S5000 will read sounds from the S3000 library.

FEATURES-

- OS runs on easily upgradeable flash ROM
- 2x MIDI In/Out/Thru ports for 32 MIDI channels
- Stereo digital I/O and up to 16 analog outputs.
- 2x SCSI ports standard
- Wordclock connection
- Optional ADAT interface provides 16 digital outs
- .WAV files as native sample format



\$6000 ONLY FEATURES-

- Removable front panel display
- User Keys
- Audio inputs on both the front and rear panel allow you to wire the S6000 directly into a patchbay from the back and override this connection simply by plugging into the front.

E-MU



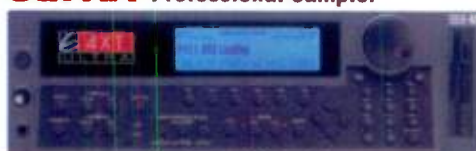
E-mu Systems, Inc.

E4XT ULTRA Professional Sampler

The Emulator legacy continues with the new ULTRA series from E-mu. Based on the EIV samplers the new 32-bit RISC processing of the E4XT guarantees faster MIDI response, SCSI, DSP and sampling.

FEATURES-

- 128 voice polyphony
- 64mb RAM (exp. to 128)
- 3.2GB Hard Drive • Dual MIDI (32 channels)
- 24-bit effects processor • 8 bal. outs (exp to 16)
- Word Clock & AES/EBU I/O
- EOS 4.0 software
- 9 CD ROMs over 2GB snds



MIC PREAMPS



Classic 80 Pentode Tube Mic Pre

Fronted by a low noise EF86 pentode tube and 2 additional triode tubes per channel gives this pre amp detail, openness and presence. Input and output level controls allows precise control of harmonic contribution of the tubes.

FEATURES-

- 2 Channel Mic Pre • Balanced Mic Ins w/48V Phantom Power • Dedicated 1/4" instrument input
- High & Low pass filters w/ 3 cut off frequencies (HPF - 50Hz, 100Hz or 150Hz) (LPF - 5kHz, 10kHz or 15kHz)
- Phase reverse on channel 2
- Drive & Peak LED's • Large rotary output faders
- Illuminated VU meters • 250V HT voltage rail



dbx 586 Vacuum Tube Mic Pre

The DBX 586 Vacuum Tube Dual Mic Preamp uses hand selected and matched premium 12AU7 vacuum tubes ensuring ideal characteristics for a warm, distortion free signal path. Custom designed analog VU meters monitor tube level insert path or output levels well Line/Instrument and mic inputs make the 586 versatile enough to use with virtually any input source.

FEATURES-

- Mic or line/instrument inputs on each channel.
- 4+/10 operation.
- Drive control for a wide variety of great tube effects
- 3-Band EQ with sweepable frequency
- Optional TYPE IV Conversion System outputs
- Separate 1/4" insert send/return on each channel



JOE MEEK VC1 Studio Channel

The Joe Meek Studio Channel offers three pieces of studio gear in one. It features a transformer coupled mic pre, compression and a professional enhancer together in a sleek 2U rackmount design!

FEATURES-

- 48V phantom power, Fully balanced operation
- Mic/Line input switch
- High pass filter for use with large diaphragm mics
- Extra XLR input on front makes for easy patching
- Compression In/Out & VU/Compression meter
- Enhancer In/Out switch and enhance indicator
- Internal power supply 115/230V AC



MONITORS



EXPOSE E7 Active Studio Monitors

When you need a truly neutral sounding near field monitor, look no further than the Expose E7 by KRK. From the unconventional enclosure shape that eliminates the resonances found in parallel designs to the custom designed Kevlar cones and bi-amplification, every aspect of this reference monitor has been built from the ground up to deliver sonic purity.

FEATURES-

- 7" Kevlar LF Driver
- 1" Kevlar HF Driver
- 54Hz - 20kHz, ± 3 dB
- Bi-amplified 140 watts/side @ 8 Ohms
- Neutrik XLR/ 1/4" combo connector
- 109dB Max SPL continuous



M6000/S Studio Monitors

The KRK M6000/S are designed for close-field monitoring. A smooth frequency response in a compact size make these units portable and efficient.

FEATURES-

- High power handling
- 62Hz - 20kHz, ± 3 dB
- Compact and portable
- Low distortion
- Smooth frequency response
- Custom Gray finish.



HR824

These close field monitors from Mackie have a wide deep response with exceptional detail. Each pair of these bi-amplified speakers has been clinically matched to ensure optimum performance.

FEATURES-

- 8.75" polypropylene woofer, 1" aluminum dome tweeter
- 150W Bass amp, 100W Treble amp
- Full space, half space and quarter space placement compensation
- 1/4" and XLR inputs
- Hi frequency adjustment, to frequency roll-off switch
- Frequency Response 39Hz to 22kHz, ± 1.5 dB



Hafler TRM-8

Powered Studio Monitors

Winner of Pro Audio Review's PAR Excellence Award in 1997, Hafler's TRM8s provide sonic clarity previously found only in much more expensive speakers. They feature built-in power, an active crossover, and Hafler's patented Trans-nova power amp circuitry.

FEATURES-

- 45Hz - 21kHz, ± 2 dB
- 75W HF, 150W LF
- Electronically & Acoustically matched
- Also Available!! TRM-6 Monitors



Ad Index & Advertiser

PAGE	PRODUCT INFO NUMBER	ADVERTISER
49	025	Aardvark
152	098	Acoustic Sciences Corporation (ASC)
140	090	Acoustic Systems
70	038	Acoustical Solutions
162	106	Acoustics First
184	•	AES Paris 2000
84	047	Akai Digital
61	032	AKG
IFC	001	Alesis
134	084	AlterMedia
11	006	AMS Neve
63	034	Aphex Systems
95	053	Apogee Electronics
126	076	Argosy
117	072	Ashly
139	088	Audio Composite Engineering
147	094	Audio Precision
133	183	Avalon Design
172-5	118	B & H Photo-Video
109	067	beyerdynamic
67	035	Bryston
96	054	Burlington/Maxell
154	101	Burlington/Sony
87	051	Bellari
51	026	CAD Professional Audio
111	066	Cakewalk Music Software
140	091	Caruso Music
135	086	Carvin
70	039	ConnectSound
132	081	Conservatory of Recording Arts & Sciences
143	093	Crest Audio
84	048	The DAT Store
6-7	004	dbx Professional Products #1
32-33	017	dbx Professional Products #2
62	033	Digibid
37	018	Digidesign
116	071	Disc Makers
81	044	Dolby
107	063	Dreamhire
82	045	EAR Professional Audio/Video
103	060	Eastern Acoustic Works (EAW)
47	023	Emagic

PAGE	PRODUCT INFO NUMBER	ADVERTISER
128	077	Europadisk
55	030	Event Electronics (PS6)
115	070	Event Electronics (RØDE NT1)
45	022	Eventide
161	105	Extasy Recording Studios
99	057	Focusrite U.S.A.
119	073	Full Sail
40	020	Furman Sound
132	082	Future Sonics
107	064	Guitar Center's Rhythm City
134	085	The Hollywood Edge
106	062	ILIO Entertainments
98	056	Institute of Audio Research
BC	125	JBL Professional
52	027	Joemeek/PMI
112	068	The John Hardy Company
26-27	014	Johnson Amplification
138	087	Kurzweil Music Systems
100	058	Lawson Microphones
162	•	Los Angeles Recording Workshop
14-15	008	Mackie (CFX/SRM450)
151	097	Mackie (HDR 24/96)
165	108	Mackie (M•800)
167	111	Mackie (D8B)
IBC	124	Mackie (1642-VLZ Pro)
2	002	Manley Laboratories
21	011	Mark of the Unicorn
126	115	Marshall
78	042	MediaFORM
131	080	Meyer Sound
48	024	Microboards of America
157	104	Millennia Media
79	043	Miramax Films
120	074	Mix Books #1
150	096	Mix Books #2
169	116	Mix en Español
178	120	Mix Online
86	050	mSoft
13	007	Neumann/USA
137	089	Neutrik
108	065	Northeastern Digital
59	031	Otari #1
97	055	Otari #2

PAGE	PRODUCT INFO NUMBER	ADVERTISER
105	061	Peavey
181	121	QCA
127	046	QSC Audio
9	005	Quantegy
130	079	Ramtech Industries
41	021	Rane
153	100	The Recording Workshop
203	•	Recording Industry Sourcebook
53	028	Rocket Network
22-23	012	Roland
68	036	Sabine
101	059	SAE Institute of Technology
166	110	SEK'D
155	103	Simon Systems Engineering
1	•	Solid State Logic (SSL)
85	049	Sonic Foundry
83	•	Sony (Oxford)
116	•	Sony (PCM-R500)
129	078	Soundcraft
69	037	Soundtracs
39	019	Spirit
54	029	SPL Electronics GmbH
153	099	Studio Consultants
179	117	StudioPro 2000
71	040	Summit Audio
29	015	Sweetwater Sound #1
163	107	Sweetwater Sound #2
204-5	122	Sweetwater Sound #3
206-7	123	Sweetwater Sound #4
3	003	Tannoy
18-19	010	Tascam (MX-2424)
73	041	Tascam (DA-40)
113	069	Tascam/WaveFrame
25	013	TC Electronic
141	092	TDK
154	102	Undersea Studio Lab
113	069	WaveFrame/Tascam
30-31	016	Waves
91	052	Whirlwind
166	109	Whisper Room
149	095	Yamaha
121	075	Z Systems
17	009	zZounds

—FROM PAGE 24, WELL, Y2CAME

be made that the collapse of a civilization becomes more probable and more devastating as its reliance on technology increases. Much like climbing a palm tree to reach a coconut, the further you go in your search for improving the quality of life, the further your fall if something goes wrong. Once you leave your roots, the potential for an abrupt and painful return exists.

Take me, for example. I exist today so that I may mix metaphors, as I have above, only because of technology. Some drunk ran a red light, and I got a Monel hip and a plastic eye socket. Another one did it a few years later, and I got a plastic and titanium jaw hinge and added to my collection of internal screws and pins. A kidney died as a result of my being sprayed with burning phosphor some 30 years ago, but two surgeries and some exotic drugs pulled me through.

IT'S ALIVE!

I am alive today because of the technology within me and the drugs I take. If enough of the internal modifications fail or if I can't get the drugs I need, I die. I know about reliance on technology. It is an unavoidable part of a society's evolution, but the price is magnificent—we are, by the very nature of what makes us strong, fragile.

Since a certain percentage of you reading this may not be quite as synthetic as me, try this. Think way back to 1999, when things were good and you still had power. What would have happened if your studio suddenly lost house sync? Or if your billing computer's hard drive had suddenly decided to write data over other data instead of where the operating system told it to? Nothing good. And how do we, the people, live with this constant threat of the very technology we depend on failing and damaging our personal lives? How do we integrate these organic and technological worlds? We develop both organic and technological personalities.

We know what AES/EBU, kHz, dB and THD are. We know what ISP, PPP, Ethernet and http are. We have even developed our technological personalities to the point of feeling that 1024 is a natural-sounding number. And so it is in the technical www.orld.

Yet we have built all this to make our real (organic) world a better place. When we come home at night and greet our mates or pet our cats, our

homes may be a little nicer because we developed our technical personalities to better utilize the technical world.

So now, as you read this by candlelight, it's easy to see that the integration of personalities from the organic natural world and the technological man-made world is crucial (yet apparently not always entirely achievable).

To live within modern civilization both personalities must coexist, with one or the other emerging to deal with the task at hand. But this dual-personality condition is not abnormal—it is a necessary adaptation to a technological civilization. So I think that both civiliza-

**The collapse
of a civilization
becomes more probable
and more devastating
as its reliance on
technology increases.**

tion and what we must do to live in it should have the same name—Sybilization. And so here we are...

THE SSC NEW YEAR'S COLUMN A PREDICTIONS

This winter is going to be pretty rough. Every time you think it's coming together, it will break yet again. Just keep in mind: What doesn't kill you makes you stronger.

COLUMN B

See? I knew it was going to turn out this way! I knew it! Civilization didn't make it to the end of 1999 only to be brought to its knees by man's shortsighted stupidity. Almost nothing happened. I admit that I avoided booking flights or elective surgery on January 1, but I wouldn't book that stuff on *any* January 1. I mean, pilots and doctors are right there at the same New Year's Eve parties that I go to, and they fall over with the same thud as the rest of us (although I do *not* put my pants on one leg at a time like they do).

Here is a list of everything that went down at my house at 12:01 a.m., January 1, 2000:

- A very old Panasonic DOS laptop
- Two ballpoint pens that also record and date stamp little audio notes
- An older JVS S-VHS deck with an

IR remote shuttle/editor control that date stamps

- Cable TV
- Me

And here is how I knew what went down at my house at 12:01 a.m., January 1, 2000. If you think about it, you realize that I have to write these columns months ahead of time. So I often have to research heavily and present an educated guess as fact, hoping that my base data is solid enough and my extrapolation accurate enough that the prediction is correct. Pretty spooky, but if I didn't do it, I could only write about stuff that happened three months before you read it—thereby assuring that it would be pretty boring. I dread totally missing the mark one month and making a complete fool of myself and the magazine, but then I guess I could just write the next column about how cool it really is to be a complete fool.

Anyway, here's how I did it this month. The first three items were easy. I did what you probably did—I set all the dates to the last day in '99 and checked out the devastation the next day. Item 4 is a ringer—I know that a local kid is planning on clipping the main feed somewhere before us as an act of 2k

Coming in *Mix*
March 2000

New Media

APPLICATIONS
& TECHNIQUES

INTERACTIVE
SOUND DESIGN

PRODUCT
SPOTLIGHT

MULTI-EFFECTS
PROCESSORS

LIVE SOUND

COMPUTER CONTROL

PLUS!

STUDIO DESIGNERS'
FINEST ADVERTORIAL
SUPPLEMENT

Ad Close: January 12

Materials Due: January 18

mini-terrorism. Item 5? Come on. Who doesn't go down on New Year's Eve?

So here we are. We got away with it. We made the silliest techno-mistake of all time (so far) but luckily did not have to pay for it with the collapse of Sybilization. Now if you know what Sybilization is about, you have read the other column, which means that you have read both columns, which I asked you not to do. I guess that shows me not to bother to ask you to do or not to do something...so I'll finish this month by just *telling* you some stuff, thereby removing any pressure on you related to the decision of whether or not to follow my requests. Besides, telling is what I do best.

THE SSC NEW YEAR'S COLUMN B FRINGE PREDICTIONS

I feel that 2k will go down in recording history as the true beginning of Virtual Audio. DAWs are going to make huge advancements this year, plug-ins will get dramatically better and their prices will drop more than we will ever see again in a one-year period. New I/O options will make streaming hardware recording

seem even more pointless than now

New generations of MP3 hardware and codecs might actually begin to sound acceptable, and recorder/player units will get very, very tricky toward the end of the year. Record companies will begin to *feel* the wall they saw the

**So here we are.
We got away with it.
We made the silliest
techno-mistake
of all time
but luckily did not
have to pay for it.**

writing on last year—the business of downloadable music will start to crystallize, and only the most progressive and brilliant of today's publication and distribution organizations will be able to make any sort of survivable transition. For these guys, 2000 marked the begin-

ning of the end of their world as they knew it.

The issue of piracy will become more acute, and the government will play its "planting the seeds of a concept designed to yield a solution at a later time" game. Meanwhile certain pirates will be shot, others keelhaunched under the ol' corporate jet.

I will do my first solo album. It will have absolutely zero analog audio on it—not a transfer, sample or punch. And original analog tracks from writing and practicing that I might want to use will be re-recorded from scratch—DDD all D way this time.

In closing, I urge that you let the elation of our near miss fuel your creativity but not cloud your vision. We wouldn't want our great-to-the-33rd-power grandkids to miss our wonderful music because they don't have electricity on January 1, 3000, to power their little yellow "My First Sony Holographic Time Dilation Live Music Blast From the Past Players," now would we? ■

SSC knew the world would never make it to 2k. He just knew it.

SSC knew we would make it! Never had a moment's doubt! Not one...

Where to Go When You Need to Know...

www.mixononline.com

Newswire Field Tests Features Studio Reports

New Products Opinions Article Archives Industry Events

Member Pages Trade Show Calendar Helpfile Cool Links

Education Directory Subscriptions "Talkback"

Horror Stories from Sessions & Gigs Industry Humor

.com Check Us Out!

IT'S A NEW CENTURY... ARE YOU READY?

MIX
Presents

Studio Pro2000

June 12-13, 2000

**New York Hilton & Towers
New York City**

JOIN the editors of *Mix* and leading production professionals for two information-packed days of panels, workshops and demos!

LEARN first-hand from the experts about the new technologies and techniques shaping the future of audio production—from Web audio and networks to new digital tools and audio formats.

MASTER the information you need to survive and succeed in today's rapidly changing music and audio market.

