

MIX

**Video for Audio:
Focusing on Formats**

**Low Cost Synchronizers
for Project Studios**


PROFESSIONAL RECORDING · SOUND AND MUSIC PRODUCTION

**CD Production Music
and Sound Effects Libraries**

**POSTING
"THE SIMPSONS"**



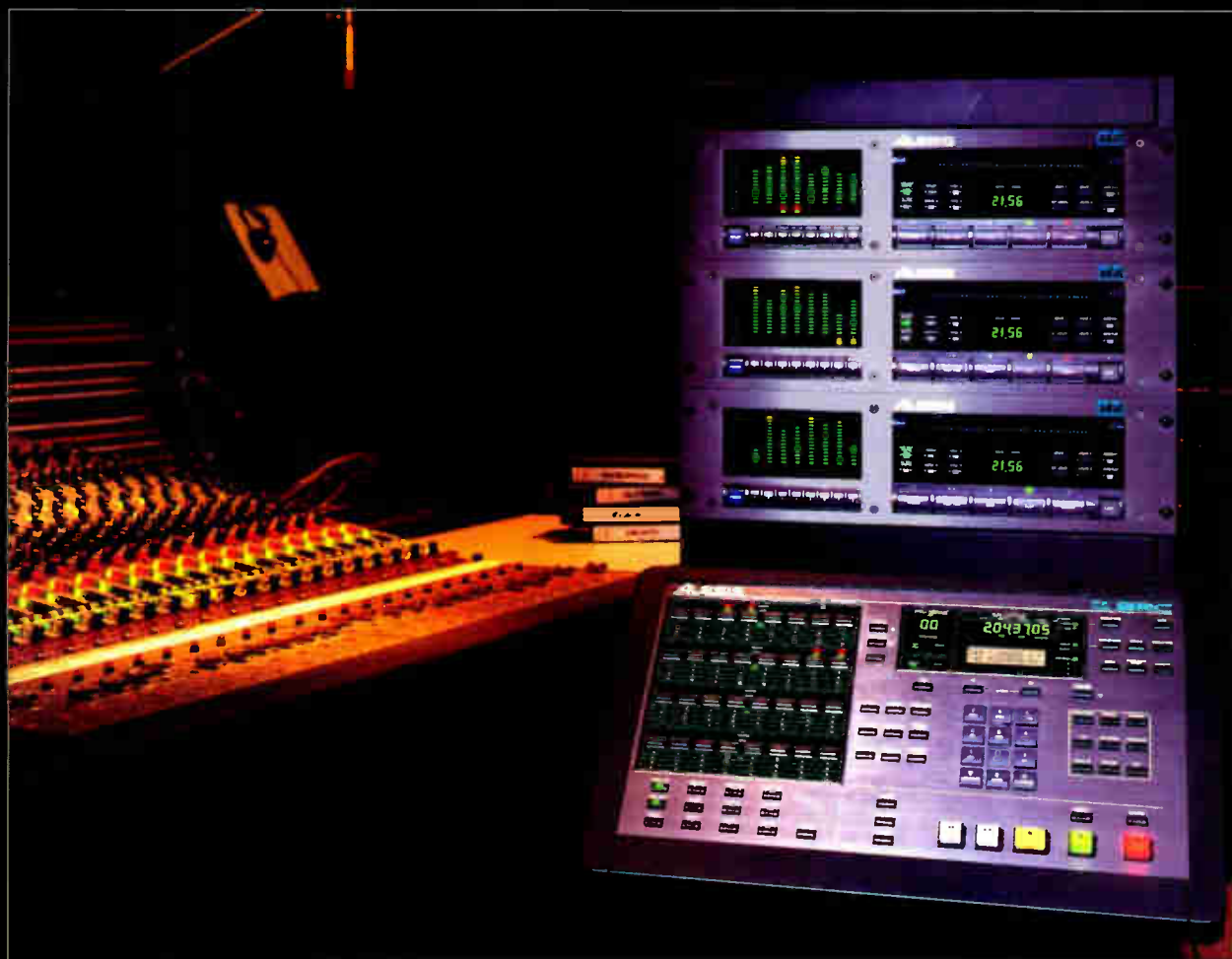
*****5-DIGIT 91329
MX GANDEM008019109 783 DIR
MARK R GANDER
JBL PROFESSIONAL
8500 BALBOA BLVD BX2200
NORTHRIDGE CA 91329



0 174

**Directory:
Video Production and
Post-Production Facilities**

Everything You've Been Hearing Is True



Studio D The Village Recorder

adat

Call 1-800-5-ALESIS for more information.

Alesis Corporation 3630 Holdrege Avenue Los Angeles California 90016

ALESIS
STUDIO ELECTRONICS

USE READER SERVICE CARD FOR MORE INFO

world radio history

As an engineer, I want a guarantee of sonic quality at the end of the day. As a producer, I want a guarantee that the room I'm working in will be reliable, and give me the most flexibility to create music. When I choose a room, I insist on a Neve VR."

Elliot Scheiner, Grammy-award winning engineer and producer, on the Neve VR Console

It's all based on trust . . . Knowing that the perfect fader move will be replayed again and again without a hitch, that the perfect mix from last week is only a RECALL away . . . It's knowing that this board doesn't fail . . . that it will hold its value and usefulness for years to come . . . And it's knowing that this is truly the finest sounding console in the world. That's trust."

Tom Davis, Director of Audio/Chief Mixer, 525 Post Production (LA), on the Neve VRP Post Production Console

But if you really want an earful about Neve consoles and CD-quality sound for film and video, call the Power Station and speak with Tony Bongiovi.



Power Station (NYC) – (212) 246-2900.
Studio C features a Neve VRP72 with Flying Faders

Siemens Audio Inc.
Neve & AMS Professional Audio Products

7 Parklawn Drive, Bethel, CT 06801 • Tel: (203) 744-6230 • Fax: (203) 792-7863

NY: (212) 956-6464 • TN: (615) 329-9584 • IL: (312) 645-9888
• CA: (213) 461-6383 • Toronto: (416) 365-3363

MIX

PROFESSIONAL RECORDING • SOUND AND MUSIC PRODUCTION

APRIL 1992, VOLUME 16, NUMBER 4

AUDIO

- 15 The Fast Lane:** Little Nammsters
—A Species Study
by Stephen St. Croix
- 23 Insider Audio:** The PASC Algorithm, Part 2
by Ken Pohlmann
- 29 Juxtapositions:** Digital Synchronization, Part 2
by Mel Lambert
- 61 Artist's Studio:** William Orbit
by Paul Tinggen
- 76 CD Production Music
and Sound Effects Libraries:**
A User's Guide *by George Petersen*



PAGE 76

- 84 International Update:** The Birth of BOP Studios
by Dan Daley
- 129 Producer's Desk:** Andre Fischer
by Blair Jackson

AUDIO POST-PRODUCTION

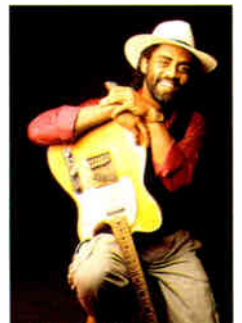
- 34 Posting "The Simpsons":**
How Not to Have A Cow
by Dan Daley
- 40 Video for Audio:**
Focusing on Formats
by Tom Kenny
- 48 Post Script:** "Invasion of the Bunny Snatchers"
by Iain Blair
- 96 Global Audio:** Telecommuting in the '90s
by Chris Reilly
- 124 Studio View:** Synching and Swimming
by Dan Daley



PAGE 34

PRODUCTS

- 55 The Byte Beat:** Hardware and Software Products
at NAMM *by Paul Potyen*
- 59 Chip Shots:** Multimedia Comes Alive at NAMM
and MacWorld *by Paul Potyen*
- 104 Preview/Hot Off the Shelf**
- 108 Auditions:** Kurzweil K2000;
Korg A1 Performance
Signal Processor; Aphex
Compellor Model 320
by George Petersen
- 114 Field Test:**
Digidesign
Pro Tools
by Paul Potyen



PAGE 156

LIVE SOUND

- 132 **SoundCheck/News Flashes**
- 133 **Live Sounds:** Vinnie Moore
by David (Rudy) Trubitt
- 142 **Computer Control:** What Do I Care?
by David (Rudy) Trubitt
- 144 **New Sound Reinforcement Products**

TAPE & DISC

- 148 **Philips Unveils DCC Models at CES**
by Philip De Lancie
- 154 **Tape & Disc News/Splices** *by Philip De Lancie*

MUSIC

- 66 **Lunching with Bonzai:**
Rickie Lee Jones—
Sweet & Spicy
by Mr. Bonzai
- 156 **Music & Recording Notes:**
Alligator Records
Turns 20
by Jeff Forlenza;
Jonnie "Most"
Davis—Mixer
on the Rise
by Dan Daley



PAGE 66



PAGE 40

DEPARTMENTS

- 6 **From the Editor**
- 9 **Current**
- 10 **Industry Notes**
- 162 **Coast to Coast**
(Including Sessions,
NY Metro Report,
L.A. Grapevine,
Nashville Skyline)
- 184 **Ad Index &
Reader Service Card**
- 185 **Classifieds**
- 192 **Feedback**

DIRECTORY

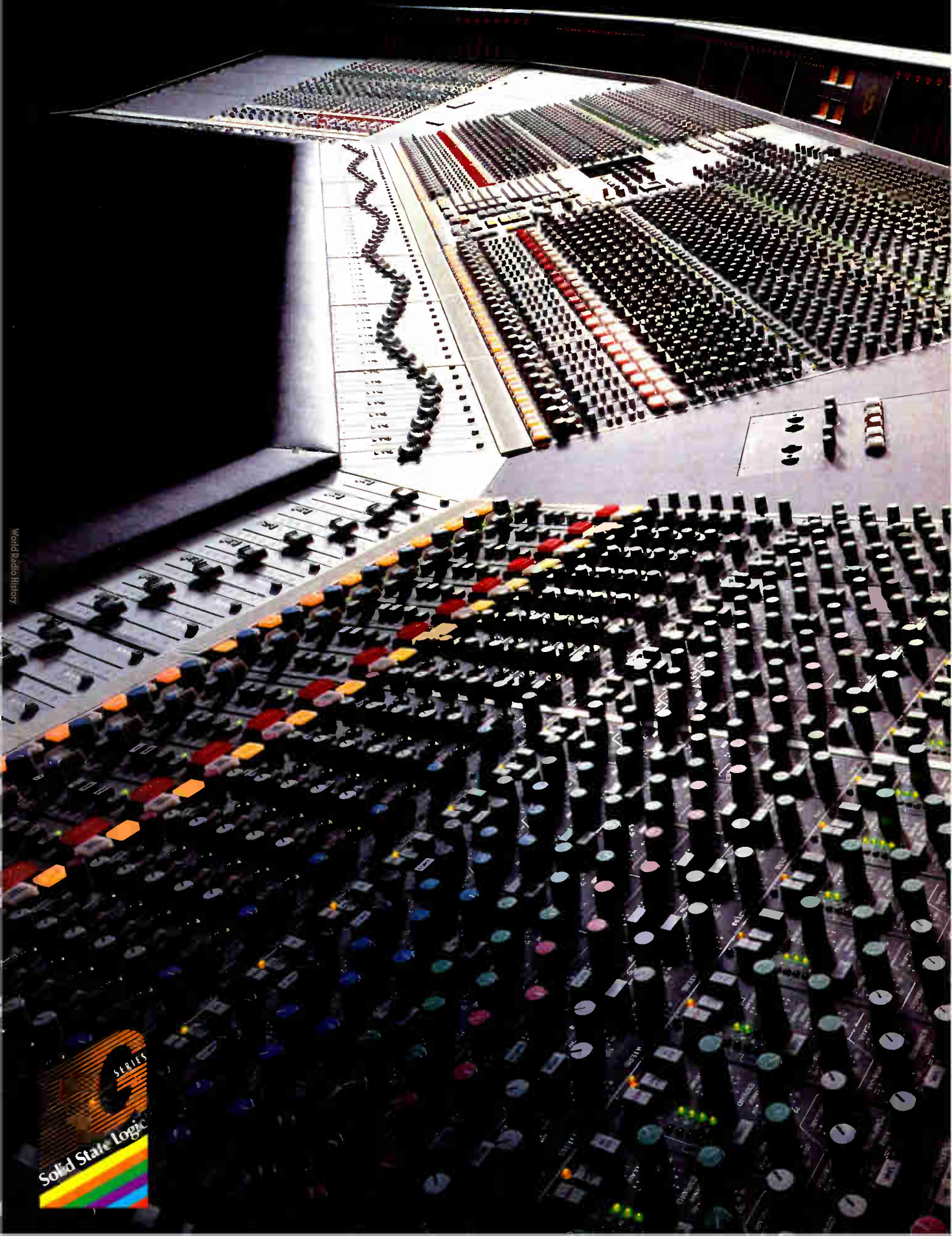
- 167 **Video Production
and Post-Production
Facilities**

Cover: Located in New York City, the tapeless Studio 3 at National Sound (a division of National Video Center) features an 80-input Otari/Sound Workshop Series 54 console with Diskmix 3 automation and an NED PostPro with Synclavier 6400. The MIDI guitar can control equipment being played during scoring sessions. The room, renovated late last year, is one of four mix-to-pix suites at the studio complex.