**If you attend only one conference this year,
make it StudioPro2000!**

Request your conference information and registration materials today! Contact Robert Irwin by TEL: (510) 653-3307, FAX: (510) 653-5142 or E-mail: robert_irwin@intertec.com



(L-R) Tony Sheppard, John Potoker, Thom Panunzio, Al Schmitt, moderator Dan Daley, Joe Chiocarelli, Thom Trumbo



An attendee addresses panelists with a question at StudioPro2000



(L-R) Allen Sides, *Mix* editor George Petersen, Dave Reitzes, Dave Collins

**"This information
is worth more
than a tube
microphone!
The industry
needs more
events like this..."**

**—Paul McManus,
Owner/Engineer**

WALKING THE GREEN MILE

—FROM PAGE 87, *THE GREEN MILE*

old-tech electricity comes up is the beloved Tesla Coil. I went to visit Park Meek, a marvelous propmaker who specializes in classic, mad scientist-style laboratory stuff. The Tesla Coil delivered as promised, a raspier, rapid-static texture. Then Park showed me his Jacob's Ladder—it looks like a big rabbit-ears TV antenna, eight feet tall and powered by *four* of those old transformers like the one I had just recorded, wired in series. The 60,000-volt arc would travel up the ladder, ripping and flanging all the way. I placed my Neumann capsules on a tiny X/Y mount, with active cables leading to the rest of the mic's electronics in my recorder bag. This allowed me to get a stereo shot from the narrow space between the ladder's twin poles, and track the arc as it traveled from bottom to top. Some really strange effects would happen when I would stand on a chair and gently blow the arc back downward with my breath and try to keep it dancing in place.

"Originally I had intended to rent some of these devices and record them 'properly' in the studio," he adds. "But I soon realized the beauty of the shop's acoustics—high ceiling, tiled floor and a lack of soft surfaces. This lent a cold, harsh atmosphere to the wider room shots of the sparks—quite suitable for the execution room, and keeping with Mark's goal of a realistic recording environment."

MAGICAL SOUND DESIGN

If the executions symbolize the brutal reality, then the healing scenes speak to the magic. John Coffey is a healer, not a killer. He cures the Tom Hanks character of a bladder infection, he saves the warden's wife and he fixes up the mouse, in a real Southern, laying-of-the-hands style. During those moments, swarms of insects leave his body—a physical manifestation of the healing—accompanied by a more ethereal track.

"In the healing scenes you see the lights glow, so we have some filaments vibrating," Lindemann says. "But I thought it would be interesting to record some actual sounds that people

make who do sonic healings using their voices. I wanted to have some sense that spiritual energy is moving through the room, an affecting presence. So I merged those vocals in with the filaments." Ken Johnson and John Pospisil then developed the insect sounds, the grand exhale when the poison leaves Coffey's body. To embody the evil that was manifest in the insects, Johnson processed Nazi war rally "Sieg heils" to add subtext and color.

The healings are crucial to the story and to the structure. The Tom Hanks character, through flashbacks and visions, comes to understand the gentle power of Coffey and the truth of how the two little girls were murdered. During the flashback scenes (introduced with knife rips), the sound is intention-

in different ways. I think it will be fun when you go back and watch the DVD after reading this article and hear all the clues we planted. I thought it was effective, without overdoing it.

"There's another sequence where there's a flashback of Farmer Dettterick [the girls' father] going into a barn with a hammer," he continues. "We took a screen door and made that a hammer sound, then we took the hammer sound and turned it into a heartbeat sound, which leads into a pulsing sound—tying all these moments together. The movie opens with a slow-motion shot of Dettterick and a posse trying to find the killer. Very surreal music and sound effects. In the production track, he opens his mouth and screams, 'Katie! Cora!' Rather than hear him speak, we took the



ally disjointed and oddly juxtaposed, sometimes offering signals, mostly mirroring the confusion.

"The whole movie is about the murder of the two girls," Mangini says. "So I wanted to plant clues all through the movie leading up to the discovery of who killed them. I recorded my 7-year-old stepdaughter, Jordynn, and her friends in the backyard on the swings—giggles, happy children-at-play sounds. Eric [Lindeman] then manipulated girls' laughter and used it in a variety of ways for some of the magic moments, especially as it associates with their killer. For example, there's a key sequence near the end of the movie where the killer's putting them in a barn, and he goes, 'Shhh. You talk, I'll kill her.' We took that 'Shhh' and used it as a sonic element in some of the magic moments. There's two other flashback sequences where we used girls' laughter for lights exploding and flashes of white light, massaged

little girls' laughter and modulated it to fit his mouth. It's really creepy. But you won't know what it is until you see the movie a second time."

The Green Mile will not be an easy movie to watch. A death row drama with a touch of magic, just in time for the holidays. Reportedly, some viewers had to walk out of early temp screenings because of the execution scenes. Yet it came in with the highest ratings from card screenings that Warner Bros. had seen in years. Executives were seen weeping at the early screenings, according to some reports, and it has generated significant buzz since the first-looks last summer. Don't be at all surprised if more than one member of the team walks up to the stage on Oscar night. ■

Tom Kenny is managing editor of Mix. He can be reached at Tom_Kenny@intertec.com.

—FROM PAGE 31, ON HOLD

not only shorter than review cycles, they're shorter than magazine ad deadlines. The Atlas IV, of course, was too new to make it to Digidesign's list, but since the previous models were there, I figured, what could go wrong? So that day an Atlas IV was on its way to me, with a 50-pin connector on the case so I could hook it up to my ancient NuBus-based Pro Tools system.

But it didn't work with my Pro Tools. My Mac saw it just fine, but as far as the Pro Tools card was concerned, I might as well have stuck a wad of chewing gum on the end of the cable. Wanting to avoid calling tech support at any cost, I went to Digidesign's Web site and did a search in their support database for any clues.

Despite my previous lack of success with such systems, this time I thought I found the answer: My old NuBus card needed a SCSI chip upgrade to run any new drives. So I called someone I knew at Digi, and he had a support tech named Tom call me an hour later. "Sure," Tom said. "Send it over, we'll upgrade the chip and get it back to you. Total downtime should be about a week. And here's my direct line if you need any help later on." Interestingly enough, though, he couldn't find the page in the support database that described the problem. I read him the URL that was printed on the page itself, but it wouldn't load. It turned out that someone had changed the page's URL but had forgotten to change the text on the page itself.

Sure enough, a week later the card came back, but accompanying it was a disturbing note from the service department: "SCSI upgrade already installed and working properly. Swapped card for new one anyway." I installed it, hooked up my new drive and...nothing.

I called Tom and got his voice mail. Two hours later, another tech, Beto Carvalho, called back. Beto's theory was that the drive wasn't terminated correctly. The drive itself uses a 68-pin cable, and he figured that when they wired it to the 50-pin connector I had requested, they left the other 18 pins hanging, without putting termination resistors on them. This would cause the card not to see the drive. And then he did an astonishing thing: He offered to have me send the drive to him, and he would install terminators for the 18 pins and send it back.

I was impressed by this generosity,

but figured I'd check with the hard disk vendor first, to see if this was true—I was also a little concerned that Digidesign's futzing around with it would void the drive's warranty.

No, said the vendor, that's not the problem—we always terminate the extra pins. But, they added very sheepishly, there is this other problem. The Atlas IVs are SCSI-3 drives, and Quantum, during their initial manufacturing run, forgot to make them backwards-compatible with

**Unfortunately, my
experience with most
online support systems
has not been
particularly fruitful.
I end up wasting all that
time...when I could have
been on hold.**

SCSI-2 systems. (My Pro Tools card used SCSI-2.) There was a firmware upgrade that could be downloaded from Quantum's Web site, but you needed to have the drive hooked up to a PC to use it. So my choices were: Bring the drive over to a friend with a PC (as if I had any) and do the download thing; send the drive back to the vendor and they would do the firmware upgrade; or send the thing back to the vendor and get a different drive. They offered me an IBM at the same price, with the same specs, which they knew was SCSI-2 compatible and which they would be happy to swap out for me. I insisted they pay shipping both ways, since this was their damn fault, and I had already paid to ship the Digi card across the country twice. To this they readily agreed.

Imagine my surprise three days later when the new drive arrived and I hooked it up to my computer—and it had 18.2 Gigs of space! I checked the invoice, and there was no mistake; they had sent me a drive twice the size of the one I ordered. (This meant the change factor in the storage dollar/byte ratio since 1986 had now jumped to 3,000.) And the invoice had another surprise: They were crediting my Visa card \$44. Furthermore, it worked with Pro Tools.

I called Beto back and told him the whole story, and he was mighty pleased

to hear the outcome. "People don't talk about their successes with tech support very often—usually they just complain about the problems," he said. "You know, I would love to write an article on how to contact and deal with tech support departments more efficiently. I deal with people every day who seem to know how to 'work the system,' and therefore get their problems solved more promptly, and other people who seem to do everything to slow down the resolution of their problems." Never one to pass up a good column idea, I suggested a collaboration. You'll see it in this space next month: Beto's Six Rules for Getting Good Customer Support — With Paul's Addenda and Corollaries.

So now that the calendar has ticked over, and some of us are collecting rainwater in buckets and eating fresh squirrel by the warm glow of a garbage-can fire, the need for tech support isn't going to go away. Just don't forget the flashlight batteries. ■

Paul D. Lehrman is looking for ways to download his brain onto some sort of more reliable medium. To read his thoughts on Y2K (last April), go to www.mixonline.com and click on "Opinions."

**COMPACT DISC • CASSETTE
& RECORD MANUFACTURING**

**P
X**

No Bob...
your EYES are fine!
BUT... THE PRINTING
on your latest CD
is REAL BAD!
Next time ...
...call QCA!

**WF
HIE
OPWB
TOMK
MKSEZTO
3456789**

**CALL TOLL FREE
1.800.859.8401**
For Your Free Catalog

QCA

Serving the Music Industry for Over 45 Years.

2832 Spring Grove Ave., Cincinnati, OH 45225
Tel: 513.681.8400 • Fax: 513.681.3777
E-mail: qca@pol.com • web: www.pol.com/QCA

CIRCLE #121 ON PRODUCT INFO CARD

Next Month

COMING IN MIX
FEBRUARY 2000

LIVE SOUND
EXPANDED LIVE
SOUND COVERAGE!

FEATURES

**Roundtable Discussion
on the Challenges of
Monitor Mixing**

Using In-Ear Monitors

**A-Z Guide to Wireless
Microphones Released
in the Past Year**

TOUR PROFILES

**Melissa Etheridge
Ricky Martin**

ALL ACCESS

**Tori Amos
Chris Cornell**

**ATTENTION
ADVERTISERS:**

**CALL (510) 653-3307 FOR
A 2000 MIX EDITORIAL
CALENDAR, SPACE
RESERVATIONS AND
COMPLETE ADVERTISING
INFORMATION.**

MIX

Visit Mix Online at
www.mixonline.com



Yamaha O2R

—FROM PAGE 62, THE STATE OF THE 8-BUS
backlit LCD display, and two 328 mix-
ers may be interconnected.

STUDIOMASTER MIXDOWN CLASSIC 8 (ANALOG)

Available in 16-, 24- and 32-channel configurations, Studiomaster's Mixdown Classic 8 provides a rackmount power supply and MIDI muting capability as standard fare (a full-width meter bridge is optional). With its split design, the Classic 8 has the ability to double the number of inputs at mixdown. Each input channel features balanced mic and line level inputs, plus an additional unbalanced (Line A) input, mic/line switching, phantom power, channel insert, 20dB pad, six aux buses and 100mm faders. Each channel employs Studiomaster's 3-band, two-sweep EQ design. This arrangement provides sweepable low and mid frequencies with high shelving, plus an EQ cut switch.

As a "split" console, the tape monitors on the Classic 8 are located separately from the input channels. The monitor section can be used for extra inputs when the tape returns are routed through input channels for remixing. This enables the 16-channel console (as an example) to accommodate as many as 34 inputs. Each of the eight subgroups has a dedicated LED bar graph, which can be switched to either the console's upper or lower set of tape monitors.

TASCAM TM-D4000

As Tascam's first digital mixer to employ motorized faders, the TM-D4000 provides 36 channels configured as 32 mono and two stereo—each with 4-band fully parametric EQ, six aux sends and dynamics processing. The mixer's 16 long-throw 100mm faders are layered to facilitate control of the 32 mono channels, which may be ganged to create additional stereo pairs. For flexibility during mixdown, the console provides eight fader groups and eight

cut groups. Depending on the type of equipment in-house, an engineer can add as many as three optional expansion cards: IF-TD4000 (TDIF), IF-AE4000 (AES/EBU) and IF-LP4000 (ADAT optical). A fourth card, the IF-AD4000, provides eight channels of +4dBu balanced analog I/O.

The TM-D4000 provides an onboard stereo digital effects processor. These signals can be assigned to either Aux 1-2 or Aux 5-6 and are returned at the stereo Digital In 2. Mixer channels 1-8 are the integral analog channels. These eight channels provide balanced XLR mic inputs with phantom power, 1/4-inch balanced TRS jacks and 1/4-inch TRS inserts. All A/D and D/A converters operate at up to 24-bit resolution. The console supports surround mixing and provides 80 user-definable snapshots. The TM-D4000 uses an external Windows PC for dynamic automation.

YAMAHA O2R

Now running its second-generation operating system, the O2R features a 40-input (16 XLR/8 line level), 8-bus configuration, compatible with all major digital audio formats (ADAT, TDIF, AES/EBU, Yamaha). It provides snapshot and dynamic moving fader automation and supports 24-bit recording with dual 32-bit internal processors. Standard 2-channel digital I/O support includes one AES/EBU and two S/PDIF connectors. The mixer has 20-bit A/D and D/A converters and offers extensive support for MIDI remote control. Phantom power is supported. Available options include a meter bridge, a variety of cards supporting the popular multichannel digital formats and wood side trim.

Although the oldest digital mixer on the market, the O2R is among the most powerful. With four card slots, the ability to configure the mixer for a variety of digital I/O formats is one of the O2R's key attributes. There are also provisions for adding a second card for effects processing. The O2R has a comprehensive, variable-contrast backlit LCD display and has 4-band parametric EQ and dynamics on every channel. Version 2.0 software has added improved features for automation—including timecode offset, timecode capture and surround panning capabilities. The O2R is supported by a number of third-party suppliers, including TC Electronic, Apogee Electronics and a variety of software vendors. ■

Roger Maycock is a technical consultant to Mix.

—FROM PAGE 70, BRYAN ADAMS

with two Scully ¼-inch machines locked up in sync! Seriously, we have been with Apogee since the beginning with the AD/DA-500s. We now have the AD8000 for 5.1 mixing and the latest PSX-100s in all rooms, for 24-bit, 96k mixing.

Is the Pro Tools room linked to the other rooms in some way, for transfers? Yes. All of the rooms are interlocked to each other, including the Pro Tools room. It is sort of essential to do these days, especially when you have a group in using two rooms at a time, or to download a track to a Pro Tools operator and still continue to mix or record. It was a great plan.

Other than it being very well-equipped with plenty of DSP Farms, lots of TDM plug-ins, a Yamaba 02R digital mixer, extra outboard gear and a very comfortable couch, is there anything else about it that we might be impressed by? The tea is very nice...

You used to have an SSL 4072 G+ in the basement of your house, which I quite enjoyed mixing on. You moved it out last summer, but not to your new place. Why did you move it, where did it go, and will you be putting it in The Warehouse at any point?

It's being reinstated as we speak into our second mix room, Studio Three. That means we will have our recording room [Studio One] and two mix rooms [Studio Two with an SSL J Series, and Studio 3 with the SSL G+]. The new room opens in June.

So what's that room going to be like? Will it have a recording space?

Naturally. There are two recording rooms adjacent to the main studio. They will have a similar ambience to the other studios, only this mix room will have the SSL 4072 G+.

Do you have any other future plans for the place?

There is a lot of room to expand, and we may put in a film mixing studio down the road, but we're taking it slowly. It's enough to have a virtual soundstage and three studios working. Did I mention our golf course?

Do you still like to dress in women's clothes...like in the old days?

Yes, of course, I'm so glad you asked.

THE MIC COLLECTION

How did you get into collecting old mics? Boredom on the road! I spent a few years scanning the flea markets of America for old mics for this mythical glass case. It was great fun, and the hunt was a challenge. Eventually, my

road crew got into it, too, so I would get calls in advance of the gig telling me about a certain guy that knew someone that knew a guy that had a mic in his basement. I met some weird people searching for mics. They are a strange breed, mic collectors.

Where did you find them all?

Some of the best ones I found were in Europe. The Paris flea market was a bonanza. I could hardly believe my eyes. I found some extraordinary specimens there. I found a few good ones in Sweden too, but alas, I've been back since, and it's not the same.

**I spent a few years
scanning the flea
markets of America
for old mics for this
mythical glass case.**

**I met some
weird people searching
for mics.**

**They are a strange
breed, mic collectors.**

Do they all work?

I'm not sure. I collected them more for aesthetic reasons than practical ones, but I know all my vintage RCAs work; I've used them. There are a few older Neumanns that you can't get the original valves for anymore, so they are ideal for the case.

Rumor has it that there are still many more that you haven't found a place for yet. Can this be true?

Yes. I have two or three other boxes of mics that I have no room for. I may trade them to collectors at some point.

THE DESIGN

As you know, I have my own little mix room in the basement of my home, where I am the only client. I love the freedom and control it gives me. I would think that a large, commercial studio like The Warehouse is a completely different animal. As a recording artist who spends most of his time in other parts of the world, do you enjoy owning it?

I love it. It's part of my roots in Canada.

Since I spend most of my time in England or on the road somewhere, I love coming back to Vancouver and spending time in this wonderful space. I wish I'd built an apartment in it for myself. I have been lucky in finding a good manager and, of course, Ron. Had he not been as into it, it would never have happened.

Did you enjoy building it?

After I had the right team together, it was a joy, but the usual pitfalls await anyone who wants to build something like this: primarily, architects and construction people who don't know about acoustics. Poor Ron had to explain time and time again the principles of sound isolation!

If you had it to do over again, would you?

Yes, and probably for half the price! But you just don't learn until you get in there and roll up your sleeves and do it. *Is there anything you would do differently?*

Yes, but it's all hindsight. I made errors in design, errors in choice when it came to contractors and outside designers, but I couldn't have done it any other way. I was on the road for most of the construction phase, so there were bound to be a few surprises when I finally got back and saw what was going on.

You've worked in a lot of studios. Did any of them influence the design of The Warehouse? If so, which ones in particular, and how?

I wanted all kinds of things I'd seen. For example: isolation booths from Power Station, a Neve recording room like Air Studios in Oxford Street, a fantastic collection of vintage and modern equipment like A&M, and huge spaces to work in like the Sony film stage in L.A. I think we have a great balance of all of the above.

You and Ron must have worked with an architect on the design of the place. Who was he or she, and how did you decide on who to use?

We used a local firm of architects, namely David Simpson, to get us around the seismic curves and to guide us through the city, and Ron did the sound design completely, and I laid out the space the way I wanted it.

Do you have any live echo chambers?

We are intending on building two in the basement, we just have to get the mic collection out of there! ■

Bob Clearmountain needs no bio. His name has become synonymous with engineering.

AES PARIS 2000

19 - 22 FEBRUARY

AUDIO

PALAIS DES CONGRÈS

PORTE MAILLOT - PARIS - FRANCE

For the 6th time, the AES Convention is returning to Paris, in the new Palais des Congrès. With some 7.700m² of exhibition space, plus demo-rooms and conference halls, the 108th AES Convention & Exhibition will surpass itself as the most important pro-audio event in Europe, setting trends for the newest audio technologies.

The famous city of Paris is particularly appreciated as a convenient location for international events. A wide choice of hotels at all rates is available, many of them within walking distance, and the venue benefits from very good communications (planes, trains, road, public transport).

At a time when technology progresses day by day, do not miss the opportunity to be part of the mainstream. The 108th AES Convention will be your companion to success.



AES PARIS 2000

108TH AES CONVENTION - PALAIS DES CONGRÈS - 2000-02-19/22

For further information

Please contact : AES Europe Convention Office

Zevenbunderslaan 142/9 - BE-1190 BRUSSELS, Belgium

Tel : +32-2-345.7971 - Fax : +32-2-345.3419

E-mail : 108th_exhibits@aes.org - Internet : <http://www.aes.org>



MARKETPLACE

Team Up with **SONY** & **HAVE INC.** PROFESSIONAL MEDIA

Your ADAT Specialists!

Call **HAVE** at **1-888-387-4202** for a FREE Cable or Tape Catalog!

Visit our website @ www.haveinc.com or e-mail us @ have@haveinc.com fax: 518-828-2008

HAVE INC. Audio & Video Technologies
Since 1977; Doing Business by "The Golden Rule"

CIRCLE AD NUMBER 250 ON PRODUCT INFO CARD

MARQUETTE AUDIO LABS

New, Used & Vintage Recording Equipment

Specializing in Custom Racking

- Neve • Telefunken
- Siemens • Calrec
- Langevin...and more!

Phone: 510-581-3817 • Fax: 510-581-3917
www.marquetteaudiolabs.com

CIRCLE AD NUMBER 252 ON PRODUCT INFO CARD

EARTH DISC

cd rom • vinyl • cassette • mastering • graphic design • printing

\$1299.00 500 CDs
we do it all
package includes:
graphic design/film
full color 2 page/4panel insert
3 color on cd printing/glass master,
jewel box, shrink wrap

\$986.00 500 CDs
package includes:
full color 2 page/4panel insert
3 color on cd printing/glass master,
jewel box, shrink wrap

\$1385.00 1000 CDs
package includes:
film separations
full color 2 page/4panel insert
3 color on cd printing/glass master,
jewel box, shrink wrap

- Free Barcode
- Fast, reliable and friendly service
- Serving you in Florida, California, Minneapolis

1.800.876.5950

CIRCLE AD NUMBER 251 ON PRODUCT INFO CARD

DRIVERS:

- AIRBORNE
- ATC
- AUDAX
- DYNAUDIO
- ETON
- LPG
- MOREL
- PEERLESS
- SCAN-SPEAK
- SEAS
- VIFA
- VOLT



The SM75-150 3" soft dome mid-range by ATC.

ATC drivers are renowned for their reliability and performance. The SM75-150 combines high sensitivity with extremely low distortion and a usable frequency response from 300Hz to 4000Hz.
Contact Solen for more information.

CUSTOM COMPUTER AIDED CROSSOVER AND CABINET DESIGN

HOW TO BOOKS

Call, write, email or fax for the Solen '98 Catalog.

An \$8.00 purchase price will be charged to non-professionals and discounted off the first order over \$50.00. Businesses and professionals may request one copy free of charge.



SOLEN INC.
4470 Avenue Thibault
St-Hubert, QC, Canada J3Y 7T9
Tel: 450.656.2759
Fax: 450.443.4949
Email: solen@solen.ca
Web <http://www.solen.ca>

CIRCLE AD NUMBER 253 ON PRODUCT INFO CARD

We Buy Used Gear!

Visa, MasterCard, AmEx, Discover accepted
www.shrevesystemsaudio.com

ADAT Studio Pack

Includes:

- *LX20 20 Bit Digital Audio Recorder
- *Studio24 Recording Console
- *Nanoverb Digital Effects Processor
- *Nanocompressor Stereo Compressor
- *cables Included
- *speakers not Included

Lowest Prices on the Planet!

Shreve Systems Audio

1-800-214-9222

1200 Marshall St
Shreveport, La 71101

MOTU 2408
Multichannel Audio System
for Mac or PC

ONLY \$849

Record up to 24 analog inputs at once, then mix and master-all inside your computer!

Alesis ADAT's in stock!
Call for BEST Prices on Earth and In Cyberspace!

Check out these brand new products from AKAI!

AKAI MPC2000XL
AS LOW AS \$1,249

AKAI DPS12v2
AS LOW AS \$899

Trade in your ADAT!

CIRCLE AD NUMBER 268 ON PRODUCT INFO CARD



vintage king audio

www.vintageking.com

New or Used Package Deals Buy. Sell. Trade

Inventory Includes Over 250 Vintage EQ/Pres And We Have More Than 75 Tube Mics in Stock

AKG Elam 251/C12/C12a/C24/C28/C60-61/D12/D25/D30/D45/224/414/422/451e;
AC701's NOS; ADA STD-1; ADR COMPEX Vocal Stressor;
ALAN SMART CL1+2; AMS RMX16/1580s; AMEK Hend/MotzarU/Remb;
API 1604 W-16trk mntr/325/mic pre/lunch box/oscillator; Altec 1567;
COLES 4038 new/used; CALREC pq15/1061/1161/AM6-17; DBX 166;
DOLBY SR racks; DRAWMER DS201; EAR 660 used; ECKMILLER Eq;
EMT 250; FAIRMAN new; FLICKENGER 3-band discrete eq's;
FOCUSRITE ISA115/130 dynamics/215/315; GATES stereo tube comp;
HELIOS discrete eq/pre; KLARK TECH. DN780; LANGEVIN AM16;
LEXICON PCM60/70/81/480L/LXP1-5-MRC; MARANTZ mod. 5/8 tube pwr amps;
NEVE CONSOLES
8014 frame/Melbourne/8058/VR/80 series 36x24;
NEVE MODULES
1057/1066/1073/1081/2053/33114/33314/
32264a/2254/2262/3415/1271/1272/1279;
NEUMANN
U47 short/Telefunken U47/Fet47/U48/M49cons. pr/M249/UM57/UM70pr
U64pr/KM64pr/KM264/U67/U87/582/KM53/54pr/56pr/256/CMV563
SM69tube/SM23/Leipzig7151;
NTP comp/lm; PULTEC EQH2/EQP1A3/EQP1; PYE comp/lm;
QUANTEC Room Simulator; ROLAND SH325 flanger Dim/D; Scamp Rack
Schepp 221b matched pr; SPENDOR SA300;
SSL 4048 e-g/4056; STUDER A800MKIII/A820/A827;
TELEFUNKEN V72/76/V76s/V76m/77/78/v672/v676/W695eq/V761z comps;
TRIDENT B range 24x8/28x16;
UREI 1176 black/1178/LA5; VALLEY Leveler; YAMAHA SPX90; 3M M56.

Please inquire about products not listed
info@vintageking.com Phone (313) 965-0645 Fax (313) 964-3338

CREDIT CARDS ACCEPTED FINANCING AVAILABLE

CIRCLE AD NUMBER 269 ON PRODUCT INFO CARD

We won't Shag you

1000 BULK CDs 60¢ each

MEDIA

services

1000 2-PANEL Full color over Black with full COLOR tray CD PACKAGE \$1195 (all films included)

1-888-891-9091
www.mediaonline.com

CIRCLE AD NUMBER 271 ON PRODUCT INFO CARD

MAKE MONEY MAKING CDs

Lease your own duplication shop!

Duplication suite #1
Inferno 10 Bay 8x Tower • Rimage Thermal CD Printer w/autoloader • professional overwrapping system
Lease as low as \$39.00 per month*

starting from \$159.00 per month*

200 CDs + an hour possible!

the Inferno



American Duplication Supply
800-617-3877 • 978-658-2502
www.superdups.com

* used to demo only. Quantity and availability limited.

CIRCLE AD NUMBER 270 ON PRODUCT INFO CARD

CD R 8x Media:
Mitsui spindle...\$1.27
Mitsui jewel case...\$1.47
Yuden printable spindle...\$1.67
Ritek 80 min spindle...\$1.59

ALL PRICES BASED ON 100 PIECES

CD-RW...CALL
CD-R Silk Screening Available

CD-RECORDER BUNDLES
Plextor 8x20...\$499
Also Available Yamaha, Teac and Panasonic
Rimage Printer Bndl...\$3,199
AFFEX CD Color Printer 1440 dpi...\$1,399
CD LabelMaker...\$29

DUPLICATORS:

Replica MediaFORM
SA1000 1CD-R \$949
CD5900 w/ 8CD Recorder..... \$5,299

CD3704 Autoloader w/ 4 CD Recorder..... \$7,199
CD3706P Autoloader w/ 6 CD Recorder & Printer... \$15,999

FOR CD DUPLICATION... CALL

Shimad
1-888-4-SHIMAD
toll free 888-474-4623 PH. 650-493-1234
www.shimad.com FAX 650-493-1333

CD R PLANS 89¢

CIRCLE AD NUMBER 272 ON PRODUCT INFO CARD

VT-2 Dual-Channel Vacuum Tube Microphone Preamplifier
Anyone who has heard it knows...



D.W. FEARN

www.dwfearn.com

610-793-2526

810-793-1479 fax

PO Box 57 • Pocopson, PA • 19366 • U.S.A.

CIRCLE AD NUMBER 273 ON PRODUCT INFO CARD

THICK AS A BRICK

The new Large Format
ATR-102 1-inch stereo
mastering recorder.

For analog sound depth
and density beyond
all digital comparisons.

Listen.

Believe.

ATR SERVICE
COMPANY
AMPEX SPECIALISTS
717-852-7700
www.atrservice.com



CIRCLE AD NUMBER 276 ON PRODUCT INFO CARD

24Track2ADAT.com

24Track2TASCAM.com

ADAT PROTOOLS TASCAM 24TRACK

305-604-9210

APOGEE TRANSFERS - SAME DAY SERVICE

INTERNATIONAL ORDERS WELCOME

DIGINOTE MUSIC INC. 407 LINCOLN ROAD, SUITE 5C/MIAMI BEACH, FL 33139

CIRCLE AD NUMBER 274 ON PRODUCT INFO CARD

CD RECORDER/COPIER



DREAM NO MORE, the CDxpress
is here! It's a CD Recorder, CD
Player, and CD Copier, all in one
easy-to-use machine. No SCMS.

Other Services at Princeton Disc:
* 24 Hour Turn-around Diskette or
CD Duplication.
* Bulk Diskettes and CD-R's.
* CD Replication

- * Copies any CD (music, SOFTWARE, etc.)
onto low cost CDR blanks.
- * Records analog or digital audio from RCA,
Coax, XLR, or Optical inputs.
- * Makes "RED BOOK" compliant copies.
- * Copies a 30 minute CD's in 4 minutes!
- * Automatic sample rate conversion: 32Khz
or 48Khz to 44.1Khz.
- * 8X Copying NOW AVAILABLE!!

PRINCETON DISC from **\$799.95**

800-426-0247

www.princetondisc.com

CIRCLE AD NUMBER 277 ON PRODUCT INFO CARD

Class A Vacuum Tube Signal Processors



MDP-1 Mic/DI Preamp

The ultimate front end for high resolution recording

OCL-2 Optical Compressor

Smooth dynamics processing without coloration

6386 Variable-Mu Limiter

Classic compression using the same tube as the Fairchild

At Pendulum, our modern tube designs
provide superior audio performance and a
level of clarity, intimacy and detail that is
unattainable with vintage tube designs.

Pendulum Audio

P.O. Box 338, Gillette, NJ 07933
(908) 665-9333

Hand-built in the USA - Factory-direct pricing - www.pendulumaudio.com

CIRCLE AD NUMBER 278 ON PRODUCT INFO CARD

WORLD MEDIA GROUP INC.

Mention this ad
and get
a 3rd Color on Your
CD label FREE!

THIS IS IT... "THE BOSS IS GONE" RATE

COMPACT DISC - CASSETTE DUPLICATION
LOWEST PACKAGE PRICE IN THE INDUSTRY
TIRED OF SEARCHING FOR THE BEST PRICE?
TIRED OF TRYING TO UNDERSTAND ALL OF THE SMALL PRINT?
CALL HOLLY TODAY. LET HER JUGGLE THE DETAILS FOR YOU.

CHECK OUT THESE PACKAGE PRICES	
500 CASSETTES	= 955.00*
1000 CASSETTES	= 1320.00*
500 CD'S	= 1556.00*
1000 CD'S	= 2036.00*

* THESE PRICES WILL BE DISCOUNTED IF YOU HAVE ELECTRONIC FILES FOR YOUR GRAPHICS.

WHAT'S INCLUDED IN THIS PRICE...EVERYTHING!
EVERYTHING FROM GRAPHIC DESIGN TO PACKAGING TO FREIGHT. OVER-RUNS INCLUDED.
IF YOU GET A BETTER PACKAGE PRICE, SHOW US WHAT YOU GOT AND WE WILL BEAT IT!

737 E. 30th Street, Indianapolis, IN 46219
Phone: 317/549-8484 • Fax: 317/549-8480
sales@worldmediagroup.com • www.worldmediagroup.com

CIRCLE AD NUMBER 279 ON PRODUCT INFO CARD

Incredible Prices

New White Printables

Taiyo Yuden Sale

TY CD-R's available now - including
White Armor Protection
White Printables (Fargo-Cannon-Epson)
Gold CD-R's in Spindles/Jewel boxes
at incredible low prices.

Call Now APDC Corporation
Phone: 1-800-522- APDC (2732)
(201) 568-6181-apdc@worldnet.att.net

CIRCLE AD NUMBER 275 ON PRODUCT INFO CARD



MERCURY RECORDING EQUIPMENT CO.

Makers of *All Tube and All Transformer* Classic Recording Equipment
Ph. (510) 581-3817 • www.mercury-rec.com • Fax (510) 581-3917

CIRCLE AD NUMBER 280 ON PRODUCT INFO CARD

S
P
E
C
T
R
A

SOUND TECHNOLOGY
Instrumentation and Automation

Transform Your PC Into A Powerful Spectral Analysis System

Call To Order 1-800-401-3472
Fax: 408-378-6847
Info@soundtechnology.com

http://www.soundtechnology.com
FREE Softest Demo

S
E
R
I
E
S

The Best In Test offers a totally new dimension in Audio Testing...