Photo: Bo Parker/National Video Center.



D R E A M M A C



World Radio History



H I N E

SL 4000 G SERIES Master Studio System

■
'L' or 'U' shaped console wings

■
Mono or stereo modules

■
Advanced G Series circuitry and sonic performance

■
Two styles of equalisation

■
Compressor/limiter, expander/gate in every channel

■
G Series Studio Computer provides the world's most advanced
session management software

■
Ultimation™ dual automation system
(moving fader or VCA operation)

■
Total Recall™ of all I/O module settings

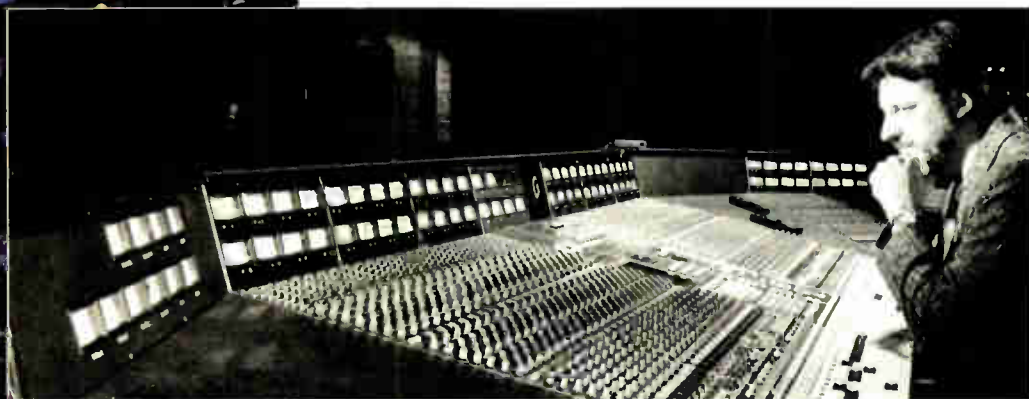
■
Tape autolocation under computer control

■
Synchroniser system for master and slave and multi-slave
autolocation and synchronisation of audio, video or film transports
to all timecode formats and bi-phase or tach pulses

■
Events Controller for non-synchronous devices

■
Programmable equalisation and panning system

■
Worldwide standard in music production



Solid State Logic

International Headquarters:

Begbroke, Oxford, England OX5 1RU · Tel: (0865) 842300

Paris (1) 34 60 46 66 · Milan (2) 612 17 20 · Tokyo (3) 54 74 11 44

New York (212) 315 1111 · Los Angeles (213) 463 4444 · Toronto (416) 363 0101

US Toll Free: 800-343 0101

All you'll ever
need in a tape.

And then
some.



ENGINEERED TO EXCEED all expectations, Ampex 499 Grand Master® Gold delivers low print through the lowest noise, lowest distortion, and highest output of any high-performance analog mastering tape. Not to mention superior mechanical characteristics to ensure problem-free tape handling on today's high-end transports.

ALL WITH THE legendary consistency you've come to expect from Ampex Grand Master® 456. And all backed by the industry's most highly acclaimed service and support.

SO IF WHAT you really need is performance, and then some, go with Ampex Grand Master 456 and 499 Grand Master Gold.

AMPEX

A MASTER OF ENGINEERING

Ampex Recording Media Corporation 401 Broadway M.S. 22-02 Redwood City CA 94063 © 1991 Ampex Corporation

USE READER SERVICE CARD FOR MORE INFO

CURRENT

Sony Announces Digital Audio for Film Format

In late February, Sony Corporation announced a new digital audio release format for motion pictures, to be called Sony Digital Sound. That brings the number of companies with plans for digital audio film sound to three, the others being Dolby, with its 6-channel SR•D format, and Optical Radian Corp./Kodak, the first entry into the field with its 6-channel Cinema Digital Sound. Optical Radian Corp. has since ceased its CDS activities. Former employees have formed their own firm, CDS Inc., and are seeking financial backing.

Sony Software Corp., in conjunction with sound professionals from subsidiary Sony Pictures Entertainment, is now developing a method for bringing multichannel digital audio to theaters. "Ultimately, Sony Pictures would become one of many customers of the new format," says Peter Dille of Sony Software. "We can't say any more now except that digital-analog compatibility on a single 35mm print is recognized as critical. We felt that it was important to let the industry know we're working on it."

Full details of SDS will be announced sometime in 1992, according to Dille. Watch this space for initial specs and updates.

SPARS Workstation Conference

The Society of Professional Audio Recording Services will host a weekend technical conference and interface with leading manufacturers of digital audio workstations on May 16-17, at the Beverly Garland Hotel in North Hollywood. Previous workstation conferences were held in Chicago, Nashville and Orlando. A major focus of the North Hollywood gathering will be the role of DAWs in the video post-production

industry.

"There is no question that we selected L.A. because of the very heavy interest in workstations for audio-for-video applications, as well as for film work," says Richard Trump, SPARS president. "We had requests from exhibitors that L.A. be the next site for a conference, and it's obviously a reaction to where the primary market is. Video offers one of the greatest strengths in our industry right now—an economy-buster, if you will."

Trump will chair the event, assisted by SPARS first vice president Dwight Cook. Participating manufacturers, all of whom plan to offer hands-on demonstrations, include Akai, AMS, Digidesign, New England Digital, Otari, Roland Pro Audio/Video, Solid State Logic, Sonic Solutions, Studer (Dyaxis) and WaveFrame. Non-SPARS members are invited to attend. Contact SPARS executive director Shirley Kaye at (800) 771-7727 for more information.

Mix Digital Supplement

Mix magazine will publish a 64-page supplement on "The Digital Studio" as part of its 15th anniversary issue in July. Senior editor Mel Lambert is coordinating the editorial effort, which includes articles on

digital console topographies, magneto-optical and phase-change formats, soundfile and data exchange standards, networking workstation ATR/VTR serial control, user interface designs and profiles of leading digital facilities from across the country. The publication will also feature a digital audio product guide.

Congratulations!

Mix congratulates the 1992 Grammy Award winners in the producing and engineering categories, announced February 25 at Radio City Music Hall in New York City: Producer of the Year David Foster, for his work on Natalie Cole's *Unforgettable*, among other projects; Engineered Album, *Unforgettable*, engineered by Al Schmitt, Woody Woodruff and Armin Steiner; Classical Producer of the Year James Mallinson; and Engineered Recording, Classical, *Symphony No. 1, Op. 9; Piano Concerto, Op. 38; Souvenirs, Op. 28*, engineered by William Hockstra.

Convention News

The big convention this month takes place in Las Vegas when the National Association of Broadcasters meets at the Convention Center from April 12-16. The NAB Engineering Conference will take place on those same

—CONTINUED ON PAGE 10

No More Longbox

As we went to press, the Recording Industry Association of America announced that member record companies—which produce and distribute 95% of prerecorded music product domestically—have agreed to do away with the 6-inch x 12-inch CD longbox for all new releases by April 1993. Some record labels have already pursued alternative packaging on certain artist's projects, and the RIAA decision leaves it up to individual companies to work out the packaging details. The final product, however, is to fit in a 5-inch x 5.5-inch space—the size of a jewel box—with little, if any, disposable packaging.

The National Association of Record Merchandisers, while supportive of packaging that would not harm the environment, has raised concerns that the new size poses problems with shoplifting and in-store retail display setups. Read next month's "Tape & Disc News" for more information.

INDUSTRY NOTES

The Sony Professional Tape Division of Sony Recording Media of America (Boulder, CO) promoted Kenneth F. Wiedeman to vice president of sales and marketing. Wiedeman is overseeing strategic marketing and planning; the coordination of sales, marketing and operational staffs; and the service and distribution of Sony's pro tape products. Also at Sony Professional Tape, Joseph E. Tibensky was named director of marketing... Fairlight ESP (Sydney, Australia) appointed John Lancken as international sales manager... Audio Processing Technology opened a new North American office, which Mike Smyth will head as U.S. operations manager. The office is located at 6255 Sunset Blvd., Ste. 1026, Hollywood, CA 90028. The phone number is (213) 463-2963; fax is (213) 463-6568... The International Tape Association appointed James Ringwood of Maxell Corporation of America as one of ITA's vice presidents... JBL Professional (Northridge, CA) welcomed Rivera Research and Development into the fold. Paul Rivera was named director of Rivera's research and development/musical instrument amplification systems, and he will continue as chief design engineer. Jack Sonni was appointed research and development applications specialist... Recently a new manufacturer's rep company was formed, Group One Ltd. Jack Kelly, formerly of Klark-Teknik, is president and will be responsible primarily for the East Coast customers and for commercial aspects. Chris Fiehera, a recording engineer and Grammy winner who also was associated with K-T, will be responsible for the West Coast but will also undertake direct customer contact nationwide. The company's main office is in Farmingdale, NY... Anaheim, CA-based Studiomaster appointed three new sales firms: Richard Wilson & Associates is responsible for San Diego, Orange County and Riverside County (all in CA); Las

Vegas; and for the surrounding areas in both states. Tim Edwards Marketing handles L.A. County and regions north of the county through San Luis Obispo and Bakersfield; and Innovative Sales and Marketing is responsible for northern California and northern Nevada... Eighth Day Sound Systems Inc. (Cleveland) chose Joel Solloway to head the company's new division, corporate staging services and special event management... Analog Devices (Norwood, MA) formed an alliance with Hewlett-Packard Co. of Palo Alto, CA, for the purpose of providing both companies with state-of-the-art digital and mixed-signal submicron IC technology... AKG Acoustics (San Leandro, CA) gave all of its regional sales managers the responsibility of providing support for the BSS and Turbo-sound product lines (all sales and marketing support was previously carried by one manager)... Leonardo Software moved to 12421 W. Olympic, Los Angeles, CA 90064. The new phone number is (310) 820-2868... A SPARS digital audio workstation conference will be held in L.A. May 16-17. For brochures and reservations, call Shirley Kaye at (800) 771-7727... Crown International, based in Elkhart, IN, now has a new catalog featuring the full line of Crown mics. To obtain a copy, write to Crown at PO Box 1000, Elkhart, IN 46516-1000, or call (800) 535-6289... There will be an AES Test and Measurement Conference May 29-31, 1992, in Portland, OR... Kristi Nebel is organizing record release kits for independent producers in the folk, jazz and/or blues genres. For more information, write to Nebel in care of Icebird Record Co., 5109 Pt. Fosdick Dr. NW, #E1555, Gig Harbor, WA 98335; or call (206) 884-9705... RLS, which is a company involved in acoustics, media facilities design and A/V systems, moved to 594 Howard St., Ste. 401, San Francisco, CA 94105. Their phone number is (415) 541-0818. ■

—FROM PAGE 9, CURRENT

dates; the HDTV World Conference & Expo comes to the nearby Hilton Hotel from April 13-16. Call Rick Dobson at NAB for more information: (202) 429-5335.

The National Sound & Communications Association will host the NSCA '92 Contractors Conference & Expo at the Anaheim Convention Center, April 27-29. Among the highlights this year are sessions on Room Acoustics—Measurement & Speech Intelligibility, Acoustical Treatment of Problem Areas, and Fiber Optics and the Communications Contractor. A two-hour tour of Anaheim Stadium is scheduled for the final day. For more information, call the NSCA at (708) 598-7070.

StudioTech '92, a regional pro audio trade show hosted by the San Francisco Chapter of NARAS in conjunction with *Mix*, *Electronic Musician*, Audio Images Corporation and Leo's Audio and Music Technologies, will take place June 19-20 at the Golden Gateway Holiday Inn in San Francisco. Audio recording technology provides the primary focus, with MIDI and music software demos also scheduled. Contact Beverly Sommerfeld at NARAS for more information: (415) 433-7112.

Corrections

In our January 1992 article on *Beauty and the Beast*, an incorrect caption accompanies the photo on page 87. Pictured are composer Alan Menken and orchestrator Danny Troob. The late Howard Ashman is not shown. Our apologies.