CIRCLE AD NUMBER 281 ON PRODUCT INFO CARD

Power House
MUSIC LIBRARY
www.PowerHouseMusic.com

Over 800 Selections on 21 CD's
License-Free Buyout Music
Great writers Live musicians Real instruments!

1-877-2-BUYOUT

THE BRITISH SIDE

ROCK THE HOUSE

WORLD BEAT

FUNKY STUFF

JAZZ

CHRISTMAS TIME

ON THE ROAD AGAIN

LACINGS

POWER TOOLS

ON THE EDGE

WHAT'S NEWS

TIME TO DANCE

CLASSICAL STRINGS

FIRST IMPRESSIONS

CHILD'S PLAY

GUITAR WIZARD

BRAND NEW DAY

THE GAMES

PIANO ROMANCE

COMEDY

THE BIG WHOOSH

CIRCLE AD NUMBER 283 ON PRODUCT INFO CARD

Herman Miller

800-883-9697
www.sittingmachine.com

AERON
CHAIR

CIRCLE AD NUMBER 282 ON PRODUCT INFO CARD

"If you like the LA-2A, you'll love the Requisite L1."
M. Sokol EQ Mag

"I liked the Requisite PAL so much, I bought a pair for myself."
W. Szalva Mix Mag

Compressors • Mic-Preamps • Equalizers • DIs

818-247-2047
requisiteAudio.com
Call for Dealer Locations & Factory Direct Specials

CIRCLE AD NUMBER 284 ON PRODUCT INFO CARD

WORKSTATION MONITORING SOLVED

SL2 Stereo Level Control

LS3 Line Level Selector

Coleman Audio
(516) 334-7109
FAX (516) 334-1420
colemanaudio.com

3 Stereo source selections
Balanced in & out
Passive signal path
Accurate tracking to .5db

CIRCLE AD NUMBER 285 ON PRODUCT INFO CARD

CLASSIFIEDS

MIX Classified Ads are the easiest and most economical means to reach a buyer for your product or service. The classified pages of Mix supply our readers with a valuable shopping marketplace. We suggest you buy wisely; mail-order consumers have rights, and sellers must comply with the Federal Trade Commission, as well as various state laws. Mix shall not be liable for the contents of advertisements. For complete information on prices and deadlines, call (800) 544-5530

Acoustic Products

ARCHITECTURAL ACOUSTICS FROM Professional Audio Design, Inc.

- DESIGN AND CONSULTATION FOR EVERY PROJECT - NO MATTER THE SIZE OR BUDGET
- EXCLUSIVE U.S. REPRESENTATIVES FOR MUNRO ASSOCIATES DESIGN, LONDON
- ROOM ANALYSIS AND MONITOR SYSTEM TUNING
- CUSTOM DYNAUDIO/MUNRO MAIN MONITOR SYSTEMS
- CUSTOM WIRING SYSTEMS DESIGNED AND INSTALLED
- EXCLUSIVE U.S. RESELLER FOR PRE-OWNED SSL CONSOLES

V (781) 982-2600 F (781) 982-2610
www.proaudiodesign.com

THE SYSTEMS COMPANY
RECORDING STUDIOS • MASTERING
FILM • POST • BROADCAST

**Professional
Audio
Design
Inc.**

Acoustics by db
...all the others are just brokers.

Building a project studio?
Designs from existing plans start at \$1,000 per room.

www.home.earthlink.net/~ob1db

- Total studio concepts designed by creative people.
- Control rooms, studios and turnkey packages.
- Wiring system design, custom cabling & full installations.
- Consultation & advice on equipment or system choices.
- Room tuning, noise problems.
- Existing plans, custom traps.
- Equipment packages with used & vintage consoles, 24 tracks, mics & processing available.

New products from Quested • Daking
TL Audio • Optifile • Sontec • Alan Smart
Trident • Prizm AD/DA & Mastering eqs

1194 Walnut St. Suite 205
Newton, MA 02461
617 969-0585 • fax 617 964-1590
email ob1db@earthlink.net

Neve 8068/8058/8036 • VR72FF/VIII-48/VI-48
SSL 4056G+ ULT/6064E/G+4048E/G
Flying Faders 34 ch sys • Trident 80C/80B
Neve 8128 56 GML • API 3224 • Trident TSM
Otari MTR90 MkII/III • MX80 • MTR100 • Radar I
Studer A827 • AE20 \$30K • A820 w/SR/rem/loc
Studer A800 MkIII • Sony JH24 • APR24
EMT 250 Reverb/251/140 • Lex 480L 4.0 • 224XL
AKG C24 • C452EB • C12 done • C28 • C60
AKG C414EB Silver • Neve 1066 • Shep 1073
SMALL AFFORDABLE SPECIALS
Trident 24 44 ch \$11k • Studer 169 mixer \$3k
Amek Big 28 Dyn \$16k • Cad Maxcon II \$5.5k
Neumann U87A new \$2k • UREI 813C pr \$2k
Urei 1176LN: \$2.1k • 1178: \$2.3k • LA3A: \$1.1k
Tascam MSR24S \$5K • AMS RMX16: \$3.5k

Building Studios & Keeping
'em Alive for 29-30 years!

SOUNDDROOM.NET

PROFESSIONAL MODULAR
Sound Isolation Rooms
By Calvin Mann

(541) 330-6045
Build It Yourself Kits Too!

SILENT
56 Noroluck St., Northampton, MA 01062
INFO (413) 584-7944 • FAX (413) 584-2377
ORDER (800) 583-7174

info@silentsource.com • www.silentsource.com
AcoustiCore Fabric Panels • Sound Barrier
Isolation Hangers • A.S.C. Tube Traps
Silence Wallcovering • WhisperWedge
Melaflex • S.D.G. Systems • Technifoam
R.P.G. Diffusers • Sonex • Sound Quilt

COMPUTERS FOR MUSIC

Preconfigured for Acid, Cakewalk, CD Architect, Cubase, Emagic, Pro Tools NT, Sound Forge, Soundscape, more. Featuring audio & MIDI hardware from Event (Daria 24, Gina, Layla), MOTU, Opcode & Terratec. Optimized for MIDI sequencing, hard disk recording, CD-R mastering & duplication. Desktop, tower & rackmount configurations available.

www.wavedigital.com
(877) 653-0709

Employment Offered

SERVICE MANAGER WANTED

Sweetwater Inc. is seeking a qualified Service Manager to lead our professional Service Department.

The ideal candidate has a background in technical service and repair, and extensive experience in leading technical service/support teams of up to 20 or more people. Outstanding customer contact and problem solving skills are essential.

Sweetwater offers incredible growth opportunities, competitive salaries and a complete benefits package. Contact Kristine Haas, Director of Human Resources, at (800) 222-4700 ext. 1050, fax us at (219) 432-1758, or e-mail us at careers@sweetwater.com.

Sweetwater
music technology direct

Business Opportunities

**SINGERS! and DJs!
FREE REPORT!**

MAKE \$1500
PER WEEK
PERFORMING
IN CLUBS

PROSINGERS
ATTN: PAT
P.O. BOX 650, PINELLAS, FL 33780

SOUND EFFECTS WANTED

Company looking for original
SFX in all categories.
Prefer large collections.
Leave message @
(415) 472-3023

Computer Products

Shimad

Full line of CD-Duplicators,
CD-Recorders, CD-Printers
and CD-R Media
1-888-474-4623

SEE OUR AD IN MARKETPLACE pg. 188

LENRD® Is Cheap & Easy. And He Wants To Grab Your Bottom.



Our LENRD Bass Trap is the smallest, most affordable, most foolproof & flat-out best performing bass trap on the market today.

In fact, so many of our big-name clients are using LENRDs, there's not enough room on this whole page to list 'em all! You hear LENRDs at work every day on national TV & radio networks, in big-budget motion pictures and on major label releases by chart-topping artists. Top studio designers use LENRDs instead of larger, more expensive, "conventional" low frequency traps.

Famous people love LENRD because he's phenomenally effective at calming the room modes (low frequency spikes) that color their sound. Plus, LENRDs come in 12 colors of long-lasting Auralex Studiofoam™ and don't cost an arm & a leg.

Based on physics, all rooms have inaccurate low frequency response. In fact, some of the world's most famous studios have bass traps 6" thick(!), so your room definitely needs low end help. If you want trapping that's easy & affordable, LENRD's your guy!

Auralex

www.auralex.com • (800) 95-WEDGE • Fax (317) 842-2760

Sound Barrier, Diffusers, Bass Traps, Studio Design & More! Available Through Top Dealers Nationwide

**IF YOU HAVE A JOB
VACANCY, CONSIDER
THE 50,000+
READER'S OF MIX!**

Place your next
employment ad
in Mix Classifieds

Call Robin Boyce-Trubitt

(800) 544-5530

mixclass@intertec.com

Employment Offered

RECORDING ENGINEER Job Opportunity

Denver Center Media, the award-winning recording studio & teleproduction facility at the Denver Center for the Performing Arts, is looking for a qualified recording engineer w/at least 2 years of professional exp. Salary range mid- \$30-40k w/full benefits. Must be solid w/Pro Tools post, mixing sound-to-picture & recording/mixing multitrack music sessions. If you confidently know your way around a mixing console & have a good sense of humor, please apply. See our website: www.denvercenter.org (click video & film). Send resumes to: Dirk Olson, dolson@star.dcpa.org.

LOOKING FOR A GREAT CAREER? THEN LOOK NO FURTHER!

MUSIC SALES • PRINT & WEB
DESIGN • CONTRACTING •
INSTALL TECH • TECHNICAL
SUPPORT Ask for Kristine Hass!

Sweetwater
music technology direct

800-222-4700

www.sweetwater.com
careers@sweetwater.com
5335 Bass Road, Fort Wayne, IN 46808
(219) 432-8176 • FAX (219) 432-1758

School of Music Indiana University Bloomington Notice of Anticipated Faculty Vacancy

Audio Department
Director of Recording Arts
Tenure-Track Position
Appointment Effective Beginning August 2000

Responsibilities: Supervision of recordings for the School of Music & special recording projects. Admin. responsibilities as Chair of the Audio Dept. Teach undergraduate majors in courses such as classical music recording techniques; editing & prod.; history of audio recording; popular music recording techniques; incl. multitrack recording & prod.; basic electricity & electronics; advanced courses such as audio electronics & studio maintenance/repair. Service on School of Music committees & in departmental service activities; recruitment is expected.

Qualifications: Ability to work effectively with dept. colleagues in an active audio program, including hands-on involvement with audio productions; recording approximately 400 musical events each year & CD releases for the School of Music. Demonstrated leadership abilities & experience in working effectively with a professionally active & demanding performance faculty. Advanced degrees pref.; extensive professional experience will receive equal consideration.

Salary and Rank: Commensurate w/qualifications & experience. Send letter of application, three letters of recommendation, curriculum vitae, other credentials to:

Audio Search Committee
c/o Eugene O'Brien, Associate Dean for Instruction
School of Music - Indiana University
1201 E. Third Street
Bloomington, IN 47405

Please do not send recordings unless requested to do so

Equipment Financing

EQUIPMENT FINANCING

- ♦ FAST, EASY APPROVALS
- ♦ We Specialize in Audio-Visual Equipment
- ♦ No Financials Necessary
- ♦ True Lease or Finance Lease Option
- ♦ New or Used Equipment

LOANS BY PHONE

Call Jeff Welter

(800)699-FLEX

24hr. Fax (972)599-0650

FLEXLEASE, Inc.
COMMERCIAL EQUIPMENT FINANCING

Contact Us at Our
Web Address:
www.flexlease.com

Check Out the MARKETPLACE Section for
New Equipment, Duplication Services, Maintenance—
You Name It!

■ STARTS ON PAGE 185 ■

A/V Equipment Leasing

Specializing in Audio
Video Equipment

- Min. 6 Months In Business
- No Down Payment
- No Financials Required
- New & Used Equipment
- Upgrade Existing Leases

Lease To Own

Visit Our Web Site For
Applications, Qualifications,
The Lease Process

www.lfci.net

LFCI

Call **800 626 LFCI**

We Are Direct Lenders

Equipment for Sale

Hard Drives for Digital Audio

Audio Hard Drives CD Recorders Tape Backup DVD CDR Media

BIG DISC Computer & Audio

Your Digital Audio Storage Experts - Now in our 10th Year!

Software - Soundcards - Plug-ins - Converters - Mac & PC DAWs - Midi

toll free (877) big disc (877) 244-3472 new site www.bigdisc.com

Pacific Pro Audio

The complete source for Analog & Digital Equipment from Aardvark
to Z-Systems ... with honest advice at the best price.

(800) 932-7524

www.pacificproaudio.com

1100 Virginia Street # 202, Seattle, WA 98101

Professional Audio Design

THE SYSTEMS COMPANY

- Exclusive factory authorized U.S. agent for pre-owned Solid State Logic consoles.
- US representatives for Munro Associates studio design and custom monitors.

QUALITY
EXPERTISE
VALUE

- In-house service, custom wiring design and fabrication and installation services.
- New, used and vintage equipment sales.

Please call us to discuss your facility's requirements.

Professional
Audio
Design
Inc.

Voice
(781) 982-2600

Fax
(781) 982-2610

REPRESENTING OVER 100 MANUFACTURERS
PLUS HARD TO FIND VINTAGE GEAR
API, AKG, AVALON, DYNADISCO,
FOCUSRITE, GML, LEXICON,
MANLEY LABS, MUNRO CUSTOM
MONITORS, NEVE, OTARI, SONY,
SSL, T.C. ELECTRONIC, & MORE

www.proaudiodesign.com

DRAWMER USADigital & Analog Signal Processing
England**BRAUNER, USA**Hand Built
Large Diaphragm Tube Mics
Germany**SOUNDFIELD, USA**Multi-channel
and Stereo Recording Mics
England**KLEIN & HUMMEL, USA**Active
Precision Near-fields
GermanyWWW.TRANSAUDIOGROUP.COM
(805) 241-4443 California

uvista.com

Your Source For Desktop
Media Production Tools
Software & Custom Computers
Over 100 Manufacturers
Waves Native Gold Bundle \$720 FX \$240
TC Electronic Spark \$345
Digital Audio Labs Card Deluxe \$390
Cakewalk Pro Audio 9 \$257
Fatar/Studio Logic SL760 Kybrd Cntl \$479
MC/Visa/Amex/Ck/MO
www.uvista.com
uvista@erols.com • Fax (610) 631-2227
(877) music 51•(610) 631-2224

VINTECH AUDIO

CLASS A MIC PREAMPS MADE WITH



NEVE™ 1272 COMPONENTS
www.vintech-audio.com
call toll free: 1-877-4-mic-pre

6386 Variable Mu Tube Limiter

A Modern Approach to Classic Tube Compression
Same Gain Control Tube as the Fairchild Limiter
Class A Sonically Accurate Signal Path

Pendulum Audio (908) 665-9333
www.pendulumaudio.com

SEE OUR AD IN MARKETPLACE pg. 189

VT-2 Vacuum Tube Mic Preamp

www.dwfeearn.com

**D.W. FEARN**

SEE OUR AD IN MARKETPLACE pg. 189

API, Jensen, etc....

2520™ / 990™

Finally pure Class A all discrete
direct replacement J-FET op-amps
of exceptional musical realism.
From Millennia Media, Inc.

T 530-647-0750 www.mil-media.com
info@mil-media.com

SSL 4056 E/G like new \$160k
SSL Screen Sounds (4) DAW,
MO, Soundnet, all stations link
as new, \$27k (805) 584-0015

DDA DMR-12 mixing console.
72 inputs, 12 buses, extended
patchbay w/24-ch Optifile automa-
tion, \$17,500. Otari MX-80
2" 24-trk, low hours, perf. cond.,
\$12,500.

Paul or Kyle (212) 925-5544.

www.popfilter.com
voice screens
(800) 252-1503
or (914) 255-3367
e-mail: info@popfilter.com

**UPGRADE
YOUR
VOCALS**

UNITED STATES AUDIO
UNPRECEDENTED (WWW)
AUDIO SELECTION
STUDIO LIQUIDATION
Ph (818) 887-6600
Fax (818) 887-4700
www.unitedstatesaudio.com

api

api "Lunch Box"
Straight To Tape For
That Classic api Sound

BRYSTON
POWER AMPS

BMP-2 Mic Pre Amp
BP-20 Line Pre

Purple Audio, PMC,
Brauner Tube Mics
JMK AUDIO
(205) 870-5557
WWW.jmkaudio.com

QUALITY AUDIO TRACKING, MIXING AND MASTERING TOOLS

Aardvark • AKG • Amek • api • Apogee • ATI • Audio-Technica • Auralex • Avalon Designs • DPA
Beyerdynamic • Dirk Brauner • Bryston • Cedar Audio • CraneSong • Digidesign • DK Audio
Dolby Pro • D&R • Drawmer • Dynaudio • Earthworks • Empirical Labs • Equi-Tech • Eventide
Focusrite • Genetec • GML • Glyph • Grace Designs • Great River • HMB/Genex • Lexicon • Mackie
Manley/Langevin • Microtech Gefell • Millennia • Mytek • Mytek • Neumann • NTI • Otari
Purple Audio • Panasonic Pro • Rorke Data • Royer Labs • RPG • Sennheiser • Sony Pro • Soundelux
Soundfield • Sound Construction • SPL • Summit Audio • Tannoy • Tascam • Teytrix • TC Electronics
Timeline • Tube-Tech • True • Waves • Yamaha Digital • Z Systems and many more

"A HALFWAY HOUSE FOR THE SERIOUSLY AUDIO ADDICTED"

**STUDIO TECH
SUPPLY**

Sales • Service • Installation • Consultation • Leasing
9982 Monroe #407 Dallas, TX 75220
Phone: 214 358 0050 www.studiotechsupply.com Fax: 214 358 0947

**Sound
thinking**

**Digital Audio:
It's What We Do!**

digidesign **ALESIS**

...and more

new!
website
541-386-2682
www.soundthinking.com

**Open for business
24 hours**

http://www.mercenary.com

**"this is not a problem"**

TEL: (508) 543-0069
FAX: (508) 543-9670

funky junk

T: +44 207 6095479
F: +44 207 6095483
sales@funky-junk.co.uk

FUNKY JUNK EUROPE

Paris: +33 1 47 93 08 88
pierre@funky-junk.com

Milan: +39 02 690 16 229
paolo@funky-junk.com
coming soon...

Funky Junk Stockholm

Building the largest on-line
pro-audio catalogue. Anywhere. Ever.
20th century technology / 21st century service

www.funky-junk.com

Equipment for Sale



Check out
our affordable
FINANCING!

Trident Owners!

Join the hundreds of studios worldwide! Transform your great sounding Trident into a state-of-the-art console by installing Uptown's moving fader automation! Call for a free brochure or free demo disk!

800-343-3237

Uptown Automation Systems Inc
9017-C Mendenhall Ct
Columbia, MD 2145
410-381-7970 (phone)
410-381-5025 (fax)



"THE BEST DEALS ON EARTH"

digibid.com

click here

Your One-Stop Shop for the Best Gear Deals! Open 24/7

The internet auction marketplace at www.digibid.com

AERON CHAIR

800-883-9697

SEE OUR AD IN MARKETPLACE pg. 190

LOOKING FOR BETTER SOUND?

Component-level upgrades for mixing consoles, tape machines, mics & all outboard gear. Also, high-speed high-quality mic preamps.

AUDIO UPGRADES

6410 Matilija Ave.
Van Nuys, CA 91401
(818) 780-1222
Fax (818) 886-4012
<http://www.audioupgrades.com>

NEUTRIK TT CABLES \$10.99 ... 24"

3-Yr Warranty! also 12/18/36

REAN TT BAYS: \$295

In Stock - better than SW!

HHB ADAT45: \$6.99

HHB DAT65: \$6.39

GREEN DOT (615) 366-5964

The Professional Choice

Recording • ENG • Film Sound
Studios • Broadcast • Post
Equipment sales, tech support
and great prices.

turner audio

(203) 270. 2933

www.turneraudio.com

Every major brand of everything. Millions of dollars of musical gear in stock. ALTO MUSIC. Guitars, recording, keyboards, amplifiers, drums, pro sound, new & used. One of the largest selections in the country. We ship everywhere!

(914) 692-6922-680 Rt. 211
East Middletown, NY 10940
www.altomusic.com

Ask for Uncle Freddy—He loves ya!

soundequip.com

Ghost 32LE w/ meterbridge \$4,999
UREI 809s, pair \$1,500
Yamaha O3D \$2,689
Soundcraft 500-32 & Anvil case \$3,200

(800) 747-4944

SOUND ANCHOR SPECIALTY AUDIO STANDS (407) 724-1237

DESIGNED FOR ULTIMATE
PERFORMANCE BEHIND
CONSOLE AND FREE SPACE
APPLICATIONS.

Standard & Custom Models
SEE OUR AD IN MARKETPLACE



SEE OUR AD IN MARKETPLACE pg. 186

VINTAGE NEVE™ 1272 PREAMPS with D.I.



\$1039 Single w/p.s. \$1759 Two channel

VINTAGE NEVE™ 3415 PREAMPS with D.I. (PRE FROM NEVE 1081 EQ)

\$849 Single w/p.s. \$1349 Two channel w/p.s.

VINTAGE API™ PREAMPS with D.I. (MADE FROM API 312 CARDS)

\$1349 Two channel w/p.s. \$499 Plug-in module

POWERED RACKS FOR VINTAGE API™ PREAMPS AND EQ'S

\$529 6-Module portable \$529 6-Module rack mt \$839 11-Module rack mt

**Brent Averill
ENTERPRISES**

14300 Hortense Street • Sherman Oaks, CA 91423
818 784-2046 FAX 818 784-0750
www.brentaverill.com

Studio Furnishings

[free catalog]



Consoles,
Mastering Desks,
Digital workstations,
Keyboard workstations,
Rack Enclosures, Spkr Stands

ARGOSY.

800.427.5698, 573.346.8549
argosyconsole.com

OCEAN AUDIO INC

WE SELL AND BUY USED EQUIPMENT SINCE 1982
THE LARGEST USED EQUIPMENT LISTINGS IN THE WORLD

(303) 449-8322 Fax (303) 449-8558

EMAIL HADLER@OAMI.NET

[HTTP://WWW.OCEANAUDIOINC.COM](http://WWW.OCEANAUDIOINC.COM)

NEW WEB SITE

BEST PRICES & SELECTION OF WORKSTATIONS, DIGITAL MIXERS-RECORDERS, OUTBOARD GEAR, MICROPHONES AND MONITORS.

Pro Tools Mix/Mix Plus, Tool-Box, plug-ins, Mackie Digital, Manley, TC Electronic, dbx Quantum, Panasonic Digital, Amek, Tube-Tech, Apogee, Dolby, Neumann, MOTU 2408 and 1224, API, Summit, Genelec, Hafler, Lexicon, AKG, Otari, Yamaha Digital, Soundcraft, Tannoy, Roland Digital, Alesis Digital.

- Very Aggressive Pricing
- Experienced & Knowledgeable Sales Staff
- Serving the Recording Industry for Over 20 Years
- Ask About our Used & Demo Selections

EAR PROFESSIONAL AUDIO (602) 267-0600

Visit our Web site for more
Product Information
and Incredible Blowouts at
WWW.EAR.NET

HARBOR SOUND

HUGE SELECTION OF
USED, VINTAGE &
NEW GEAR

Consoles, Mics, Recorders,
Buy & Sell vintage NEVE & API
modules, Pultecs, Tube mics.
New Equipment in stock.
Credit cards accepted.

Ph: (781) 231-0095

Fax: (781) 231-0295

www.harborsound.com



VINTAGE NEUMANN • NEVE • AKG • STUDER

API • TRIDENT • AMEK • UREI • RCA • SSL • TELEFUNKEN

Buy/Sell - We pay top dollar - FAX us your list

Worldwide Shipping • Visit our website



512.338.6777 • <http://audio.home.texas.net>

DAN ALEXANDER AUDIO
 BUYS, SELLS AND REPAIRS
 RECORDING EQUIPMENT.
 (415) 546-0200
 fax (415) 546-9411
 e-mail daaudio@best.com
 www.danalexanderaudio.com

MASSIVE ANALOG
 The Large Format ATR-102 1-inch
 stereo mastering recorder. Analog
 sound beyond all digital comparisons.
ATR SERVICE
 COMPANY
 (717) 852-7700 fax (717) 852-7755
 www.atrservice.com

ALAN SMART COMPRESSORS



C-1, C-2, & Multi-channel versions

available in the U.S. & exclusively distributed by:
Sunset Sound, Hollywood: (323) 469-1186

NEED GEAR? FOR LIVE OR STUDIO?

RECORDING • GUITARS •
 AMPLIFIERS • PRO AUDIO •
 KEYBOARDS

800-222-4700

5335 Bass Road
 Fort Wayne, IN 46808
 (219) 432-8176
 FAX (219) 432-1758
 www.sweetwater.com
 sales@sweetwater.com

Sweetwater
 music technology direct

**We have everything you
 need for studio and stage!**

SEE OUR AD IN MARKETPLACE pg. 189

**OKTAVA
 BEST RUSSIAN MICS**
 • MK-012 condenser \$200
 • MKL-100 tube, condenser.. \$650
 • ML-25 ribbon, phantom \$250

**VINTAGE
 BEST GERMAN & AUSTRIAN MICS
 from RUSSIA**

TEL/FAX: 011-7-095-299-1161

Vacuum Tube Direct Box
 As reviewed in Sept. '99
Electronic Musician
 Music Valve Electronics Inc.
 Visit www.musicvalve.com
 Telephone (212) 343-0265

[http://www.
 primalgear.com](http://www.primalgear.com)
 (For guys who
 like playing
 with really big
 knobs all day.)



(615) 248-0007

OMNIRAX
 STUDIO FURNITURE



CODA D8
 with Sidecars

OMNIRAX 800.332.3383 418.332.3382
 FAX 418.332.3387
 www.omnirax.com

MARQUETTE AUDIO LABS

New, Used & Vintage Gear - Specializing in Custom Racking



Phone: 510-581-3817 • Fax: 510-581-3817

www.marquetteaudiolabs.com

SEE OUR AD IN MARKETPLACE pg. 185

**VIF Idlers & Holddown Knobs
 ITC Reel Parts**

SEQUOIA
 ELECTRONICS
 (800) 848-4428
 FAX (408) 363-0957

Masterpiece A/V, Inc.
 Call Aaron & Jamey
 For a Wide Selection of New Professional
 Audio/Video Gear Media & Accessories
 Toll-free (888) 776-2835
 fax (860) 354-9057
 http://www.masterpieceav.com

THE MIC SHOP
 TUBE MICROPHONES
 BOUGHT/OLD/SERVICED
 Mic Power Supplies & Cables
 Bill Bradley (615) 595-1717
 Fax: (615) 595-1718
 www.micshop.com

Boutique Audio & Design
 Neve 1073
 See our ad in Marketplace

SEE OUR AD IN MARKETPLACE pg. 186

CAFFEINATED!
 requisiteAudio.com
 818-247-2047
 Compressors-Mic-Pres-Equalizers-DIs

SEE OUR AD IN MARKETPLACE pg. 190

Mix Classifieds (800) 544-5530

WHAT A DEAL!

FOR SALE

MCI 24-trk JH 24

**** Primo shape ****

24 & 16 trk heads
 QUIOR and remote
 Autolocator III

\$11K

**EMT Stereo Echo
 plate**

420S Tube Echo
 Nothing like it!

A steal at \$ 5 K

Art Twain 510 531-2267

(800) 264-6614

We've got **tons** of super clean
used, as well as **new** products
 from **Tascam, Alesis, Kurzweil,**
Roland, Mackie, Genelec,
Lexicon, Fostex, Yamaha,
Korg and hundreds more.
Discount Pricing and World-
wide Delivery! 69 years in
 business. Trade-ins welcome. Visit
 our new **22,500-sq.-ft.** location.
 Call, fax or e-mail us today.
carusomusi@aol.com OR
sales@caruso.net. Visit us
 at **www.caruso.net.** Start saving
 money today! Call **Caruso Music,**
 94 State St., New London,
 CT 06320 USA. Outside of
 U.S.: **(860) 442-9600.** (860)
 442-0468 FAX.

call for a quote!
 Custom Rack
 Engraved Mounting
 Panels of your
 Vintage Gear
 All American Alchemy, Inc.
 (212) 475-7330 www.tmfstudios.com

**MAGIC
 AUDIO**

**PRO AUDIO SALES
 CONSULTATION
 INSTALLATION**

ATLANTA
 phone: 404.873.6161
 fax: 404.873.8318
 magichk@bellsouth.net
 www.magicaudio.com

Equipment for Sale

Buy, Sell, Trade



See Our Ad in Marketplace

SEE OUR AD IN MARKETPLACE pg. 188

NEVE DESK
w/ 1073 EQ
OTHER CLASSIC GEAR
Australia
Ph: 011-61-7-325-22872
www.sunshinemusic.com/gear

**PATCHBAYS
VINTAGE GEAR**
we buy-sell-trade, see our list at
www.audiovillage.org
(760) 320-0728

**SOUTHERN CALIFORNIA
PRO AUDIO**
NEW, USED AND VINTAGE
THE LAST CALL YOU'LL HAVE
TO MAKE!
Phone: (818) 222-4522
Fax: (818) 222-2248

**Digital Recording
Factory Direct Discount Dealer**
* Alesis * Yamaha * Sony * Tascam *
Roland * Akai * Event Electronics *
Digital Audio * Fostex * Korg *
Pro Audio Plus (800) 336-0199
Division of Rolls Music Center
www.rollsmusic.com

BAYVIEW PRO AUDIO

PRO AUDIO SOFTWARE & HARDWARE SALES

Please call or visit our website for free catalog
1.888.718.0300 <http://www.bayviewproaudio.com>

Authorized dealer for: Digidesign, Fostex, Spirit, Event, AKG,
PreSonus, Waves, SEK'D, TC Electronic, RODE, Sony, Shure,
Apogee, Dynaudio Acoustics, LynxOne, Ensoniq, dbx, A.R.T.,
Soundcraft, Alesis, Audio-Technica, JBL, Mackie & many more.

SINGERS! REMOVE VOCALS
Unlimited Backgrounds™
From Standard Tapes, Records, & CDs
with the Thompson Vocal Eliminator™
Call for Free Demo Tape.
Internet: <http://itsound.com>
LT Sound, Dept. MX-1
7968 LT Parkway
Lithonia, GA 30058
24 Hour Demo/Info
Line (770) 482-2495 - Ext. 8
Best Vocal Eliminator™, Key Changer, Voice Enhancer!

FREE CATALOG

◆ MICROPHONES ◆ STAGE LIGHTING
◆ HEADPHONES ◆ SHOCKMOUNT
◆ MIXERS & AMPS ◆ RACK CASES
◆ CABINET & RACK ACCESSORIES ◆ HORN DRIVERS
**PARTS EXPRESS - CALL TOLL FREE
1-800-338-0531**
Source Code: MEXM

SEE OUR AD IN MARKETPLACE pg. 187

MCI JH-636 mixing console
36 I/O modules; 36 parametric
EQs; phantom power 24 buses;
720 pt. patch bay; and MCI JH-24
24-trk. tape machine
w/autolocator both for \$25K
Excellent condition
Call (212) 590-2177

THE CASE SPECIALISTS FREE CATALOGUE



(800) 346-4638
(516) 563-8326, NY
(516) 563-1390, Fax
Custom or stock sizes.
Our prices can't be beat!

www.Discount-Distributors.com

**NEVE VR CONSOLES
FOR SALE**
Any size, any configuration,
Flying Faders or GML.
Contact Gary Belz,
House of Blues Studios,
(818) 990-1296.

Eliminate Ground Loops, RFI and EMI Problems with the SESCOM IL Series™

GET THE RADIO
STATION OUT OF
YOUR AUDIO



USE	MODEL	PRICE
MIC	IL-29	\$57.50
150 TO 150 OHMS		
PASSED PHANTOM POWER		
LINE	IL-19	\$47.00
500 TO 600 OHMS		

IMPROVE YOUR AUDIO TODAY!
20% DISCOUNT ON PREPAID ORDERS
FREE SHIPPING ON PREPAID ORDERS (CONT. US CANADA & MEXICO)
FREE CATALOG OF PRODUCTS FOR SOLVING COMMON AUDIO PROBLEMS

ORDERS 800-634-3457 • FAX 800-551-2749
OFFICE 702-565-3400 • FAX 702-565-4929
www.sescom.com • info@sescom.com
SESCOM, INC. 2100 WARD DR. HENDERSON, NV 89015
SESCOM, INC. is not responsible for customer's improper use and prices and specifications are subject to change without notice



**Coles 4038
RCA 44s & 77s**

(800) 798-9127

Call Wes Dooley



The RACKIT™ System

Modular, stackable oak units
hold all media and equipment
Free mail-order brochure
(please mention Mix)

Per Madsen Design
800-821-4883 • P.O. Box 882464
San Francisco, CA 94188
www.rackit.com

EXCLUSIVE FACTORY AUTHORIZED RESELLER

www.UsedSSL.com

PROFESSIONAL AUDIO DESIGN, INC.
(781) 982-2600

Equipment Wanted

SoundBroker.com

Bringing buyers & sellers together.