Our February 1992 report on analog and digital multitracks listed outdated pricing on recorders from Saturn Research. The Model 624 retails at \$39,995; the auto-alignment model 824 retails at \$46,000; and U.S. distributor Promusica (Keene, NH) now covers both machines with a two-year, on-site maintenance agreement. See this issue's "Preview" column on page 107 for an update. ■

LIVING LEGENDS

NOT EVERY MULTITRACK GROWS UP to be a legend. But with Studer multitracks, you're assured of the legendary sound quality and precision audio electronics that have provided years of service, outstanding reliability and excellent performance to the top studios and artists, worldwide.

A future safe design and a proven track record that has remained unmatched in the industry for over 40 years are just two of the many reasons to rely on Studer.

Move up and start your own legend with Studer's newest digitally controlled analog 24-track recorders.

For more information on the A820 and A827 multitracks, call your Studer representative today.



Studer Revox America, Inc. • 1425 Elm Hill Pike • Nashville, TN 37210 • Tel: 615/254-5651 • Fax: 615/256-7619
New York 212/255-4462 • Los Angeles 818/780-4234
Studer Revox Canada Ltd., Toronto 416/510-1347
© 1992 Studer Revox America, Inc.

STUDER

USE READER SERVICE CARD FOR MORE INFO
World Radio History

1. Should you ask a lot of demanding questions before buying a 16-bit sampler?

2. Does it have 20-bit D/A conversion to insure 16-bit fidelity?
3. Does it have multi-mode filters with resonance?
4. Are there multiple Performance locations with “snapshots” of parameters?
5. Is there Truncate Fade-in and Fade-out for “clickless” start and end points?
6. Does it have positional (horizontal) crossfading between Patches?
7. Does it have Time Stretching, and if so, can you see the pitch alteration?
8. Does it have realtime audio digital stereo output versus standard digital I/O only for backup?
9. Does it have Note Number Exclusives for cutting off one sample with another?
10. Does it have an RGB or composite monitor output?
11. Can you combine the velocity-switching, mixing and crossfading of up to four samples on one key?
12. Can you expand the memory with standard Macintosh SIMMs?
13. Does it have an “Undo” or “Recover” function?
14. Is there a mouse port for fast and easy programming and editing?
15. Does it have realtime “Scrubbing” for locating edit points easily?
16. Does it have four-stage rate and level envelopes?
17. Does it have Templates for setting up TVA and TVF envelopes quickly?
18. Is there a comprehensive, world-class sample library available from the manufacturer?
19. Does it have Normalizing?
20. Does it have a Digital Filter with +/- emphasis for permanently “EQing” samples?
21. Is there Auto-looping?
22. Is there realtime aural feedback when looping, and is it easy to do?
23. Are there multiple LFO parameters and waveforms?
24. Is there an Alternating Loop mode?
25. Can you load or save Performances (multi-timbral setups)?
26. Is there matrix modulation in the Patch Control page for flexible control routing?
27. Does it have Analog Feel to make certain Patches sound less “sterile”?
28. Does it have accurate Phase Lock or will it lose stereo imaging when active?
29. Does it have digital Compression and Expansion?
30. Does it have Wave Draw allowing you to actually redraw the waveform?
31. Does it have an Insert function for splicing data into the middle of other data?
32. Does it have an Area Erase function for erasing data but leaving the space (time)?
33. Does it have a sample Mix function with a delay parameter?
34. Does it receive Polyphonic aftertouch?
35. Are there different Velocity Curves available?
36. Is there an Index and Jump function for accessing any page in the sampler easily?
37. Are there “Select” windows for finding and assigning samples patches, etc. quickly?
38. Is there a Volume ID with view field or similar cataloging system?
39. Does it have a 48kHz sampling rate through the digital and analog ins?
40. Is there an “Auto-patch” feature which automatically makes full-blown patches from your samples in a matter of seconds?
41. Does it have resampling, including the ability to resample an entire Performance?
42. Does it have a pre-trigger parameter so as not to lose the attack of your samples?



Yes.

Roland®

Roland Corporation US, Dept. S-770, 7200 Dominion Circle, Los Angeles, CA 90040-3647, 213 685-5141, ext. 315.

USE READER SERVICE CARD FOR MORE INFO

World Radio History

NO AUDIO TAPE HAS EVER RATED SUCH INCREDIBLE RESPONSE.

"I love the extra headroom it gives you. Different types of music call for you to hit the tape differently. I've hit it light and I've hit it hard, and the 3M 996 will definitely take the level." —Ed Cherney,
independent producer

"You can hit it 3 dB hotter without any distortion or bottom-end modulation. It's a mirror image of the source material." —Tom Tucker, Paisley Park Studios

"A lot of engineers and producers want to really be able to slam levels to achieve a certain sound. 3M 996 gives them more options and opens more doors, sonically speaking." —Barry Bongiovi, Power Station

Clear. Dynamic. Musical. Exciting. That's the response recording engineers are giving 3M 996 Audio Mastering Tape. Because 3M 996 audio tape is giving them the performance they've always wanted: The ability to record as hot as you want (level +9) with virtually no distortion. A signal-to-noise ratio of 79.5 dB. Print-through level of -56.5 dB. And maximum output level of +14 dB (at 1 kHz.). So 3M 996 audio tape returns every note, every nuance, every thrill exactly as you put it down. Call 1-800-245-8332 for full information. **We won't be satisfied until you are.**



by Stephen St. Croix

LITTLE NAMMSTERS

A SPECIES STUDY

Nannamheim, Calif., 1/25/92—Well, I did it again. I went to another trade show. And once again, it was amazing.

To take a big breath, screw up my courage and jump into the aisles. To be once again borne upon a sea of retail end-users and children whose parents are so grateful that the kids are out of the house that the adults never asked where the children actually went. To feel the waves of joy from wannabe punks off the street whose pride at getting in (and for free) can be felt even through my safety helmet. And occasionally—occasionally, mind you—to see a qualified buyer or professional musician.

It is always interesting to see what new life-forms will appear at these shows, both evolutionary and spontaneous mutations. The three basic categories were in full evidence at NAMM. These are, of course, the Suits, the Conductors and the XXs. I shall, as you might expect, elaborate.

I'll start with the Suits. This species can be broken down into three subspecies. First, the Type S Suits. These guys are simple (but that's not what the S is for). They have no actual lives of their own outside of their prime directive. They are generally fairly stupid (but that's not what the S is for), and can easily be confused by attempts at direct interaction, such as someone asking a question that might interrupt the auto-pilot speech they live by (and from). The industry itself means absolutely *nothing* to them. Next week it might be saxophones, last week seaplanes or sardines. Yes, these are the Salesmen Savant (this is what the S is for; you pick—salesmen or savant).

Then there are the Type D Suits, who probably account for a significant percentage of the NAMM indigenous types. Sad in a way, they are critical for



ILLUSTRATION: TUKO FUJISAKI

TRI-POWER SERIES



Hear and feel the power of Tri-Power™ at select musical instrument dealers near you. Tri-Power vocal and instrument mics. They're what you've been waiting for—live performance microphones from AKG.

MAKE YOUR PRESENCE KNOWN.

AKG Acoustics, Inc.

1525 Alvarado St., San Leandro, CA 94577
Tel: (510) 351-3500 Fax: (510) 351-0500

Tri-Power is a trademark of AKG Acoustics, Inc.
AKG is a registered trademark of
Akustische U. Kino-Geräte Ges.m.b.H. Austria.
1992 AKG Acoustics, Inc.

the stability of the food chain. The Dreamers. These guys either once played in a local band, once sort of played an instrument or sang, or always wished that they could. They all have exactly the same story, with only one deviation. They all dreamed of the Good Life at the top of the mountain, either as rock stars or some other deviant celebrity role. Then a time came, a dark day for each of them, when the reality of survival forced them to take a day job. Here is where the path splits, but not for long.

Type D1 told himself that this was only a temporary diversion, and that as soon as he had enough money he would quit and get into a musical career full time. This, of course, led to a life of suffering, as every passing day chipped away at his dream and self-image. Sooner or later, they realize that they have, in fact, let it all pass by, that they will never be what they spent their lives pretending to work toward. Somehow they got old while waiting to get famous.

Then there is type D2. They are the lucky ones, for when the day came for

them to get a day job so they could buy burgers for the baby, they saw it for what it truly was, the end of their dream. They took the shock in one year instead of 20 and are far better adjusted. More realistic and happier, they make the best salesmen in the musical instrument industry.

Anyway, at this point these two divergent paths merge. Both Types D1 and D2 want to be as close to the electrifying mystique of the Rich and Famous Artist Industry as possible, and so they end up here, salesmen who were once potential R&F artists themselves.

As I said, a bit sad, but it turns out that they can be viewed as the backbone of it all. Without knowledgeable salesmen, people who know their job *and* know from personal experience what the end-user needs, things would be pretty silly. By the way, some of these guys are monster players, and all of them are carrying a heavy past, so watch out.

And then we have the Type M Suits. These are not really salesmen at all. They started out like the Type Ds, but they are unique because they have made the transition from a dead-end dream to a new creative life: equip-

ment design. They are unique because they have, by their own powers, undergone a metamorphosis. Type M.

They are different because they may *appear* at these shows in the role of salesman, or perhaps company owner. They often don't wear actual suits at all. I find them to be the most creative, understanding, helpful people there. These people and their toys are why I go.

And now, the Conductors. This won't take long. This time they showed up in what must have been an official uniform: left side of the hair shaved to the skin, right side straight, long, black and greasy—strategically positioned to remove any vestigial potential stereoscopic vision. They walked into a lot of things. Each one sported a torn, painted, black leather scooter jacket with three kilos of junkyard bolted to it. Under that was found some ugly plaid flannel shirt from a secondhand store with the sleeves cut off at the elbows. Under this was featured pink or brown long underwear to the wrists. Very nice.

But wait. All this goes with trashed Bermuda shorts and combat boots. Really. These guys have *ugly* legs.

Features Like These Are Usually Found Only In Larger Mixing Consoles.

Mic/Line switching for optimal level adjustment.

Three-band EQ with sweepable mid frequency center.

Rear-panel channel insert points on separate jacks.

High-gain (84dB Channel input to program output) ensures full output with low level or distant mics. Optional Precision input transformers are available.

Better than 130dBu Equivalent Input Noise.

10-Segment LED meters for quick, accurate visual monitoring of all signals.

Switchable Phantom Power for Condenser Mics

Separate Mono Output level

Headphone Out w/ Level control

Switchable Meter Functions

2 Aux sends per channel greatly increase flexibility when interfacing signal processing units.

Utilizes the same mic preamp chip found in top recording consoles to provide exceptional, low-noise performance.


Transformer Isolated +24dBm 600 ohm Balanced XLR Stereo Program Outputs w/ Left and Right Master Controls.

Our MM-508 Offers Them In Just Three Rack Spaces.

100 Fernwood Avenue, Rochester, NY 14621 • Toll Free: 800-828-6308 • 716-544-5191 • FAX: 716-266-4589

ASHLY

This is no Fairy Tale



This is real life. The frog won't turn into a prince and his voice won't sound like Diana Ross — at Brüel & Kjaer capturing reality is what we're all about.

Today's studios are full of good sounding microphones but, fortunately, we are not one of them. With Brüel & Kjaer you are the artist. We supply you with a blank canvas and you get to add the colors, not us.

The B&K 4000 series offers 6 different condenser mics, featuring true omni or cardioid pickup which can be passively and accurately altered by our exclusive *acoustic pressure equalizer* (APE) adaptor. They're available in both 48 Volt Phantom or 130 Volt powered versions offering unmatched 168dB dynamic range for the most demanding snare drum crack to the subtlest details of nature's acoustical ensembles.

IF YOU'RE SERIOUS ABOUT YOUR REFERENCE RECORDINGS:

4 0 0 0 S E R I E S

YOU CAN'T AFFORD NOT TO!!!

 **Brüel & Kjaer**

Exclusive U.S. Distributor • Brüel & Kjaer/T.G.I. North America Inc. • 300 Gage Avenue, Kitchener, Ontario, Canada N2M 2C8 • Tel (519) 745-1158 Fax (519) 745-2364

USE READER SERVICE CARD FOR MORE INFO

by Ken C. Pohlmann

THE PASC ALGORITHM

Part 2. As we observed last month, the Digital Compact Cassette (DCC) format is poised for a fall launch date. Given the advantage of lower cost, backward compatibility, record label support and second-generation coding method, it may well rise above the ashes of DAT, now cold and forgotten in the consumer marketplace.

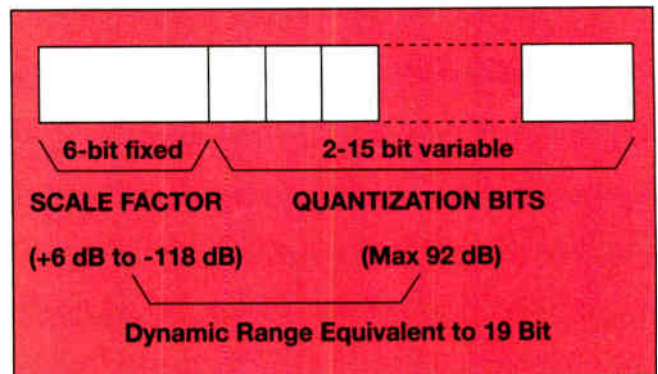
It is the last advantage, second-generation coding, that is perhaps most interesting. Squeezing 90 to 120 minutes of digital audio onto a tape moving at 1-7/8 ips, with fixed heads, requires a coding method that is far more efficient than traditional PCM encoding. The Precision Adaptive Sub-band Coding (PASC) algorithm accomplishes the trick by reducing the data load by 75%, through psychoacoustic models for data reduction and a more efficient floating-point representation.

As we saw last time, using the dynamic model of the minimum threshold of audibility and amplitude masking, the PASC algorithm carefully allocates bits only to those portions of the signal that are audible, and even then it budgets only the bits required to satisfy a particular signal-to-mask ratio. By individually examining the peak signal amplitudes in 32 sub-bands, the algorithm psychoacoustically requantizes the signal. These quantization values form a mantissa, with a possible range of 2 to 15 bits, thus a maximum resolution of 92 dB is available from this part of the coding word. In addition to the effects of signal strength, mantissa values are also affected by the rate of change of the waveform pattern and by available data capacity. In any event, new mantissa values are calculated for every sample period.

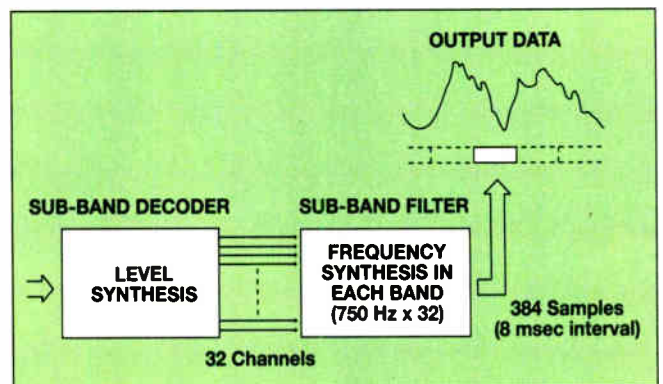
In addition, six exponent bits form a scale factor that is determined by the signal's absolute amplitude. This scale

factor covers the range from -118 dB to +6 dB in 2dB steps. Because the audio signal varies slowly in relation to the sampling frequency, the masking threshold and scale factors are calculated only once for every group of 12 samples, forming a PASC frame (12 samples per sub-band, with 32 sub-

Fig. 1: Bit structure of PASC coding. (courtesy Matsushita)



bands, yields 384 samples). For every sub-band, the absolute peak value of the 12 samples is compared to a table of scale factors, and the closest (next highest) constant is applied; the other sample values are normalized to that



factor, and, during decoding, will be used as multipliers to compute the correct sub-band signal level.

The floating-point representation is

Fig. 2: Outline of PASC decoding. (courtesy Matsushita)



Phil Ramone photos by Michael Bloom

We asked Phil Ramone
to field test our new
AT4033 studio
condenser microphone.

He wouldn't
give it
back!

AT4033
Studio Condenser
Microphone

Phil Ramone knows exactly what he wants from a studio microphone. And when he tested a sample of our new AT4033 cardioid condenser microphone, he knew it was right for him and ideal for the artists he records.

He liked being able to concentrate on getting the right music from the musicians, rather than first spending time experimenting with EQ to get the right sound.

What Phil Ramone heard was the result of new condenser technology inside the AT4033. The diaphragm is only 2 microns thick, with a vapor-deposited gold conductive coating just 50 angstroms thick. This sophisticated, very low-mass diaphragm is aged in a five-step process that insures unchanging performance for years.

The high head-room and wide dynamic range, plus low noise floor, make the AT4033 ideal for the most demanding digital recordings. And the maximum input SPL is an awesome 140 dB, so important when recording high-output instruments and very close-up vocals. In addition, transformerless design contributes to overall sonic transparency. The AT4033 also includes a switchable 10 dB pad and lo-cut filter, plus a built-in pop filter and internal shock mounting.

We're not certain we'll ever get the sample AT4033 back from Phil Ramone, but no matter. We're busy making your AT4033 right now. For more details on this impressive new microphone, ask your A-T sound specialist to schedule a test of the AT4033 today.



audio-technica®

Available in Canada and the U.S.A. from Audio-Technica U.S., Inc.
1221 Commerce Drive, Stow, Ohio 44224
(216) 686-2600 • FAX (216) 686-0719

shown in Fig. 1. The leftmost region contains the fixed length 6-bit exponent, and the rightmost field contains the variable-length, 2- to 15-bit mantissa. Every block of 12 sub-band samples could have different mantissa lengths and values, but would share the same exponent. Allocation information detailing the length of a mantissa is placed in a 4-bit field in each PASC frame. Because the total number of bits representing each sample within a sub-band is constant, this allocation information (like the exponent) needs to be transmitted only once every 12 samples. A "0" allocation value is conveyed when a sub-band is not encoded; in this case neither exponent or mantissa values within that sub-band are transmitted.

Clearly, the 15-bit mantissa yields a maximum signal-to-noise ratio of 92 dB. The 6-bit exponent can convey 64 values; however, a pattern of all 1s is not used, and another value is used as a reference. There are thus 62 values each representing 2dB steps for a total of 124 dB. The reference is used to divide this into two ranges, one from 0 to

-118 dB, and the other from 0 to +6 dB. The 6 dB of headroom is required because a component in a single sub-band may have a peak amplitude 6 dB higher than the broadband composite audio signal. Thus the broadband dynamic range is equivalent to 19 bits of linear coding; Therefore, DCC's adaptive coding is capable of a much wider dynamic range than the fixed linear coding of CD and DAT.

A complete PASC frame contains synchronization information, sample bits, scale factors, bit allocation information and control bits for sampling frequency information, emphasis, etc. The total number of bits in a PASC frame (with two channels, 384 samples, over eight milliseconds, sampled at 48 kHz) is 3,072. This in turn yields the 384Kb/second DCC transmission rate. With the addition of error detection and correction code, and 8/10 modulation, the final bit rate to tape is 768 kilobits per second, with 96 Kb/second to each of the eight main data tracks.

Sampling frequencies of 32 and 44.1 kHz are also supported, and because the number of bands remains fixed at 32, the sub-bandwidth becomes

689.06 Hz with a 44.1kHz sampling rate. Because the output bit rate is fixed at 384 Kb/second, and 384 samples per channel per frame is fixed, there is a reduction in frame rate at sampling frequencies of 32 and 44.1 kHz, and thus an increase in the number of bits per frame. These additional bits per frame are employed by the PASC algorithm to further increase audio quality.

PASC decoding is relatively simple, as shown in Fig. 2. Following demodulation, error correction and de-interleaving, PASC data is reformatted to linear PCM by a sub-band decoder using allocation information and scale factors. A synthesis reconstruction filter recombines the 32 sub-bands into one broadband audio signal. This sub-band filter operates identically (but inversely) to the input filter; the same filter chip used in the encoder could be used in the decoder. As in the encoder, 384 samples per channel represent eight milliseconds of audio signal (at a sampling frequency of 48 kHz). Following this sub-band filtering, the signal is ready for reproduction through D/A converters. Although the output waveform does not look the same as

Write or Call for **FREE CATALOG**

USA & Canada
1-800-331-3191

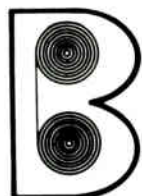
NYC Area: 516-678-4414
FAX: 516-678-8959



Distributors of **3M** Professional
Audio and Video Products including:

- | | |
|---|---|
| <input type="checkbox"/> Digital Mastering Tape | <input type="checkbox"/> All hard-to-get audio & video products |
| <input type="checkbox"/> Logging Tape | <input type="checkbox"/> Custom loaded cassettes |
| <input type="checkbox"/> Leader & Splicing Tape | <input type="checkbox"/> R-DAT & other packaged cassettes |
| <input type="checkbox"/> Reels, Boxes, Flanges | <input type="checkbox"/> Calibration Tape & Splicing Blocks |

Shipped From Stock - Priced Right - Immediate Delivery



Burlington Audio / Video Tapes, Inc.

106 Mott Street • Oceanside, New York 11572

the input waveform, it should, of course, sound the same.

Because psychoacoustic processing, bit allocation and other operations are not used in the decoder, its cost is quite low. More importantly, the decoder is transparent to improvements in encoder technology. In other words, it is expected that the psychoacoustic models used in PASC encoders will improve, and the resulting fidelity will improve as well. However, any future encoded data can be replayed over any PASC decoder, of any vintage, as long as the standardized PASC frame format is employed.

What kind of encoder improvements can be anticipated? Because the PASC-encoding algorithm is a function of digital signal processing, more sophisticated coding is inevitable. For example, bit-allocation algorithms will improve based on the results of critical listening over a wide variety of program materials. Because the number of bits per frame varies according to sample rate, it may be expedient to create different allocation tables for different sampling rates. Perhaps particular types of sounds that are difficult

to encode will merit special handling, with special algorithms dedicated to them. Companies are already working on FFT sidechains that permit better analysis of the spectral content of subbands. For example, knowledge of where signals are placed within bands may be useful in more precisely assigning masking curves to adjacent bands. PASC assumes signals to be at band edges—the most conservative approach. All that lies in the future. For now, DCC is ready for launch, and its audio performance has already exceeded its designer's wildest dreams.

When DCC is introduced in the fall, you can certainly expect a great hue and cry from golden ears types, arguing that they are being cheated by the removal of three-quarters of the data present in a digital recording, much as they were cheated by the frequency range limitations of digital recordings as compared to analog recordings. But in reality, just as their misunderstanding of sampling theory colored their prejudice against digital recording, their misunderstanding of psychoacoustic encoding may color their prejudice against DCC. Actually, PASC encoding is simply more efficient than linear PCM encoding and hence re-

quires fewer bits. How does the sound of DCC compare to the sound of CD? That depends on the specific hardware used, and on the master recording. Even with dither, a CD can only carry 16 bits of data. However, the PASC algorithm in DCC can carry 18 bits. If a master recording of 18 or 20 bits is applied to both CD and DCC, there is a good chance that DCC will sound better.

I've listened to many DCC recordings, and in my opinion the format can sound as good as CD when properly implemented. My advice: Don't act like a donkey when people ask your opinion about DCC. Instead, get some good DCC tapes and compare them to CD, preferably in a blind listening test. I think you'll be very, very surprised at how good this second-generation digital audio-coding method really is.

[Some material in this article was presented by Bob Finger in a lecture in Osaka on October 15, 1991.] ■

Ken Pohlmann has agreed to drop his long-standing lawsuit against the Rocky Mountains in which, among other things, he charged them with being "too tall and snow-covered."

Take me to your rack



No, it's not a UFO.

It's just the best rack accessory ever! It's the Furman

PL-PLUS Power Conditioner and Light Module.

Take it to the top of your rack and let its eight switched outlets provide clean power to your equipment while its twin slide-out, swiveling lamps discreetly illuminate their controls on stages, in studios, and in dark places everywhere. The PL-PLUS protects your delicate electronic equipment from spikes, surges, and RFI with well designed and highly effective clamping and filtering circuitry. Its lamps feature smooth-sliding Delrin bushings, easy to replace 7-watt bulbs, and a dimmer control. And in between, there's a handy LED line voltage meter that reads from 90 to 128 volts. The PL-PLUS is rated at 15 amps and comes with a heavy duty 10 foot line cord.

For even better protection, take one of Furman's other power conditioners to your rack. Like the **AR-117** and **AR-PRO AC Line Voltage Regulators**, which correct high or low voltages

and provide clean power, anywhere in the world. Also check out Furman's new **PS-8 Power Sequencer**, a rack-



mount conditioner that powers your equipment up and down in a 3-step delayed sequence, avoiding large inrush currents that can trip breakers and loud pops that can blow speakers.