CONSOLES/SPEAKERS/AMPLIFIERS

(310) 407-0888

sales@SoundBroker.com

www.SoundBroker.com

USED ADATS WANTED

Easy exchange toward a newer
or different format. Everything
available. Save **THOUSANDS**
when you deal with our 70-year-old
company. **UPGRADE TODAY.**
Call, fax or e-mail for details.
Worldwide delivery. **CARUSO
MUSIC**, New London CT:
sales@caruso.net

(800) 264-6614 TOLL FREE

(860) 442-9600

(860) 442-0463 (FAX)

www.caruso.net

Check Out Mix Online

www.mixonline.com

Instruction

FAK your Mix Classified Ad
510 • 653-8171

Woodland Studios

is now expanding its engineering
training program to prospective
students interested in a compre-
hensive education. Our specialized
program is limited to four students
per year.

This program has been in effect
over a four-year period, and 100%
of the graduates are either inde-
pendent or staff engineers at major
facilities, and all are working on
major-label projects.

This is an intense hands-on
program working day-to-day in
the studio on actual sessions,
combined with classroom instruc-
tion and lectures.

Call us for alternatives and
information at (615) 262-2222.

BE A RECORDING ENGINEER
★ **TRAIN AT HOME**
Easy Home-Study practical training in
Multi-track Recording. Join our successful
working graduates or build your own studio.
Career guidance... Diploma... Licensed.
FREE INFORMATION:
Audio Institute of America
314 40th Ave, Suite AL, San Francisco, CA 94121
Or visit us at www.audioinstitute.com

ARTI Audio Recording Technology Institute

- Extensive Hands-On Training •
- Analog and Digital Workstations •
- Music, SFX Design, Audio Post •
- Low Student/Teacher Ratio •
- Placement Assistance •
- Financing to Qualified Applicants •
- Accredited by ACCSCT •
- Located in Beautiful Orlando, Florida •

888-543-ARTI • audiocareer.com

The Midwest's Premiere Recording School.



Associate Degree in Music Production
1-800-594-9500 www.musictech.com

SEE OUR AD IN MARKETPLACE pg. 187

RECORDING ENGINEER TRAINING

**ONE-ON-ONE INSTRUCTION
"HANDS-ON" TRAINING**

800-331-3514

WWW.HOLLANDSOUND.COM

Recording Engineer Broadcasting

Multimedia/Digital/Video/Film
Radio/TV/Sports/News/DJ/Talk Show

No experience required!

On-the-job-training

in local major Recording Studios & Radio/TV Stations

Part-time, nights, weekends - Call recorded info line for FREE video

1-800/295-4433 www.radioconnection.com



MUSIC RECORDING INDUSTRY CERTIFICATE PROGRAM

San Francisco State University
College of Extended Learning.
Classes taught by Bay Area pros.
Expand skills and earn certificate.
Engineering, management, song-
writing & more!

Call (415) 405-7700.

Internet Services

Does your ISP do more than just give you space on a server?

Call today, for a
'free' no obligation
assessment of your
Internet needs...

1-800-96-ROCKA

www.rocka.com

Professional Web design & Web site hosting
Domain name registration (.com, .net, .org)
Studio services & links on Music on the Web®
Real Server support for streaming media files
Exchange Server mail & FrontPage extensions



Rocka.com™

INCREASE YOUR VISIBILITY

www.proaudiosearch.com
Get Listed.
Get Found.

DETAILED LISTINGS OF
COMPANIES & PROFESSIONALS

Maintenance Services & Repairs

A Coleman Audio
SONY
TASCAM
PANASONIC
DAT SERVICE
(516) 334-7109
colemanaudio.com

SEE OUR AD IN MARKETPLACE pg. 190

Pro Digital Inc.

DAT ADAT DA-88
DAT Recorder Service Specialists

* Fast, expert repairs on all DAT and MDM brands and models

* The FIRST, the BEST...over 7000 digital recorders serviced!

* Warranty service on most brands!

* FedEx return shipping at UPS prices!

* Compare our rates & turnaround time!

(610) 353-2400

(610) 359-0937 FAX
prodigiinc@aol.com

Midwest Digital Services Inc.
DAT and DA-88 Repair
(Chicagoland Area)
Professional DAT Service since 1985.
Authorized by Sony
Panasonic, Tascam & Fostex
(888) 809-3309
Ph: (708) 448-7539
www.midwestdigitalservices.com

VINTAGE GEAR REPAIR
Tubes, Transistors, (yes, even ICs),
Mic pre's, limiters, amps,
consoles, tape machines.
We repair & restore it all!
Field service too!
TROUBLE REPORT
Ph: (914) 688-7329

DATs FIXED FAST!

Expert solutions for all
DAT recorder problems

- All makes and models
 - Experienced, factory-trained techs
 - Fast turnaround
 - Repairs, overhauls, parts
- "The DAT doctor is in!"



973-579-4849 FAX 973-579-7571

Musician Services

Global Groove

Live drums/percussion instantly
any time, anywhere over ISDN
lines. Need a part/loop? I'll play it
LIVE! Various kits set up & ready
to go! For info/credits call Mark
Ambrosino (212) 255-5080
E-mail: ambro68@aol.com

Music Products/ Software

AKAI MPC60 USERS UPGRADE TO MPC3000 SOFTWARE!

LONG SAMPLING TO 26 SEC •
STEREO SAMPLING • MIDI FILES •
VOICE RESTART • LOAD MPC3000
SOUNDS • SOUND COMPRESSION
DOUBLES MEMORY CAPACITY •
HIHAT SLIDER DOUBLES AS TUNING •
4 PAD BANKS • 8 DRUM SETS • 4 FREE
SOUND DISKS AND MORE • \$195 OR
\$445 WITH SCSI HARD DISK PORT

Logerlinn
DESIGN

PH 415 474-0903 www.RLinnDesign.com
FAX 415 474-1118 Sales@RLinnDesign.com

Recording Services

THE DIGITAL SUNSPOT INC
DIGITAL MASTERING

**Affordable Professional
CD Mastering**

www.digital.sunspot.com

888-985-3333

small ad...big savings
cd...cassettes...graphics
(800) 801-SONG

LONELY RECORDS
1 800 409-8513

CDs-TAPES-VINYL-DVD-MINI-DISC-GRAPHIC DESIGN
PRINTING-MASTERING-PRO AUDIO SALES & SERVICES

www.lonelyrecords.com

100 CDS \$36
25 CDS \$72
50 CDS \$132
100 CDS \$208
1000 CDS \$620

Put Your Music Online

Better CD/Tape Duplication!
Premium CDs: As low as \$5.54 ea.

Creative Sound



(800) 323-PACK
www.csoundcorp.com

CD - R DUPLICATION

1+ 3.99 100+ 2.49
25+ 3.49 200+ 2.24
50+ 2.99 300+ 1.99

Price Includes: CD - R Duplication, Direct
Imprinting, Jewel Box,
Insertion, and
Shrinkwrapped



(409) 756-6861

AUDIO - CD - DVD MASTERING & DUPLICATION

16 & 24-bit Sonic Solutions/Weiss audio mastering call
Check out our sound quality, 1 single master (call) FREE
100 CD-Rs & 1000 CDs (bar code)-starts at \$269 & \$749

Audio mastering & CD-Rs turn-around 24 hr.

Video & audio encoding \$35 & \$15/min.
DVD authoring \$2200
50 DVD-Rs \$2200

510 653 3838
www.cdpremastering.com

46 PRODUCTIONS

25 CDRs - \$100.00
50 CDRs - \$175.00
100 CDRs - \$250.00
200 CDRs - \$425.00

FREE CDRs WITH EVERY ORDER

From CD or CDR master. Includes CDR in jewel box
with text printing on CD label. Add \$19 for other
digital master, \$33 for analog master. Orders must be
prepaid. Shipping not included.

\$5.00 OFF WITH THIS AD

42W557 Hawk Circle
St. Charles, IL 60175
Phone (800) 850-5423
E-mail: info@46p.com

Visit our Web page at <http://www.46p.com>

Recording Services

CD - CASSETTE - VINYL - MULTI-MEDIA - DVD - VIDEO

THE GATE 1-800-655-1625
WWW.GATEMUSIC.COM

- Full-service mastering and post-production
- Complete custom graphic services
- Client graphic proofing on the internet
- CD, CD-ROM, and DVD replication & authoring
- Digital bin cassette replication
- Vinyl mastering and replication
- Digital color prepress and service bureau
- Complete custom retail-ready packages
- Presentation Products and specialty packaging

P 510-558-9045 F 510-558-9504
E-MAIL: INFO@GATEMUSIC.COM

THE GATE MEDIA GROUP, THE GATE MUSIC SERVICES, INC.
THE GATE IS CLEARLY A BETTER WAY TO SOUND™

1000 CD's Retail-Ready	500 CD's Retail-Ready
\$1695.00	\$1195.00
200 130gr Vinyl	1000 CD's in jacket
\$1295.00	\$1495.00
1000 PROMO CD's	1000 Bulk CD's
\$1295.00	\$695.00

THE GATE

Retail-Ready Packages include:

- Complete graphic design services
- 2-color on-disc printing
- All film and match-prints
- 4/1 4-page inserts
- Bar code (\$500.00 value)
- Jewel case, clear tray and shrink-wrap
- No hidden costs, or "surprise" expenses!

Lovingly Handcrafted CDs at Factory Direct Prices.

We own the factory. (And the Elves aren't unionized.)

CD SOURCE.NET

www.cdsourcenet.net

toll free 1-877-CD PRESS

1000 CD's raw on spindles \$669⁰⁰

CD-R MEDIA as low as **\$0.85**
order online at www.cheapcdr.com

1000 CD's in full color cardboard sleeves! \$1049⁰⁰

5000 3.5"x5.5" POSTCARDS in full color \$250⁰⁰

COMPACT DISCS CASSETTES DESIGN POSTERS POSTCARDS

TGS 1-888-DISC-MFG

1000 POSTERS 12.5" x 17.5" in full color \$441⁰⁰

www.tgsdisc.com
Get an online quote or a free catalog!

Best Price... Best Service... Period.

CD REPLICATION

Retail-Ready Packages or Bulk

New, Fast - DIGITAL PRINTING!
Booklets, tray cards, J-cards, posters!

- Vinyl Records (Colors Available!)
- Cassette Duplication
- Audio Mastering (State-Of-The-Art!)

Work directly with the factory and save - U.S. MOST COMPLETE FACILITY! **(800) 455-8555**

<http://www.europadisk.com>

major credit cards accepted

EUROPADISK, LTD.

CD REPLICATION

- Cassette Duplication
- Mastering & Digital Editing
- Graphic Design & Printing
- CDR Blanks

ESP

We Anticipate Your Every Need

1-800-527-9225

(716) 691-7631 • Fax (716) 691-7732

THE TRANSFER ROOM
SOUND STAGE The solutions are endless.

Multi Track SAFETIES • ARCHIVING EDITING • TRANSFERS

- 24 - 48 & 32 digital • 24 & 16 Analog
- Protocols • DAB8 • ADAT • Radar & Euphonix Hard Disk
- All transfers are listened to and guaranteed accurate
- Quick turnaround time • Emergency Services

615.256.2676
www.soundstagesstudios.com

NASHVILLE'S NUMBER 1 STUDIO REPAIR COMPANY
Servicing Southeast USA
SSL Send Cards or Mod Parts in stock
Neve, Studer, ATR100, Otari, Vintage Gear
X-850, DTR900 Service Ad Cards in stock
ADAT, DAT Factory Authorized • Custom Wiring and Studio Installation: Studio Design

Interface Audio
615 255.9664

Records Tapes CD Services

Magnetic Since 1980

Our Popular Packages:

- 300 Cd's only \$699.00
- 500 Cd's only \$849.00
- 1000 Cd's only \$1249.00

Prices Include:
2 color disc, 4 page insert full color / b&w, full color tray card, jewel case, shrink wrap and glass master. (you supply Cdr or Dat & artwork films)

On Track

Visit our website at www.magneticall.com for other package options or call us at 1 800 561-1815 for a free brochure.

Visa/Mastercard accepted

SPECTRUM'S FastTrack

Full Color CDs... From your CD or DAT master

100 CD's Full Color only \$595 complete

Mix Special GET 25 FREE CDS IN JEWEL CASE WHEN ORDERED

INCLUDES:

- Full color one side front insert card
- Matching color tray card with color photo
- Fast Track layout and design
- One color black print on disc
- Jewel case and wrap

Spectrum
1.800.334.9328

Fast Track Digital Chrome Cassettes
100 \$445 GET 25 FREE WHEN ORDERED

State of the Art CDs and Cassettes in 2 - 3 Weeks!

1,000 Packaged CDs - \$975.00 / 1,000 Packaged Cassettes - \$699.00

Take advantage of our superior product & customer services!

- Awesome Graphic Design • Full Color Proofs & Printing • No Hidden Fees
- Digital Mastering • Film / Color Separations • FedEx Correspondence

OUR QUALITY AND PRICES CAN'T BE BEAT!!

TOLL FREE 1-877-456-9385



"STI... Trusted Source For Your Recording Needs"

CD Rs... as low as \$0.78

CD-RWs... as low as \$1.50

CD Duplicator Units... as low as \$700.00

- record up to 8X
- throughput/hour: from 4 CDs to 24 CDs
- great for small or mass production run

STI Certified Products Inc.

(800) 274-3475 • (510) 226-9074 • Fax (510) 226-9918

1-800-365-8273

Audio/Video Prepared for the WWW

- Audio/Video Cass. Duplication
- Website Design
- Mastering/Digital Editing
- CD Replication/CD ROM
- Design, Printing & Packaging

Free Color Catalog

EASTCO PRO MEDIA

Serving the World since 1985
www.eastcopro.com

THEM BOYS
AT EASTCO KNOW
HOW TO
DO IT ALL!

THEY DO IT
RIGHT!

AMERICA'S BEST CD PACKAGE

HANDS DOWN

1000 CDs Only \$1399 Includes:

- full color inserts • design • film • reference CD • glass master
 - 2 color on disk • shrink wrapped • priority proofs
 - manufactured at a Major Manufacturing plant for the
- Very Best Quality • Fast Turnaround • Free Overruns!!

100 cassettes
With Inserts
\$199

ELECTRIC

100 CDs Only \$379

includes full color inserts,
full color on disc, design, shrink wrapped
Retail Ready!

800-367-1084

www.electricdisc.com



DRT Mastering

the Analog Specialist

You will have the fat slamm'n'
major-label sound that sells discs.

Or the work is free...

Custom gear. 1st-class results. Free broch
800-884-2576 www.drtmastering.com

Fleetwood MultiMedia

1000 CDs from \$689

500 Chrome Tapes \$715
"Retail Ready"

800-353-1830 (781)599-2400

IMPLOSION PUBLISHING INC.

1-888-323-5431

Call for our full price list
& free samples. We also
print postcards & posters!
Graphic design also available.

1,000 bulk CDs: \$670

w/ 2-color printing on disc

1,000 retail-ready
CDs: \$1,400

w/ 4-panel, 4/1 insert and traycard, ALL
FILMS, jewelcase, shrinkwrap, barcode.

25 CDs: \$99

50 CDs: \$189

24-hr turn-around in most cases. Up to 74 mins.,
from your CD-R. Includes b/w label and jewelcase.
Booklets/shrinkwrap and other-size runs available.

Our CD & Cass's are BETTER & CHEAPER!

(800) 421-8273

Progressive Music

SEE OUR AD IN MARKETPLACE pg. ???

SEE OUR AD IN MARKETPLACE pg. ???

CD-Audio & CD-ROM Replication
as low as
57¢
Toll Free 1-888-CD SONIC (237-6642)
CD SONIC

Musicians-Bands-Studios

HIGH BIAS BULK/BLANK AUDIO CASSETTES

BASF maxell TDK

C-10..... .18 / ea. PERFECT
C-20..... .22 / ea. DEMO
C-30..... .28 / ea. LENGTHS

CHROME Cr02 C-94..... .50 / ea.

Clear Norelco Box/Round Edge .12 / ea.

All Lengths Available From 1 to 126 minutes

**DAT Quantegy, Maxell
DIGITAL AUDIO TAPE BASF or Sony**

124 94 64 48 34 15
\$5.40 \$4.75 \$4.20 \$4.00 \$3.60 \$3.10

All Formats and Brands Available.

Please Contact our Sales Department For the Lowest Prices!!!



CDR'S

TDK OR MITSUI BLANK FACE WITH JEWEL BOX

10-99..... 1.50 100-499..... 1.40 500+..... 1.30

BULK / SPINDLES

Prince..... .85 / ea. Mitsui..... 1.30 / ea.
Generic..... .80 / ea. TDK..... 1.30 / ea.
Taiyo Yuden..... 1.15 / ea.

Volume Discounts

CD Jewel Boxes With Trays .15 / ea.