FURMAN

Furman Sound, Inc.
30 Rich St.
Greenbrae, CA 94904 USA

Phone: (415) 927-1225
Fax: (415) 927-4548

USE READER SERVICE CARD FOR MORE INFO

DEFINITION.

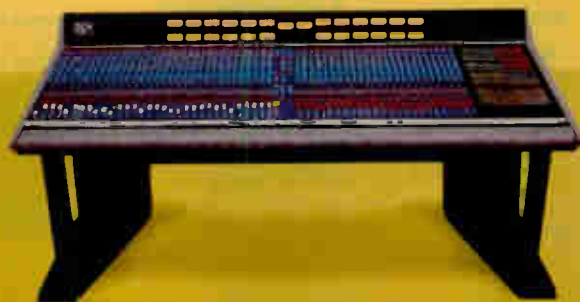
The DMR 12 console defines peak efficiency in today's crowded recording conditions. It contains a sizable number of true inputs (up to 112) to easily accommodate synthesizers, processors, sound sources and tape machines. Its completely versatile MIDI Muting Automation System makes it virtually invisible to the process.

But the most significant aspect of the DMR 12, as with all DDA consoles, is the sheer transparency of its sound. Audio purity that allows every texture to achieve meaningful definition within the mix.

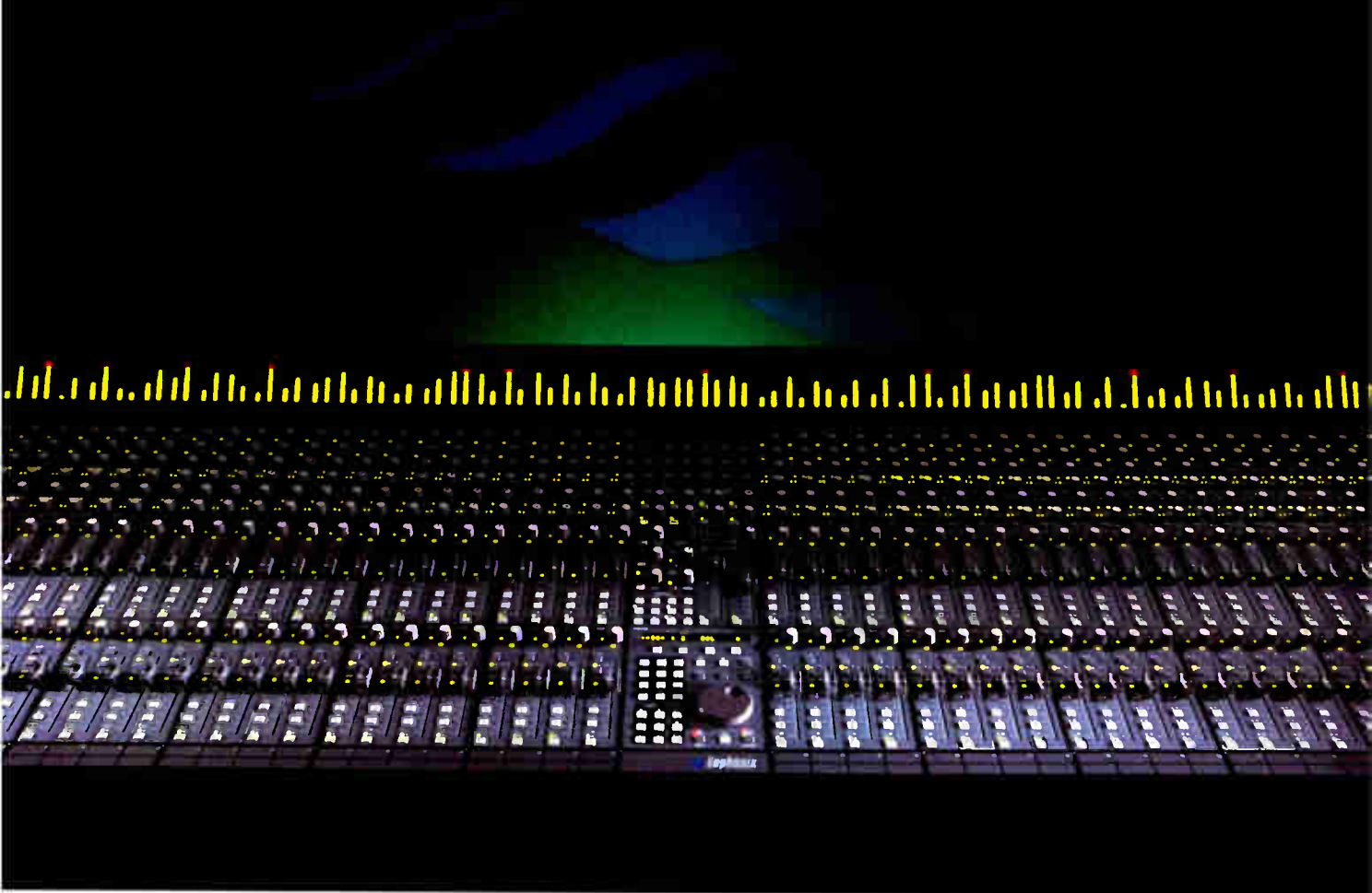


Exclusively distributed by
Klark Teknik Electronics Inc.
Tel: (516) 249-3660 Fax: (516) 420-1863

USE READER SERVICE CARD FOR MORE INFO



The Euphonix CSII



Digitally Controlled Studio System

The Euphonix CSII architecture preserves the traditional user interface and sonic integrity of the finest analog designs. In order to meet today's complicated audio production requirements, we have gone further and added a level of automation and control never before available. And we've done it without increasing hardware complexity, cost or size.

- ▶ **Total Automation™ Control**
Every console setting under precise digital control.
- ▶ **Snapshot Recall™ System**
Reconfigures the entire system within 1/30th second.
- ▶ **Sound Quality**
Advanced, digitally controlled signal path delivers pristine audio quality.
- ▶ **Flexible Architecture**
Eliminates obsolescence while providing a modular upgrade path to large configurations.



Euphonix

Digitally Controlled Studio Systems

Sales & Marketing
10647B Riverside Drive
North Hollywood, California 91602
(818) 766-1666 Fax: (818) 766-3401

Corporate HQ and R&D
220 Portage Avenue
Palo Alto, California 94306
(415) 855-0400 Fax: (415) 855-0410

USE READER SERVICE CARD FOR MORE INFO

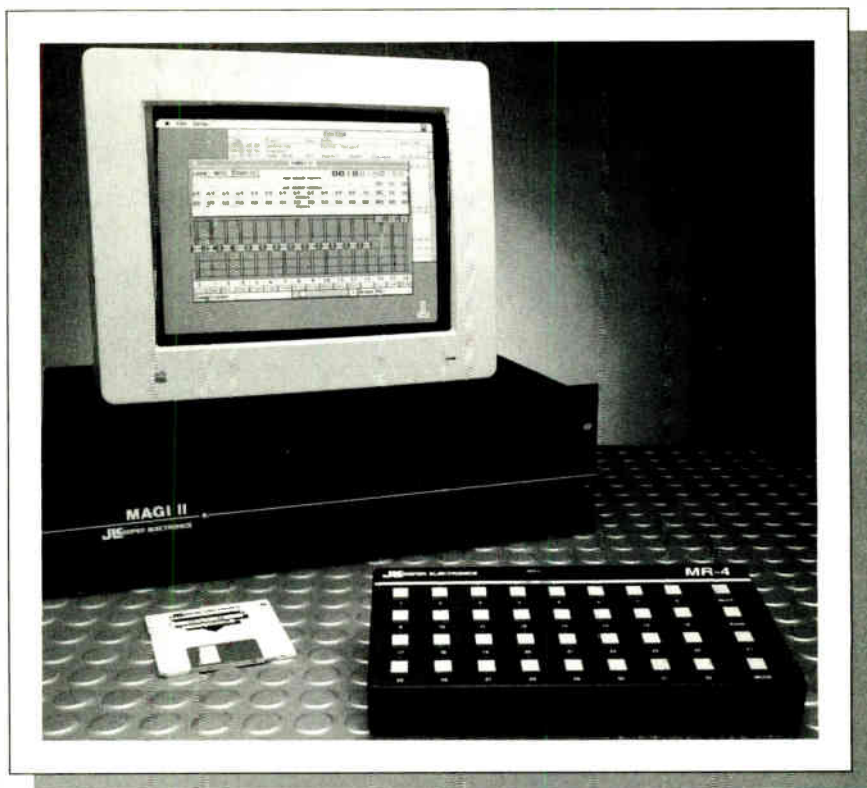
World Radio History

surprise that the Audio Engineering Society has spent a great deal of time in developing and refining a basic multichannel format—originally proposed by a group of hardware manufacturers, notably Sony Corp., Solid State Logic, Mitsubishi and Neve Electronics—that is capable of carrying 56 channels of AES3-compatible data at sampling frequencies between 32 and 48 kHz over a single coaxial cable or fiber-optic link for distances up to 150 feet. The Society's final deliberations were formally published last year as AES10-1991, "AES Recommended Practice for Digital Audio Engineering—Serial Multichannel Audio Digital Interface (MADI)."

MADI's 32-bits-per-channel data format is identical to AES-3, aside from the first four bits (which, in 2-channel connections, contain the frame, sub-frame and Channel Status synchronization preambles). In the MADI format, these four bits carry a single-bit Channel Zero Sync (start of channel); On/Off Bit (channel active); A/B of a 2-channel pair; and Block Sync (the start of a 192-bit Channel Status block). All very ingenious, and destined to greatly simplify life in the blossoming world of multichannel digital facilities.

Unlike conventional 2-channel AES3-format signals, however, MADI is designed to run *asynchronously* and needs to be accompanied from source to destination with a dedicated synchronization clock; the data is not designed to be self-clocking. The MADI transmission rate is fixed at 125 Mbits/sec, irrespective of the number of channels being carried or the sampling frequency. A 4:5 encoding scheme reduces the actual digital audio data transfer rate to 100 Mbits/sec.

MADI's dedicated, independently distributed Master Synchronization Signal (MSS) is formatted according to the familiar AES3-1985/199X specification, and provides an unambiguous source for synchronizing sources and receivers connected via MADI umbilicals. A Synchronization Symbol (in reality, 11000 10001) is also added to the bitstream at least once per frame period (one complete 32-bit channel block) to ensure precise synchronism of data blocks between transmitter and receiver. Sufficient Sync Symbols are also added to the 4:5 encoded data words to completely fill the total ca-

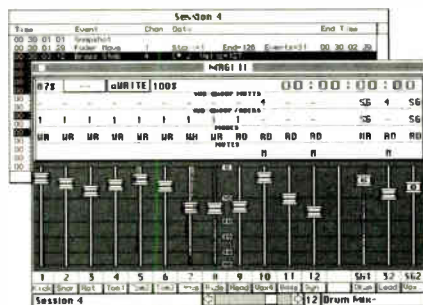


MAGI II Console Automation. Proven Performance.

In the last three years over 250 audio, broadcast, video and film production facilities have chosen the MAGI II console automation system for its quality and sonic superiority. They know that MAGI II makes the creative mixing process faster, easier and more precise.

Sonic Integrity

MAGI is a complete system employing the highest quality dbx™VCAs to provide excellent frequency response, low noise, and wide dynamic range.



Software Powerhouse

The intuitive Macintosh software program offers advanced features like EDL style off-line editing, auto-punch for random access mixing, hit list, and MIDI event editing for foley, outboard EQ and effects automation.

The MAGI II internal version retrofits into consoles with minimum installation time and without costly fader replacement. Its straightforward and sophisticated editing features compare to systems costing thousands more.

The MAGI II external version simply patches into the audio patch bay or insert points to automate any console.

MAGI systems are automating consoles from Allen & Heath, Sony, DDA, Harrison, D&R, Neotek, Tascam, Soundcraft, Amek/TAC, Ramsa, MCI, Trident, and others.

Contact JLCoooper today to find out how MAGI systems can save you time, money, and extend the useful life of your console.

GET THE VIDEO

You can preview the MAGI II with our demonstration videotape. This video offers a complete overview of the system's operation and features. It's just \$13.95 and can be charged to your VISA or MasterCard. To order contact JLCoooper Electronics at:

(213) 306-4131

JUMP START YOUR MUSIC CAREER. GO TO GROVE.

If you're serious about a career in music, do yourself a favor and check out Grove.

Grove is not your average music school. It's the breeding ground for some of the finest musicians around. People dedicated to becoming a force within the industry. But foremost, toward the culmination of a dream — spending their life making music and making money doing it.

Grove offers 10 one-year programs and over 200 additional evening and weekend workshops, all taught by some of the top professional musicians in the business today. The skills you develop and the insight you acquire are guaranteed to open your eyes, ears, and mind. . . assuming you have the heart.

Classes begin 4 times a year. That's 4 opportunities in the next 12 months to get your career in gear. So don't blow it. Go to Grove.

For a free catalog simply call **(818) 904-9400, ext. G1** or send back the coupon below.



capacity of a MADI link.

Interestingly, the total data capacity was selected to provide a compromise between data headroom and real-world functionality. Having concluded that serial links were capable of being run reliably using off-the-shelf components at bandwidths of 100 Mbits/sec, the AES Committee calculated that for a maximum sampling rate of 48 kHz, using an existing AES3-compatible 32-bit format and a $\pm 12.5\%$ varispeed capability, this figure would provide a total usable capacity of 57.8 channels ($1.0E+8 / (48E+3 * 1.125 * 32) = 57.8$). Reserving a small amount of bandwidth for synchronization codes,

The beauty of MADI is that it has been designed specifically to carry up to several dozen channels of digital audio configured to be directly compatible with AES3-199X signals.

the maximum number of channels was defined as 56.

By way of an example, a 48-channel multitrack running at a sampling rate of 44.1 kHz will generate just under 65 megabits of data per second; these useful Sync Symbols are simply slipped into the bitstream to pad out the data throughput to the specified 100 Mbits/sec before channel encoding.

It is up to the transmitter to decide where the additional Sync Symbols are to be placed—or rather, the DSP chips driving the TAXI (Transparent Asynchronous Xmitter/Receiver Interface) and taking care of the data formatting overhead—the only condition being that these sequences can only be inserted after 4:5 encoding at the defined 40-bit boundaries. They may also be repeated between channels during idle periods or after the last channel has been transmitted in each frame capacity.

Because of the non-synchronous nature of MADI links, data buffers need to be inserted at both ends of the con-

Mail Coupon To: **GROVE School Of Music**, 14539 Sylvan Street, Van Nuys, CA 91411

Name

Address

City State Zip

Phone (required to process your request)

I would like to know more about the following programs:

- | | | |
|-------------------------------------|---|--|
| <input type="checkbox"/> Guitar | <input type="checkbox"/> Recording/Engineering | <input type="checkbox"/> General Musicianship |
| <input type="checkbox"/> Bass | <input type="checkbox"/> Songwriting | |
| <input type="checkbox"/> Keyboard | <input type="checkbox"/> Instrumental Major | <input type="checkbox"/> Enclosed is a check for \$15. |
| <input type="checkbox"/> Percussion | <input type="checkbox"/> Acoustic Composing & Arranging | Please send me a copy of your Video Tour. |
| <input type="checkbox"/> Vocal | <input type="checkbox"/> Film/TV Composing | |

Mix 4/92

USE READER SERVICE CARD FOR MORE INFO

nection. This configuration, illustrated on page 29, allows data to be reclocked from the buffer at the appropriate rate, according to the master sync signal and the internal sampling-frequency clocks derived from it at the receiver. At the receiver, data is clocked out of the buffer under the direction of the dedicated synchronization signal accompanying the MADI bitstream.

For situations where no timing reference is accompanying the data-stream—returning to our earlier example of a CD player connected to a DAT recorder—there are other techniques for matching sampling frequencies. With the cost of digital signal processing continuing to fall, it has been suggested that sample-rate converters will soon be affordable for even medium-size facilities. This being the case, non-synchronous digital sources can be buffered into a ring memory and then reclocked at the desired sampling rate. And the amount of data storage necessary to achieve synchronism between sampling clocks that are off by several parts per million is surprisingly small. (Think about it. If the clocks are wildly off, then audible pitch and timing differences are introduced if we slew the bitstream by an excessive amount.)

For example, a buffer of only 5 ms would accommodate 80 minutes of material that is off by ± 1 ppm from a master reference; this value drops to 1.6 minutes if the sampling clocks are off by as much as ± 50 ppm. If the material to be sample frequency-converted runs longer than the buffer length, then the bitstream can be muted during silent passages and the buffer refilled. Alternatively, a gentle crossfade could be inserted at an appropriate position to provide a smooth transition between the current output and material from, let's say, the center of the buffer.

In next month's "Juxtapositions": Practical Solutions—details of hardware that can take care of system synchronization anomalies, and units for analyzing AES/EBU-format signals for Channel Status and other valuable diagnostic information. Also, a discussion of audio-video editing anomalies, particularly at video-based sampling rates of 48 kHz. ■

Given the vagaries of the time-space continuum, Mel Lambert often wonders how we might perceive the world if Einstein had existed before Newton.

Two Masters, Three Musical Instruments



Master engineers Tom Jung of DMP and Bob Ludwig of Masterdisk.

"Analog to digital conversion has always been the weakest link in the CD chain. Wadia has set a new standard of musicality."

— Bob Ludwig

"Simply put, the Wadia A/D does a more accurate job of converting music to digital. It transfers more information to the digital medium than any converter I have heard."

— Tom Jung

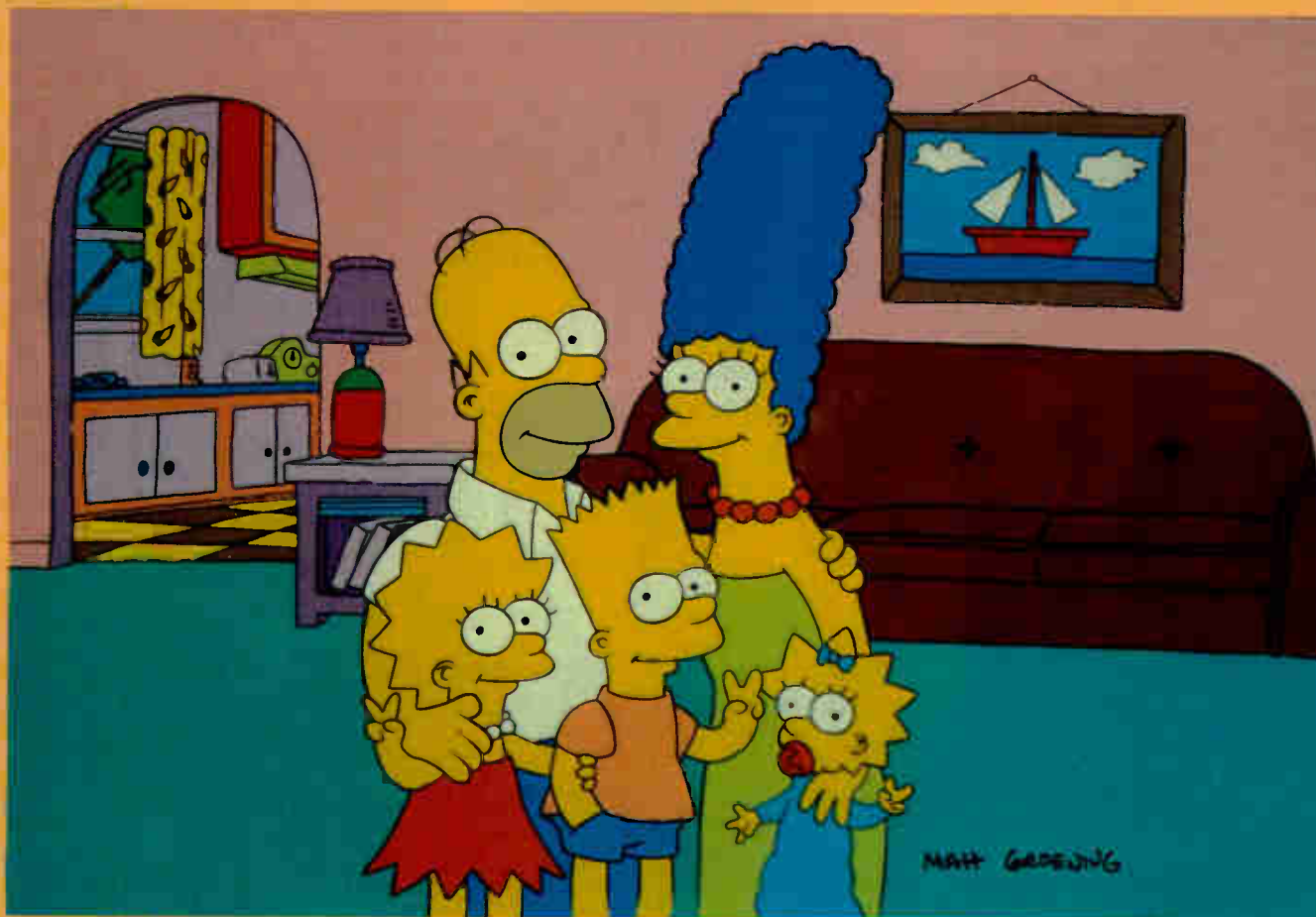
USE READER SERVICE CARD FOR MORE INFO


Wadia DIGITAL
The Leader in Signal Conversion

0asting

Homer Simpson takes his job as the operator of some vague component at a nuclear power facility rather unseriously. Nonetheless, Springfield gets its electricity with few interruptions. If Homer were posting his own show, however, it just wouldn't get done. It takes more than donuts and a beer at Moe's to get through the audio on *The Simpsons*, Fox-TV's animated hit.

Mike Mendel is one of two associate producers (Joe Boucher is the other) for the series' production company, Gracie Films, and he's been with the show throughout its three seasons. Just listening to Mendel listing the audio components of *The Simpsons* is enough to fill an article, but, ironically, before the audio makes its way to an Otari 32-track digital deck, it starts out as the equivalent of an old radio comedy from 60 years ago: character voices done by actors and actresses in a half-moon converging on a bank of microphones (in this case Neumann U87s) at 20th Century Fox in Los Angeles. Parts are read



PHOTOS: COURTESY OF TWENTIETH CENTURY FOX FILM CORP. 1990

The Simpsons



How
NOT
TO HAVE
A COW

in sequence from each week's scripts by talent such as Julie Kavner, who plays Marge Simpson.

All of the dialog is recorded to a single track of an Otari analog 4-track. (Mendel says that the plan is to go to digital next season, probably onto some sort of hard disk workstation. "We need that kind of versatility," he notes. "We need to be able to store the audio dailies and call them up instantly. One of the producers will come in looking for one of Bart's 'Ay, carambas' from another season's show, for instance. So we have to put together some kind of instant-access library.") The 4-track tape with the dialog is then sent over to nearby Laser-Pacific in Burbank, where it's transferred onto a WORM laserdisc and offline-edited from a CMX edit list. "That creates the master audio reel," Mendel says; it is also on 4-track analog tape. "A lot of Hollywood sitcoms are going over to laserdisc for that sort of editing."

Hearing Voices

The voices on *The Simpsons* have as much to do with creating the show's charm as the rough edges of series creator Matt Groening's renderings and the writing staff's sardonic, sarcastic scripts. Kavner's raspy Marge, Dan Castellaneta's sweet-and-lowbrow Homer define the character visuals. Guesting on *The Simpsons* is a Hollywood vogue, and Mendel says that what motivated a number of this season's guest stars, such as Sting, was prompting by their own children. "[Guest shots] energize the recording sessions," Groening told a reporter. "[The guests] realize how much fun we have ad-libbing, and they get into the spirit of it. I always thought that we would have access to big-name stars because it's a very easy job. There's no memorization of lines, no rehearsals, and you don't have to put on makeup or costumes."



.....
by Dan Daley



British studio performance at a revolutionary American price!

MEGAS Studio is the first 24 buss recording console to combine world-class *British sound* with a wealth of smart, practical features for today's recording situations—*priced from \$17,100**

Featuring a highly flexible split console design, the Studio can be specified in 16 or 24 discrete buss formats and is available in 24 to

40 input configurations with or without patchbay.

An ideal choice for today's input-intensive recording, the Studio has an on board MIDI computer which can be interfaced with a sequencer to provide automated MIDI muting. It also comes with an exceptionally smooth, transparent 4-band EQ for optimized sonic performance.

The MEGAS Studio can accommodate a combination of mono or stereo input modules and comes with full metering as a standard feature.

MEGAS Studio. Superior sound and performance at a price that'll revolutionize the way you think about British consoles.

SOUNDTRACS^{PC}

Soundtracs distributed exclusively in the United States by: Samson Technologies Corp., P.O. Box 9068, Hicksville, NY 11802-9068 TEL: (516) 932-3810 FAX: (516) 932-3815

*Suggested retail price for the Model 24/24 Megas Studio console. Other prices will vary somewhat based on specific configuration and features.