2" ANALOG

QUANTEGY 499..... \$126

QUANTEGY GP9..... \$138

BASF SM-900..... \$126

WE WILL MATCH ANY ADVERTISED
OR CATALOG PRICE!

adat QUANTEGY \$8.50
BASF \$8.50
SONY \$8.50
HHB \$7.00

Master
Distributors
of:



QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Taiyo Yuden

MITSUI

HHB

QUANTEGY

maxell

TDK

BASF

SONY

Records Tapes CD Services

33 YEARS - GAINING THE RECORDING INDUSTRY'S TRUST 1 YEAR AT A TIME
andelaudio@msn.com
FREE CATALOG

CD-R	LENGTH	TDK SA PRO	BASF CHROME PLUS	MAXELL XLI	BASF CHROME SUPER
AS LOW AS .85	C-10	.20	.19	.22	.24
	C-15	.24	.22	.24	.27
	C-20	.26	.24	.26	.31
	C-32	.31	.29	.34	.41
	C-46	.37	.35	.42	.53
	C-62	.45	.43	.49	.62
	C-74	.51	.48	.59	.72
	C-80	.54	.51	.63	.78
	C-92	.59	.56	.71	.80
	C-100	.63	.59	.76	.85

NYC 718-435-7322 **800-221-6578** "FAST GUARANTEED SERVICE" FAX 718-853-2589

Vinyl Pressing Special Radio & Promo Packages

- *12" Vinyl Pressing
- *Dub Plates
- *Compact Discs
- *Cassettes

A+R Est. 1989
Record & Tape Manufacturing
Call Today 1-800-527-3472 (toll free)
(214) 741-2027
902 N. Industrial Blvd Dallas, TX 75207

CD PACKAGES

www.bmmi.com

300 - 585.00
500 - 625.00
1000 - 999.00

CALL RIGHT NOW FOR A BOTTOM LINE QUOTATION!

BASE Multimedia Inc.
USA **800-579-7010** CANADA

THE WAREHOUSE
Studio Sales & Services
• CD & Cassette Albums
CDs • DATs • ADATs • R-AR
• Blank Cassettes
Call, Fax or Email for
FREE
Catalog
• Overnight CDRs & Graphics
800-483-8273
www.warehouse-studio.com
Email: info@warehouse-studio.com
2071-20 Emerson St., Jacksonville, FL 32207
904-399-0424 fax. 904-398-9683

AEROMIX
MASTERING

Toll free
1 (877) 843-7060
http://www.aeromix-mastering.com

Do You Want the Best Deal Around?
CALL ECHO!
CDs • Cassettes • Graphics • Mastering

100 CD's \$199.00  1000 CD's \$750.00

Industry Leaders in Dependable Service
THE ECHO ADVANTAGE:
Highest Quality at Lowest Prices
Fast Turnaround
1-888-626-2250
MAJOR CREDIT CARDS ACCEPTED

www.gvrjr.com
Good Vibrations-RJR Digital
800-828-6537
"Simply the best prices and service for CD Replication, Duplication and Design!"
SINCE 1976

mWORKS

617 577-0089
MASTERING
STUDIOS
sonic solutions • restoration
sony PCM 1630 • HDCC
CD replication and one offs
canbridge, ma

500 CDS w/ 2PG COLOR BOOKLET OR 1000 CDS w/ JEWEL CASE, INSERT YOUR BOOKLET AND SHRINK WRAP
\$999
800-401-8273
BALLISTIC COMMUNICATION

CD AND CASSETTE CLONING!

We're the Short Run Masters!
10 - \$45 50 - \$170
25 - \$95 100 - \$270
CALL TOLL FREE
1-888-738-2573
For a FREE info packet!
P.O. Box 694
Crossett, TN 38657-2584

RECORDING & DUPLICATING SUPPLIES

 TDK BASF SONY QUANTEGY MAXELL

Cassettes • Reel-to-Reel Tapes
C-0's • Cassette Albums • Labels
R-Dat's • CDR's • Video Tapes
Data Storage Media

ARCAL CORP.
2732 Bay Rd., Redwood City, CA 94063
TOLL FREE 1-800-272-2591
FAX (650) 369-7446
Visit our web site: http://www.arcal.com

CDs On Time and ON Budget!

500 CDs \$899.00
1000 CDs \$1349.00

MUSIC MANUFACTURING SERVICES
Not just different, better!

Package includes 4 page full-color folder (B&W inside) tray card, jewel case, assembly and poly wrap from CD-ready master and final film supplied.
* Free barcode when we output your film

1-800-MMS-4-CDS
www.mmsdirect.com

Full Service including Mastering, Design and Packaging for all your CD, Cassette and Vinyl Record pressing needs

Healey

disc manufacturing

500 CDs

(from your artwork disk)

Film, Print, Manufacturing

\$999⁰⁰

500 CDs

COMPLETE PACKAGE

Design, Film, Print, Manufacturing

\$1199⁰⁰

*Add \$500⁰⁰ to packages for 1000 CDs

• CD/CD-Rom

• VHS

• DVD

• Graphic Design

• Packaging Solutions

SINGLE SOURCE Manufacturing Solutions

MULTI-SOLUTIONS

www.healeydisc.com

1.800.835.1362

Call for your FREE CATALOGUE

CD & CASSETTE MANUFACTURING

Serving the country with over 25 years of experience.
The Southwest's premiere full-service manufacturing facility!

PRINTING • GRAPHIC DESIGN • BLANK CASSETTES
DIGITAL MASTERING & EDITING • ONE-OFF CD-RS

RETAIL READY PACKAGES! CALL FOR FREE CATALOG!

CRYSTAL CLEAR SOUND

1-800-880-0073

mc/visa accepted

www.crystalclearsound.com

In the Studio?

FREE Guide
Saves You Time & Money!

Contact Us Today!
1-800-468-9353
www.discmakers.com/mix
info@discmakers.com

DISC MAKERS

Lowest Price Period!

- CD, CD Rom, DVD, cassette & video manufacturing
- Graphic design & print production
- Customized packaging solutions
- Low run capability

1-888-256-DISC ballmedia.com

8X SPEED CDR MEDIA

FORMULATED FOR DATA STORAGE,
DIGITAL AUDIO & DUPLICATOR USE.
SCREEN & THERMAL PRINTABLE.

((NEW GENERATION CD-R))
SILVER SILVER-BLUE FORMULATION

CALL FOR SAMPLES

Spectrum
MANUFACTURING

1.800.334.9328

Authorized U.S. distributors for **DSST** Certified Media

Send your classified ad by e-mail: mb.class@intertec.com

YOU MAKE THE ART WE MAKE IT REAL

STOP • SOURCE

MAX DISK
MEDIA PRODUCTION

CD AUDIO • CD-ROM • DVD • AUTHORIZING
MASTERING • DESIGN • PRESET • PACKAGING
VINYL RECORD PRESSING • CASSETTE DUPLICATION

1.800.681.0708
1.212.254.9911 • 1.212.254.9398 FAX
www.maxdisk.com

MUSIKA RECORDS

CST/CD PKG 1K = \$2,500 • 500 = \$2,070
CD'S ONLY 1K = \$1,525 • 500 = \$1,400
CST'S ONLY 1K = \$1,250 • 500 = \$850
Complete Package • No Hidden Charges

Call (800) 786-5628

1000 Bulk CDs \$620!

III MEDIA

1.888.891.9091

SEE OUR AD IN MARKETPLACE pg. 188

CDs Fast!

1000-\$1100
800-DIGIDOC
www.digidocpro.com

SEE OUR AD IN MARKETPLACE pg. 186

Mix Marketplace!

Ads are affordably priced to match your budget and reader service response is free of charge!

Call Robin Boyce-Trubitt at (800) 544-5530 for rates and deadlines.

Marketplace starts on page 185.

The Disc Company

CD Replication Services

Call Toll Free!!!
(877) 479-1009

4-Color Packaged CD 4 Panel 4-Color Insert 4-Color Back Jewel Case Overwrap*

Quantity	Unit	Extended
1,000	0.99	\$990.00

4 Color BULK CD*

Quantity	Unit	Extended
1,000	0.59	\$590.00

Our Prices Include:
• All film
• Glass master
• 4-Color Process on CD

Price based on artwork supplied by customer in proper digital format- See our website for specs.

Special Broker Pricing Available!

Visit us at <http://www.thedisccompany.com>

Studios

Busy 8-room facility, fully equipped rehearsal and 24-trk. recording, large client base, great Metro NY location, 5,300 sq. ft., central air/heat, well maintained, assume lease, urnkey.(516)742-1355.

**Reduced by
\$1,150,000!**

Recording Studios

2 studios, 8 Business Offices
6,800+ Sq. Ft. Bldg.
Convenient LA Location,
Motivated Seller! \$2,350,000.
Mark @ (323) 664-5766

PENNSYLV. RECORDING STUDIO
State-of-the-art 24/48 digital
recrd. studio. Estab. 22 yrs. 650
sq. ft. rm. Neotek Elite console,
large assort. mics & outboard
gear. Also incl. CD & tape mfg.
Total sales \$1 mil w/strong cash
flow & growth potential. Asking
less than asset value; will finance.
(800) 648-7677.

STUDIO FOR SALE

Busy studio in Florida University
town. Low operating costs. Great
lease in perfect location. 24-
tracks Otari analog & Tascam
digital, plus Pro Tools and all the
toys. Large client base. Won't last
long. Contact Mix Classifieds, PO
Box 8845-WF, Emeryville, CA
94608.

ENTIRE STUDIO FOR SALE

12-years doing business
-Package Deal Only-
Ex: UREI 1176LN, LA3As,
Pultec, API, GML, PCM42, etc.
(610) 926-1620 LV MESSAGE.
Please, serious inquiries only.

Beautiful, contemporary house in
Marin County hills on 2 private
acres w/incredible view & world-
class recording studio for sale. 35
mins. from SF. Modern, all con-
veniences, hot tub, dual fireplace.
Email: pluzy@drumming.com or
(415) 258-8140.

Miscellaneous

DI-GI-ROM Full Services
For Electronic Media

CD-ROM • DVD • AUDIO CD

MASTERING REPLICATION PRINTING

- CD-ROM One-Offs: Same Day - On Site • 2000 CD-R Duplication: Next Day - On Site
- Video Compression: BetaSP & VHS to AVI, Quicktime, MPEG1 & MPEG2: On-Site
- Audio & DVD Mastering Suites: On-Site • DVD-R Disc Duplication: On Site
- Audio Archival Restoration with **CEDAR** • **Personalized Service: Outta Sight!**

800-815-3444

In New York City: 212-730-2111

On the web: www.digirom.com

Best Pick

DIGITAL FORCE

Feel the Power of Excellence

toll free: **877-DISC-USA**

www.digitalforce.com

(212) 252-9300 in NYC

TOTAL CD,

CD-ROM, DVD, &

CASSETTE PRODUCTION

149 MADISON AVENUE NY, NY 10016

MIX CLASSIFIEDS WORK FOR YOU

Text rate: \$115 per inch; eight (8) lines per inch (approximately 27-32 character spaces per line); one-inch minimum.
\$10 per bold line. Each space and punctuation mark counts as a character. \$115 minimum charge for each ad placed.

Enhancements: \$10 black border, \$25 for a one-color-screened background, \$25 for a reverse, \$25 for Post Office box service. Charges are based on a per-insertion basis. Call for color charges.

Display rate: \$150 per inch (1" minimum/half-page maximum). Ads over 1" changed at quarter inch increments. Display Classified advertising must be camera-ready, sized to MIX column widths and specs. Frequency discount rates available; call for information.

Closing: Fifteenth of the month, six weeks prior to the cover date (ex: April issue closing is February 15). Ads received after closing will be held for the next month unless other wise stated. Cancellations will not be accepted after the closing date. Copy changes and cancellations must be submitted in writing.

Other requirements: Payment must be included with copy. Check, Visa, MasterCard, Discover or American Express accepted. Sorry, no billing or credit available. Full street address (PO boxes aren't sufficient) and phone numbers must accompany all requests. All words to be bold should be underlined. Copy must be typed or printed legibly in standard upper/ lower case. Publishers are not responsible for errors due to poor copy. Arrangement of characters may be altered in typesetting process due to space. The publishers are not liable for the contents of advertisements.

The small print: No stated or implied discounts allowed on new equipment sales. Publishers reserve the right to refuse or discontinue any ad deemed inappropriate.

Send coupon and payment to: Mix Magazine Classifieds, Attn: Robin Boyce-Trubitt, 6400 Hollis St., #12, Emeryville, CA 94608, tel. (800) 544-5530 or (510) 653-3307; fax (510) 653-8171. e-mail: mixclass@intertec.com.

CATEGORIES AVAILABLE (check one):

- | | |
|--|--|
| <input type="checkbox"/> Acoustic Products | <input type="checkbox"/> Internet |
| <input type="checkbox"/> Business Opportunities | <input type="checkbox"/> Maintenance Services & Repairs |
| <input type="checkbox"/> Computer Products | <input type="checkbox"/> Music/Software |
| <input type="checkbox"/> Employment | <input type="checkbox"/> Publications/Books |
| <input type="checkbox"/> Equipment Financing & Insurance | <input type="checkbox"/> Recording Services |
| <input type="checkbox"/> Equipment for Sale | <input type="checkbox"/> Records, Tapes & CD Services & Supplies |
| <input type="checkbox"/> Equipment Rentals | <input type="checkbox"/> Studios |
| <input type="checkbox"/> Equipment Wanted | <input type="checkbox"/> Video Equipment |
| <input type="checkbox"/> Instruction | <input type="checkbox"/> Miscellaneous |

Attach Your Classified Ad Copy on a Separate Sheet, Typed
Double-Spaced or Printed Clearly in Capital and Lower-Case Letters.

Company Name _____

Name _____

Address (no PO Boxes) _____

City _____

State _____ Zip _____

Phone () _____

Signature _____

Display (\$150 per inch)	\$ _____
Text (\$115 per inch, one-inch minimum)	\$ _____
Bold @\$10 additional	\$ _____
Border @ \$10	\$ _____
Reverse @ \$25	\$ _____
Screen @ \$25	\$ _____
Blind PO box @ \$25	\$ _____
TOTAL PAYMENT INCLUDED	\$ _____
<input type="checkbox"/> Visa	<input type="checkbox"/> MC
<input type="checkbox"/> AMEX	<input type="checkbox"/> Discover
<input type="checkbox"/> Check/Money Order # _____	
Card # _____	
Exp. _____	

Top 10 Things You Can Do With the Recording Industry Sourcebook

1. Book a studio

2. Search for a record label

3. Hire a good lawyer

4. Master your single

5. Print & package your new CD

6. Distribute your recording

7. Film your music video

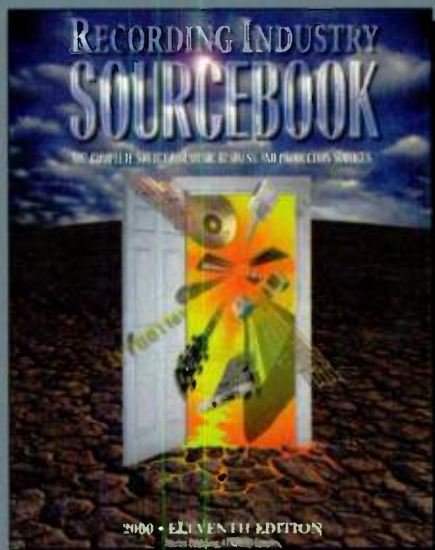
8. Remote record

9. Change publicists

10. Promote your next concert

"This book is amazing. Everything I need to know is here. Thank you."

—J.M., Student/Singer



Discover even more things you can do with the Recording Industry Sourcebook, 11th Edition December Release! Order your copy today!

"I'm going to rise to the top with this. Thanks!" —L.A., Sales

Every day musicians, engineers, studio owners, and many other industry professionals use the *Recording Industry Sourcebook*, acknowledged as the source for recording industry information.

- Over 9,000 listings
- 65 categories
- Attractive, easy-to-use spiral bound tab directory
- Durable enough for any road trip or repeated office reference
- Business listings include names, titles, phone & fax numbers, styles of music, unsolicited materials accepted or not, and more
- Production categories include equipment, credits, staff, and specialties

ORDER INFORMATION:

Recording Industry Sourcebook: \$79.95

\$9.95 S&H via US mail; \$11.95 UPS delivery, plus tax.

Item # RIS11

Call (800) 543-7771; Fax (800) 633-6219

Outside the US: Call (913) 967-1719; Fax (913) 967-1901

Or send a check or money order, made payable to
Recording Industry Sourcebook, c/o Intertec Publishing,
P.O. Box 12901, Overland Park, KS 66282-2901

Order Code: DM

Order online at: www.mixbooks.com

Thinking about a sampler?

THINK

The computer.

Mac or Windows

Today's fatest PCs and Power Macs are well below the price of today's premium samplers. And **they're as powerful as ever.**

Apple's new G4 Power Mac is so fast, it qualifies as a super computer! You can do a lot more than just sampling, and when you're not creating music, you can **surf the net**. Try that with a conventional sampler...



The hardware.