© 1991 SAMSON

USE READER SERVICE CARD FOR MORE INFO

World Radio History

MEGAS STUDIO

The Simpsons on Record

John Boylan, who produced *The Simpsons'* successful debut record last year, will reprise his role this year for *The Simpsons' Summer Album*. Recording began in January at various locations, including Record Plant, The Complex, Devonshire and Conway Recorders. The only guest artists definitely signed for an appearance on the disc are the Beach Boys, although others are in negotiation.

While the Simpsons are not your usual three-dimensional re-

ording artists and rely on cathode ray tubes to exist, Boylan says he approaches the record as though it were any other album project. "I don't do anything different except make sure that time code is always available on everything," he says. "And I almost always cut SMPTE anyway." Boylan prints tempo-resolved, SMPTE-to-MIDI converted tracks using Mark of The Unicorn software. "We just do that for convenience, though," Boylan says. "Otherwise, it's simply a record for record's sake."

—Dan Daley

Getting those guest voices for each week's show is a trip unto itself. Michael Jackson, whose voice appeared in the season's opener as that of a corpulent, white mental patient who had delusions about being...well, Michael Jackson, came into the studio himself to do his parts, which Mendel says caused attendance at the sessions to rise dramatically.

Other times, the audio crew goes on

the road. Both Sting and Jackie Mason were recorded in New York, where Mendel has used The Hit Factory and BMG Studios for characterization recordings. When Julie Kavner had to go to Toronto for a film shoot, co-executive producers Mike Reiss and Al Jean went with her and got her parts for the first nine episodes on tape. At press time, Mendel had just finished getting an entire baseball team on audio tape,

including Darryl Strawberry and Mike Scioscia, for an episode planned around the opening of the 1992 baseball season. For Mendel, an ex-New Yorker, this may be the only useful aspect of the Dodgers leaving Brooklyn for Los Angeles.

If there's no studio around, then it's down to DAT, and Mendel says he's had a lot of luck using the Sony portable non-time code deck. (Time code is laid onto the 4-track deck; next season they'll be using a time code DAT deck.) "We used DAT when we went up to [basketball star] Magic Johnson's house in Bel Air to record his phone conversation with Homer," Mendel explains.

It's Only Rock 'n' Roll

Guests who not only spoke but also sang were Aerosmith, who became the house band at Moe's Tavern in one episode. Their dialog was recorded at their home base in Boston. Singer Steven Tyler recut some vocals, and new guitar and harmonica parts were done before remixing "Young Lust" for the show. "Walk This Way" is also on the episode, running during the closing credits. Other musical guests this

B Burlington Audio / Video Tapes, Inc.

Audio/Video is our middle name!

Call or write for
FREE
Catalog!



Best Prices • Shipped from Stock • Immediate Delivery



106 Mott Street • Oceanside, New York 11572

USA & Canada • **1-800-331-3191**

NYC Area • 516-678-4414 FAX • 516-678-8959

Ask about our 22nd Anniversary Trip Contest!

**ONLY
ON
SONY**
RECORDING MEDIA

USE READER SERVICE CARD FOR MORE INFO

season include Steve Allen and Beverly D'Angelo, who becomes country singer Lurleen Lumpkin.

Mendel then stripes mag from the new analog 4-track master produced from the laserdisc, and a "pencil track"—a sort of frame-by-frame storyboard—is created for the audio, so the producers and writers can fine-tune the dialog before it goes to picture. Those mag tracks are what gets sent to the animators, many of whom are working in Korea, where the painstaking and labor-intensive grunt work that still characterizes animation can be done less expensively. The U.S.-based anima-

tion company is Klasky/Csupo. Mouth movements of characters are matched to the prerecorded dialog tracks.

Once the animation comes back home on 1-inch videotape, Mark McJimsey does the offline audio and video editing. A copy is made from the tape sped up by 10%; sections of the sped-up version are inserted at certain action points—for example, if the producers decide Bart should be moving a bit more quickly out of the way of Homer's hand. The audio for those segments is also sped up directly on a 4-track deck and reinserted where necessary.

Dialog is conformed on a Pro Disk system at Skywalker Sound South by Bobby Mackston, and ADR is recorded against picture at both Skywalker and Post Logic in Hollywood. Travis Powers does *The Simpsons* sound effects and Foley on a Synclavier at his personal studio. According to Mendel, Powers' Synclavier is sent directly to a 24-track analog deck through the Otari console at Skywalker, as picture runs. As the various sound effects pass by, if one doesn't quite meet muster, Powers fires off new ones until everyone's satisfied.

Big Band Bart

While this is going on, composer Alf Clausen is working at Evergreen Studios with the 40-piece orchestra used to score most of the *The Simpsons*. "Every week the show gets a full score," Mendel says. "There are usually about 30 cues—starts and stops—for each episode." Occasionally, library music is used, and Clausen also provides other types of material, like rock tracks, for specific episodes. Composer Danny Elfman wrote and recorded the series' title music.

A dialog editor at Skywalker cuts individual tracks for each character, as well as new "walla" tracks (not quite dialog and not quite sound effects), and lays them along with stereo pair tracks of sound effects and music to the 24-track deck.

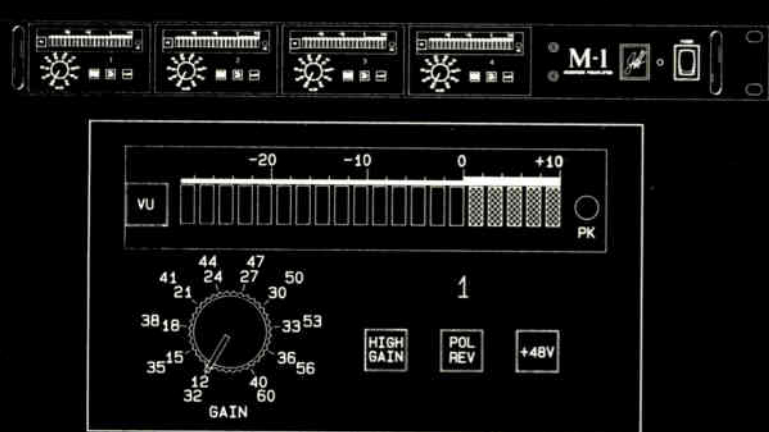
Once all of the elements have been assembled, they are mixed to a 32-track Otari digital recorder and finally laid back to picture at Digital Magic, located upstairs from Skywalker. "The audio comes up on tielines from downstairs, and it's locked to picture upstairs," Mendel explains. *The Simpsons* is mixed in Dolby Surround and employs Dolby SR noise reduction.

The Simpsons is a success for a lot of reasons, many of which have yet to be truly understood. But it's Aerosmith's guest appearance on the show that perhaps best captures the core of the show's appeal: rude, innocent, loud, funny and without shame—all the same things that once made rock 'n' roll fun. "The audio on this show is a lot of fun," Mendel concludes. "It goes through so many different stages and processes—and it's a full-time job—but you don't really feel like it's work." ■

Dan Daley is Mix's East Coast editor. So back off, dude.

M-1

MICROPHONE PREAMPLIFIER



(ACTUAL SIZE)


"No comparison!" "Whoa!" "Even the producer could tell the difference!"
A few typical comments! The M-1 is clearly superior. Here's why:

The JENSEN JT-16-B INPUT TRANSFORMER, IMPROVED!
The world's best mic-input transformer, now even better!

THE 990 DISCRETE OP-AMP. The 990A-24V is far superior to the monolithic op-amps found in other equipment.

DC SERVO and INPUT BIAS CURRENT COMPENSATION
eliminate all coupling capacitors and degradation they cause.

Standard equipment: illuminated push-buttons, shielded toroidal power transformer with 6-position voltage selector switch, silver plated XLRs, ground-lift switches, phantom power, polarity reverse and gain controls. Options include the Jensen JT-11-BM output transformer, VU-1 meter (shown), PK-1 meter, gold plated XLRs.



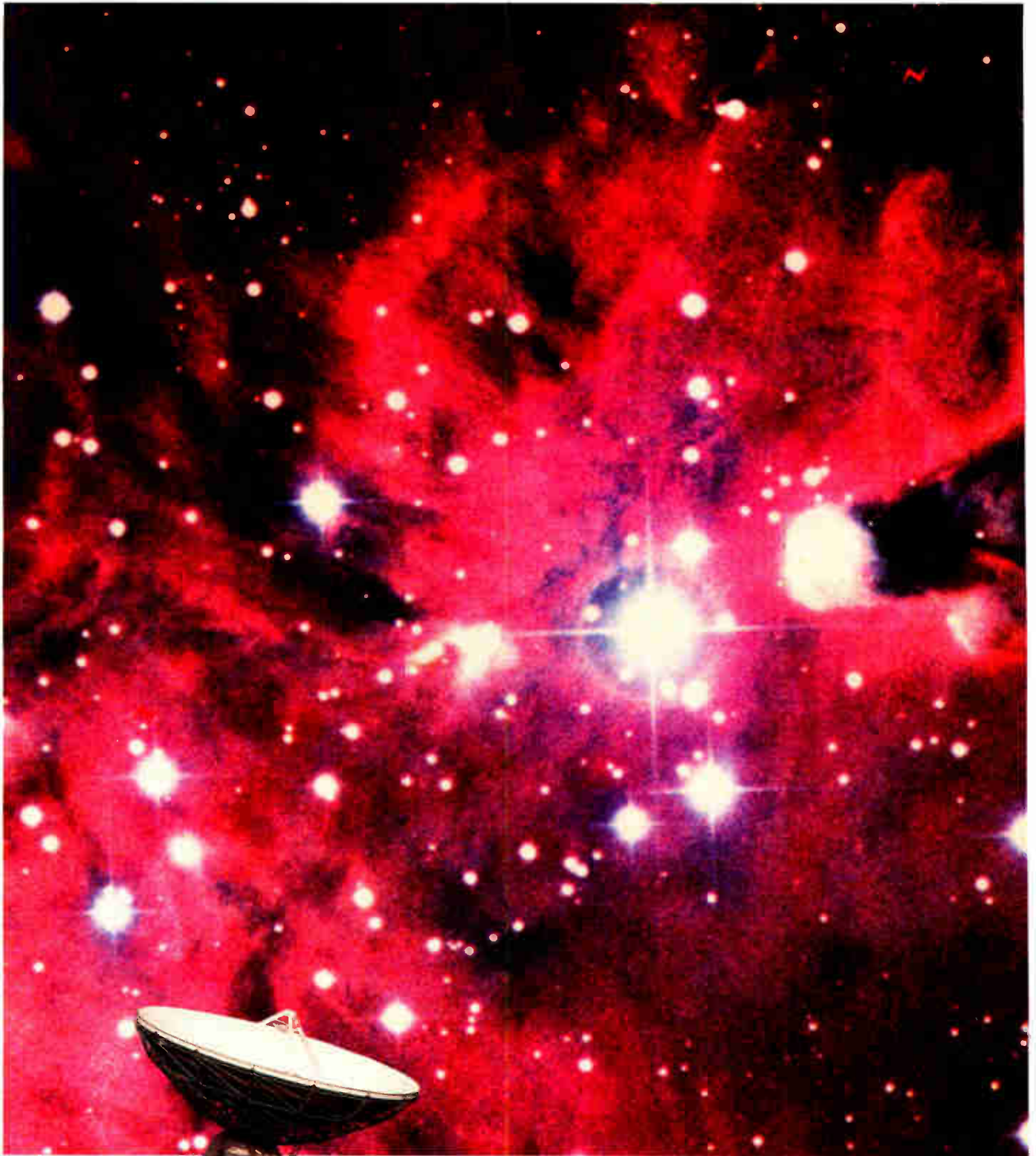
THE JOHN HARDY COMPANY

P.O. Box AA631
Evanston, IL 60204

Phone: (708) 864-8060 Fax: (708) 864-8076

USE READER SERVICE CARD FOR MORE INFO


STAR GAZING?



Wondering about the future of Digital Recording?

After April 6th you won't be.

After April 6th the picture will be clear.

On April 6th  Neve will bring the future of digital recording into sharp focus.

[www.neve.com](#) Prepare to witness the birth of a new star.

V IDEO **for** A UDIO

**Focusing
on
Formats**

*If you think the audio format wars
are a headache, where do you begin
when entering the video world?*

Audio studios gearing up for post-production is hardly news. Many studios are looking for ways to find new business in this weak economy, but audio post work requires more than merely installing a video monitor and synchronizer. Specifically, what video recorder formats must a studio offer in order to compete successfully?

The answers depend on the market. New York, Atlanta and San Francisco have seen a lot of D-2, industrials are still primarily Beta SP, and one-inch still reigns as the broadcast distribution standard. Yet, outfitting an audio room with all formats can be expensive. What, then, makes sense?