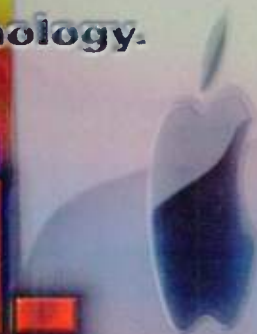
MOTU 2408 family

Have you ever seen a sampler with this **many inputs/outputs**? And **24-bit I/O**? Mark of the Unicorn's 2408 audio interface has set a new standard for computer-based hard disk recording. And now it's an entire family: start with an affordable core system that best suits your immediate I/O needs and **expand** later. At these prices, you can get exactly what you need. And you also get **AudioDesk** workstation software for Mac OS, with recording, editing, mixing, processing and mastering features that go **way beyond traditional sampling**. Add MIDI sequencing with a crossgrade to **Digital Performer**. And both programs function seamlessly with the ultimate sampler software from BitHeadz: **Unity DS-1**...



For about the same price as a traditional sampler,
you can own the latest in computer-based sampling
and audio workstation technology.

AGAIN.



The software.

BitHeadz Unity DS-1

Unity DS-1 is the **absolute cutting edge in sampling**. It's a virtual sampler that lives inside your computer and does MIDI and audio I/O directly with host applications like MOTU's Digital Performer. And Unity **runs circles around costly hardware samplers**. Start with 24-bit audio. Now add more RAM than a traditional sampler could even dream about. Next, you get **unsurpassed sound quality** with direct digital I/O to your hard disk recording environment. Unity supports all popular sample library formats — and it can even import SDII and WAV files. That's why Unity DS-1 is showing up on stages, in studios and on the road with more world renowned artists every day. Join the ranks of musicians who have already discovered why the computer has become the sampler of choice.



The experts.

Sweetwater

Computer-based sampling is here — with **astounding advantages** over traditional sampling.

Sweetwater
music technology direct

Sweetwater Sound has the **experience and expertise** to configure an affordable system that's just right for you. And Sweetwater gives you the best service and support available — with **no hassles**. It's what we call the Sweetwater Difference. Call today and experience it for yourself.

CALL NOW

(800) 222-4700

www.sweetwater.com

**MUSIC TECHNOLOGY DIRECT —
and the Best Value, Guaranteed!**

Voice: (219) 432-8176 • Fax: (219) 432-1758 • Email: sales@sweetwater.com
5335 Bass Road • Fort Wayne, IN 46808

CIRCLE #122 ON PRODUCT INFO CARD

MP20



The Perfect Gift for Your Favorite Pair Of Microphones!

The PreSonus MP20 Two Channel Discrete Dual Servo Mic Preamp with Mix Bus.

Each channel includes Phase Reversal, Phantom Power, 20dB Pad, Rumble Filter & Full Output Metering. HUGE Class A Sound! 10Hz to 50kHz Bandwidth. EIN less than -127.5dB. IDSS control adjusts Harmonic Distortion to achieve Vintage Audio Textures. Servo Balanced Send and Return Jacks on each channel for external balanced processing. High output Headphone Amplifier.

M80



The Ultimate Plug-In.

The PreSonus M80 Eight Channel Microphone/Preamplifier with Mix Bus. "A microphone power tool! Eight channels of no-fuss gain, a convenient mix bus and flexible I/O." Loren Alldrin, Pro Audio Review. Amazing front end for two, four or eight channel analog to digital converters including Digidesign™ 888, MOTU™ 2408 & others. High headroom mix bus allows true stereo imaging. High impedance inputs for exceptional instrument preamplification. Insert your favorite outboard gear via Servo Balanced Send/Return Jacks. Feed the inputs of any digital audio workstation with the M80's discrete outputs. Chain multiple M80's together via the Auxilliary Input. Mix Bus assign for Multiple Mic/Instrument Stereo Imaging. IDSS control adjusts Harmonic Distortion to achieve Vintage Audio Textures.

VXP



Instant Vocal Karma.

The PreSonus VXP Dual Servo Mic Preamp Voice Processor. Your all-in-one, easy-to-use, set & forget total microphone processing solution!

Mic-Preamp: Hi quality transformer with Class A Discrete Input Buffer, Dual Servo gain stages. IDSS Control. Phantom Power. 20dB Pad. Compressor: 16 Pre-set compression curves. Downward Expander (Variable). De-esser (Variable). Crystal Clear Compression Optimized for Maximum Dynamics Control. Equalizer: Four Band, Semi-Parametric EQ with Low and High Shelving. High Pass Rumble Filter. Narrow Q select. Peak limiter Maximizes Bit Resolution for Digital Recorders & provides a separate Threshold from the compressor section. Optional 24-Bit, 48K/96K digital audio output card. Crystal converters, selectable sample rate, psycho-acoustic dithering, S/PDIF and AES/EBU output connections.

"Wholly Praiseworthy..."

... products seem to come along only once in a blue moon..."

MP20 Review, October 1999

Brian Knave, Electronic Musician



*Enjoy great sound and fast, flexible operation without breaking the bank.
Call Sweetwater and add a PreSonus mic-pre to your rack today!*

Sweetwater

music technology direct

CALL (800) 222-4700

sales@sweetwater.com



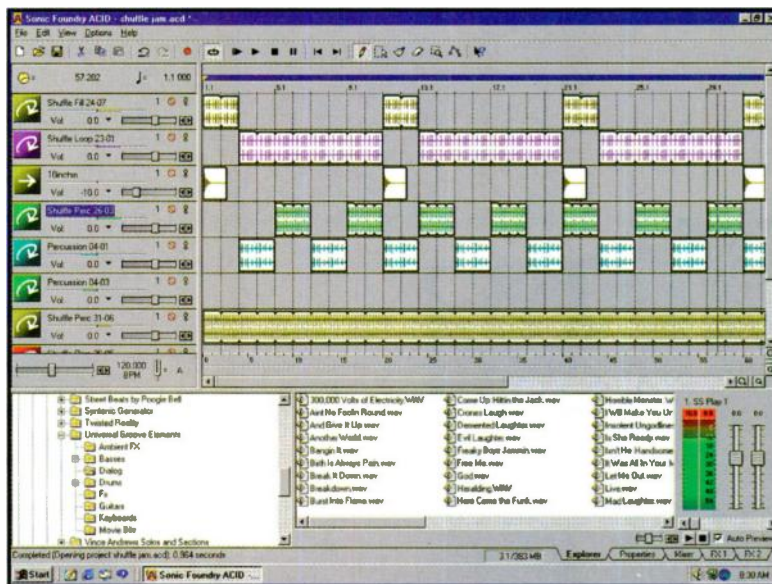
www.presonus.com

SONIC FOUNDRY ACID

KEEPING TIME WITH LOOP-BASED SOFTWARE

Sonic Foundry's Acid software has fundamentally changed the way many people create loop-based audio productions. It's the first program that actually made this hardcore Mac user finally break down and buy a PC, and I'm glad I did. Acid's ability to match audio loops of different tempos and pitches—in real time—offers a powerful studio tool, with some interesting applications as an audio loop utility.

Creating great audio productions using Acid alone is no sweat. However, I like to work with a Mac-based sequencer and tons of MIDI gear, so I wanted to integrate Acid into my setup and take advantage of its features.



Acid matches loops of different tempos and pitches in real time.

TIMEKEEPER, TIMESAVER

There's nothing worse than spending hours getting a bunch of loops in time with each other, only to find out that they don't work together. Acid immediately matches the tempos of different audio loops as soon as they're played from Acid's Media Explorer. Then, once the loops are dragged from Media Explorer into your Session, you can hear instantly how they work together, which saves an enormous amount of time.

Many producers like to trigger samples from keyboards or drum pads, which can add feel and spontaneity to what would otherwise be methodical programming. If you like to work this way, Acid's Export function comes in handy. For example, you might import several samples from different sources at different tempos into an Acid session. You set the session tempo (in BPM) for your project, then go to the File menu and select Export. Once the window pops up, you can export either the entire track or the loops as separate .AIFF or .WAV files, at the project tempo, to a user-specified folder on your hard disk.

IMPORT TO EXPORT

If you have a sampler that imports .WAV or .AIFF files (most late models), you can then load the new .WAVs or .AIFFs into your sampler and trigger them from different keys or pads. If you have an older-model sampler with a proprietary file format, you can still take advantage of Acid's time-sync features by playing your samples in real time from Acid and recording them to DAT, then sampling from the DAT. It may take a little longer, but it's still much easier and faster than getting your samples in time the old-fashioned way. If your MIDI sequencing program—Cubase, Vision, Logic Audio, Digital Performer, etc.—supports audio files, you can just import the loop files into an audio track on your sequencer, and copy and paste to your heart's content.

Export Track, another extremely useful function, exports the entire Acid track as a separate file that can be imported into any

audio program. I've used this many times to change the tempo of a vocal for a remix. For this to work properly, simply enter the original tempo of the vocal into the Properties window for that file. Once that's done, you can speed up or slow down the file as you wish. This provides instant feedback on how far you can stretch or compress a vocal file before it starts sounding weird. Otherwise, time stretching and compressing requires lengthy processing times just to see how far the file can be taken. Once the vocal is at the desired tempo, I export it as a new file and import it into my sequencer. Easy and fast. ■

Doug Beck is a producer/remixer/programmer living in NYC. Doug and partner DJ Boris (collectively Boris & Beck) have recently completed remixes for Britney Spears, Jordan Knight, Cyndi Lauper, The Fixx and many others. Boris & Beck also recently completed production on Wonderbox featuring Monica Murphy for Jellybean Records.

BY DOUG BECK

The 1642-VLZ PRO: midsize luxury for

\$999



10 XDR[®] mic preamplifiers (on mono mic inputs Chs. 1-10) with the finest sound quality (and specifications) ever on a compact mixer. 0dB to 60dB gain range.

75Hz low cut filters on all 10 mic channels. Sharp 18dB/oct., phase accurate circuitry cuts infrasonics caused by stage rumble, wind noise and P-pops.

Sweepable midrange EQ on Chs. 1-8 with incredibly wide 100Hz-8kHz sweep range. Fixed shelving HF EQ at 12kHz and fixed shelving LF at 80Hz.

Overload and ultra-sensitive, -20dB **Signal Present LEDs** on every channel.

4 aux sends per channel. Auxes 1 & 2 are pre/post switchable; Auxes 3 & 4 are fixed post-fader.

4 stereo line inputs. Unity summed w/mic-in chs 9-12, ± 20 dB chs 13-16.

8 mono line inputs (Chs. 1-8), with +15dB to -45dB gain range. Bal./unbal. **direct outs** on chs 1-8. **Inserts** on the first 8 chs.

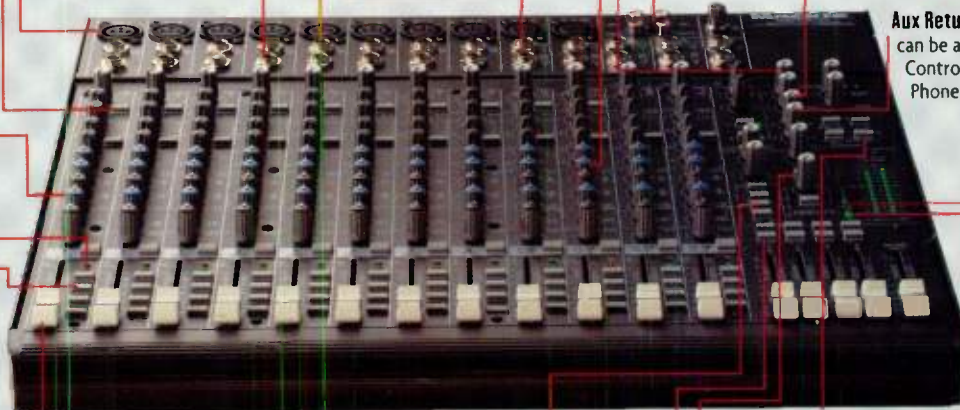
Effects to Monitor controls on Aux Returns 1 & 2 let you fold EFX back into stage monitor mixes independent of main PA.

4-band EQ on Chs. 9-16. With 12kHz HF, 3K Hi-Mid, 800Hz Low-Mid and 80Hz LF.

RCA inputs and outputs with tape input level control.

Aux Return 3 can be assigned to Main Mix or Subs 1 & 2 or 3 & 4.

Aux Return 4 can be assigned to Control Room/Phones only.



ESOTERIC MIC PRE
LOWEST NOISE,
HIGHEST HEADROOM
0.0007% THD

130dB DYNAMIC RANGE TO
HANDLE HOT 24-BIT/192kHz
OUTPUT FROM DIGITAL AUDIO
WORK STATIONS

FLAT WITHIN 1/10thdB ACROSS
20Hz to 20kHz AND DOWN ONLY
-3dB AT 1Hz and 192kHz

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

IMPEDANCE INDEPENDENT
BEST RF REJECTION OF ANY
COMPACT MIXER AVAILABLE

LIVE SOUND

mic & mono line inputs mic & stereo inputs



8-TRACK RECORDING effects

60mm logarithmic taper faders with ultra-long-life resistance elements provide linear volume change from full-on to $-\infty$.

On the back: Direct outs (Chs. 1-8, bal./unbal.), TRS mono-main output with level control, XLR stereo main outputs with recessed mic/+4 line level switch.

Control Room/Phones Section with separate headphone and control room level controls. Source Matrix selects any combination of Main Mix, Subs 1 & 2, Subs 3 & 4 or Tape for exceptional studio monitoring flexibility. Also lets you create a third live stage monitor mix or separate feed.

True 4-bus configuration with ch and master LR assigns. Each bus has 2 outputs, letting you hook up all 8 chs of a recorder without constant repatching.

Master Aux Return Solo switch.

Tape to Main Mix switch.

RUDE solo LED in bright ecologically-correct green.

Level-set LED + channel strip in-place stereo solo buttons make initial level setting fast and accurate.

You asked. We listened.

The 1642-VLZ PRO is packed with goodies including sweepable midrange EQ, 75Hz low cut filters to cut room rumble and drum vibrations, Control Room/Phones switching matrix with individual level controls, four aux sends per channel, constant loudness pan control and in-place stereo solo.

Recording: The new 1642-VLZ PRO gives you the finest mic preamps ever offered on a compact mixer. Two dedicated channels for tracking. Eight for

monitoring. And two stereo channels for effects. Plus "double-bussed" submix outputs so you can feed all 8 channels of your recorder without having to re-patch.

Live and Alive: Mixers aren't always sitting calmly on the side of the stage anymore. Often, they're out front. They're instruments. The 1642-VLZ PRO has plenty of mic inputs for vocals, guitars and drums – plus 4 stereo channels for DJs and Keyboards.

Call toll-free or visit our web site for complete information on the new midsize luxury 1642-VLZ PRO. Learn why it's the best compact studio or live sound mixer (and rip-roarin' Electronica sound collage board) on the planet.

* \$999 suggested U.S. retail price does not include extra toppings or optional thick Sicilian crust. Your price may vary. No user-serviceable parts in this footnote.



MADE IN
WOODBRIDGE
USA
BY GENUINE
MACKIES

800/258-6883 • www.mackie.com

CIRCLE #124 ON PRODUCT INFO CARD



Neil Karsh is the Vice President of Audio Services for New York Media Group. Recently, Karsh selected LSR monitoring systems for two of his Manhattan facilities, *Lower East Side* and *East Side Audio*.

"We've installed the first of our LSR 5.1 surround systems at East Side Audio and it's a great addition. The sound is extremely clear and is enjoyed by our mixers and our clients. Everyone is very pleased with the result."

New York

The World's Best Performing THX® Monitoring Systems Are Also The World's Most Applauded.

Since its introduction in 1997, the system-engineered JBL LSR Series has become a favorite choice of engineers, producers and performers, many of whom have also become its most loyal advocates. More important, this acceptance is found in every major geographic area of the recording industry; from Los Angeles and New York to Nashville and London.



LSR 32

LSR 28P

LSR 12P

Monitors Whose Performance Profile Was Determined By Science, Not Opinion.

During a half century of building the most technically advanced studio monitors, JBL has developed a long list of working relationships with key recording professionals around the globe. As a direct result of this unique collaboration, these industry leaders have chosen JBL monitors more often than any other brand. Not once or twice, but consistently for decades. In fact, JBL monitors are a part of the history of recording itself. Consider as examples, the now fabled JBL 4200 and 4400 Series that, at their launch, actually defined an entirely new standard and new category of monitor. Such is the case now with the entire LSR line.

CIRCLE #125 ON PRODUCT INFO CARD

LSR. Profiles

The world's most noted recording professionals discuss the world's most advanced monitoring systems.

NO.1: New York / Los Angeles



David Kershenbaum is a Grammy Award winner who has been on the cutting-edge of music production for decades. His discography is a remarkable 'who's who' of popular recording.

"Speakers have always been important to me and I've had many systems that I have really loved. When Kevin Smith told me about LSRs, I tried them and was amazed at the accurate, flat response and how the mixes translated so well compared to other monitoring systems. Now we're using them to track our new records and we'll use them to mix, as well."

Los Angeles



A Harman International Company

www.jblpro.com

© 1999 JBL Professional