Rick Elliker of Servisound says, "I would like to see some stability in the marketplace. I don't want to see D-3 come around next week, because it's impossible to keep up with all these new formats. Once, you could buy a tape machine and run it for ten years. Now, you're lucky if you get five out of a piece of equipment. Usually, it's more like three."

All those interviewed seem to agree with Dwight Cook of Cook Sound and Picture Works: "The key is to pull yourself away from the technology and not just buy a machine because it's new. You have to buy it because it makes sense business-wise. It's the same rationale we use for audio equipment."

ADVANTAGE AUDIO, Burbank
Bill Koepnick, president

Animation shows come in on one-inch, after the telecine, and

we lay down to 3/4-inch. At the same time we print code on the multitrack and then build all the sound effects and Foley on the multitrack. If we are editing dialog and music for the shows, we do that in the Pro Tools system. Then when we mix, we sync up the Pro Tools system live and bring its outputs up to four faders downstairs in the dub stage, and mix everything in a bounce mix to the multitrack.

Our work decks are Sony VO-9800s. If somebody brings in a 3/4-inch, we'll often copy from one VC-9800 to another, while at the same time printing our own VITC stripe into it, inserting our own characters. That way we know the time code is good. VITC seems to be difficult for people. Our whole setup here is dependent on VITC. When we edit sounds, we're using VITC meters to capture time code. We use Cue Sheet and the Macintosh to control sampling devices, and we're using Cue Sheet to fire sounds from these machines. With VITC, you just hit one button and you have your time code number, you hit another button and you have your MIDI note, and you say "Thanks." It's a two-button process.

The stuff that comes to us on one-inch seems to be the most solid. Film people often want to go to 3/4-inch, but we ask them to please provide one-inch. Time code is generally in the right place, at the right level, and the audio is right. We have an Ampex VPR-6, so the audio quality is pretty good.

ARDENT TELEPRODUCTIONS, Memphis
John Wulff, senior video editor

We support one-inch, Beta SP and D-2. We have three Sony DVR-10s. We try to keep every-

BY TOM KENNY



FOCUSED AUDIO



MASTER'S WORKSHOP



ADVANTAGE AUDIO



ZENITH/dB STUDIOS



ARDENT TELEPRODUCTIONS



SOUND TECHNIQUES

Audio post work requires more than merely installing a video monitor and synchronizer...



Skywalker Sound maximizes sonic performance throughout the production process... with Otari!

Skywalker Sound's new state of the art post-production facility in Los Angeles uses four Otari Premiere™ consoles to meet tight deadlines and create the best possible audio for their clients.

The Premiere, Otari's specialized film style/re-recording console with DiskMix 3 Moving Fader automation, gave Skywalker's engineers the unique features they needed to mix complex theatrical

presentations, from *"Teenage Mutant Ninja Turtles II"* to *"The Doors"* and *"JFK"*, in record time. Each Premiere is custom-configured and built especially for film and video mixing with single and multiple mix positions.

Otari is proud to supply these specialized post-production tools to the dedicated and talented professionals of *Skywalker Sound*.

SKYWALKER SOUND

Santa Monica, California • (310) 315-5000

OTARI

Foster City, California • (415) 341-5900

USE READER SERVICE CARD FOR MORE INFO

VIDEO FORMATS, BRIEFLY

	TAPE WIDTH	LINEAR TRACKS	PCM (DIGITAL) TRACKS	AFM TRACKS	DEDICATED TC TRACK?
3/4" U-Matic	3/4"	2	—	—	Yes*
VHS	1/2"	1-2	—	2*	No
S-VHS	1/2"	2	—	2	No
1" C Format (NTSC)	1"	3	2*	—	No
Betacam	1/2"	2	—	—	Yes
Betacam SP	1/2"	2	—	2	Yes
D-1 (component)	19mm	1	4	—	Yes
D-2 (composite)	19mm	1	4	—	Yes
D-3 (composite)	1/2"	1	4	—	Yes
M II	1/2"	2	—	2	Yes
*Certain models only					

thing in the digital domain. We distribute one-inch, and that's really the only reason those machines stay around. A lot of people are taking things on Beta SP now, because the automated cart machines at the stations are Beta machines.

Clients are thrilled with D-2 because you get four nice, CD-quality audio tracks, and you have a read-before-write function, called pre-read, that allows you to layer. You just take the output, bring it up through your switcher, put something on top of it, feed it back into itself, and instead of feedback, you get an extra layer.

D-3 is going to put a lot of people in the production business. But if I were to start from scratch, my acquisition format would be Betacam SP. You will find S-VHS and Hi-8 trying to make inroads into facilities, especially corporate rooms. But I think initially you have to maintain a certain amount of compatibility with the outside world. Plus [with Betacam SP] you'll have better luck if you're planning any audio sweetening, multitrack post sweetening, locking to SMPTE time code, and things like that.

COOK SOUND AND PICTURE WORKS, Houston Dwight Cook, president

Video is suffering, as is audio, with the different formats and the incompatibility. The ultimate audio format does not yet exist, and neither does the ultimate video. In our market right now, one-inch is still the broadcast standard. If D-2 becomes the standard, then I'll buy one. Beta SP is still pretty much standard for industrials—it's more portable, it's got a good look to it, and it's got great sound if you buy the top-of-the-

line machine.

We've not seen much request for D-2, but we'll see as it grows. If you're going to spend \$60,000 to \$80,000 for a video machine, then you need to make sure you're going to use it. It's the same rationale we use for audio equipment. No different. It's probably easier for a start-up facility to start with D-2 than it is to take your existing machines, worry about their use, and buy D-2 in addition.

When D-2 came out there was a client backlash, because people who put it in tried to charge more per hour for this ultimate format, and the clients didn't really see the big difference between it and one-inch. Ninety-five percent of our requests are for one-inch, so we lay it back here, and it goes out for dubs.

I would recommend that people find one or two other owner/operators that they can pull opinions from. If they know XYZ put in a D-2 machine, find out why and if it's paying for itself. Find out what works in other markets. It's a little less threatening than calling the guy in your own town and saying, "What do you think? How do you price this? Is it paying for itself?"

CRAWFORD POST-PRODUCTION, Atlanta

Steve Davis, senior audio engineer
D-2 is overwhelmingly popular. We have over 20 one-inch machines, yet we've found so much demand for D-2 that we now have nearly 20 D-2 machines, both Sony and Ampex. We wouldn't have invested that money without a big client demand for it.

One-inch is still the king as a distribution format because it's the safest thing to do, just like 7.5 ips mono is the

safest for audio tapes. But in post-production, people like D-2 because of the obvious technical advantages and the ability to build stack reels and submaster elements without generation loss. Even our more upscale corporate clients prefer to master to D-2. They'll bring in Beta sources and take their dub away on Beta, but they'll make a D-2 master for the highest NTSC-quality generation for pulling subsequent copies and so forth.

D-1 is becoming important to many clients because communications are becoming so much more international, and component digital video gives you an easy primary format to go to PAL, as well as NTSC and a lot of the computer graphics devices.

EVERGREEN, Burbank Steve Bartkowicz, maintenance engineer Kevin Erickson, studio manager

We are a music-scoring house, one part of the post-production process. Normally for video scoring we work with the 3/4-inch format. The music editor on the show brings in a 3/4-inch workprint with final picture cut. All we use is the time code. Usually the conductor gets his own video monitor, along with one or two in the control room.

Normally the composer gets the same 3/4-inch workprint that we get, so he's working with the same master time code. If they call up and ask where we want the time code, we tell them channel 2 and address track, in case you have a dropout. And a temp track and dialog on channel 1, for playback purposes only. Many times the composer will request dialog in his headphone mix while recording.

A lot of composers [and/or music editors] like to change the music at the recording session, so many bring their computer setup with its streamer system and set up in the control room or out on the stage. We'll feed them direct video out of the VCR. We'll then take a video feed from the music editor and go back into our distribution system. Whatever comes out of the music editor's computer is on all the monitors in the house. That way they can change where streamers are, where cuts are, where certain punches are, whatever. We give them SMPTE time code out of the VCR, so that the computers can lock to it.

Generally, we record to multitrack, though a lot of times it goes direct to 3-track stereo, placed on a 4-track with

time code on channel four, of course, which is regenerated from our synchronizer. Code off a videocassette is usually less than desirable. Regenerating from the SMPTE time code number off the videocassette is mandatory. It's saved us a couple of times.

FOCUSED AUDIO,

San Francisco

Jeff Roth, owner/engineer

When you're working on documentaries and long-format projects, there isn't the pressure to have as many different video formats, because you do a layover at the beginning of the project, and even if it's only a week-long project, you do a layback at the end. Or you may not even do a layback to video. You might make a video transfer to work to, but your final audio can often go directly from center-track time code 1/4-inch to an optical negative.

We currently work to 3/4-inch, and we do all our laybacks out of house. But the nature of our work changed last October when [engineer] Jay Shilliday came over following the Editel [SF] fire. Since more ad agencies are working here, we've brought in D-2

machines on occasion, and we're working out a deal to bring a D-2 in permanently. In San Francisco, D-2 has become the format to work on. When an ad agency leaves here for a client meeting—where they're probably just going to get feedback, and they've already booked time for revisions—they want to walk out with a couple of 3/4-inch and a couple of VHS dubs for viewing. Unless you have the D-2 in-house, you can't just turn around and make those dubs concurrently with the layback. That really goes hand in hand with Jay and the AudioFile, because if people are working on the File, they want speed, and that goes for the turnaround time on the dubs, as well.

D-2 will soon be a permanent fixture here. We'll probably get a one-inch, too. We need to outfit so we have every format anybody might walk in with. That would include Beta SP.

MASTER'S WORKSHOP,

Rexdale, Ontario

Bob Predovich,

VP, general manager

Within Magnetic Enterprises [a division of McLean-Hunter Communica-

tions that includes Master's Workshop], we have D-1, D-2, Beta SP, 3/4-inch, one-inch, S-VHS—whatever you need. In our mixing theaters, we project RGB S-VHS onto a 20-foot screen. From a video hardware standpoint, we're looking at using laserdisc. Magnetic North is the only company in Canada, as far as I know, that has an Optical Disc Corporation recordable laserdisc machine. We support the EditDroid up here, Lucas' picture editing system, and it requires laserdiscs—standard, play-at-home laserdiscs.

Magnetic South has D-2; Magnetic North has D-1 and a number of one-inch machines. A lot of people wonder if D-2 or D-3 [Panasonic's 1/2-inch format] is going to become the standard. I say the future is going to be component video, which is D-1. Whether the standard will be D-1 is hard to say. From a sound standpoint, facilities like ours would have to have relationships with companies like Magnetic North in order to tag onto D-1, because it's prohibitively expensive. It's not the kind of thing you will see sound companies going into, but you will have to support it. Whether you have to support it directly, or through some digital



interface from a DAT tape or whatever, is another story.

We also have two Sony layback machines here, and they're kept busy every day. The majority of soundtracks going out on video are on one-inch. You get into a currency of the industry, and one-inch is certainly an easy currency.

NATIONAL SOUND, NYC

Peter Fish, creative director

A lot of our broadcast clients are going D-2. The prime format now on the downward curve is one-inch. CBS is using D-2 just for stereo. We don't find much call for the four channels in audio mixing yet. The four channels are for elements. The online people are going to stack sound tracks up for a post mix, using channels 3 and 4 much the same way as they would on Beta. It's not a mixing format, though we sometimes print M&E mixes on 1 and 2, or split-mixes on 3 and 4, for foreign language.

All the major formats have their value where price meets quality. There's a certain point where you would be crazy to master on D-2. If your picture quality doesn't demand digital and

your sound quality doesn't demand digital, why pay the price? If I was setting up a room, I'd make video format decisions based on my market and nothing else. Look at the market and ask: "Is it one-inch, Beta or a 3/4-inch market?" Then build your room accordingly. D-1 is a great format. Why it hasn't caught on, I'm not sure.

Because what we do here is so based on the NED PostPro/Synclavier system, at a certain level we don't really care what we lay back to. Our workstations are such that we can clean up any tracks that come in. And the layback format is really just a client preference. What excites me is not necessarily the format, it's the digital workstation approach to audio post, because that's where the real work gets done.

SERVISOUND, NYC

Rick Elliker, VP, director of operations

We support everything from VHS to D-2. We have Beta, 3/4-inch, one-inch, D-2 and VHS (for client dubs). Our D-2 is a Sony DVR-10, a great machine, but three months later they put out the DVR-20 with flying erase heads and a

different drive system. It's kind of hard to keep up with these things when they're \$60 grand a pop. We have a competitor next door who is just now thinking of buying a Beta machine.

A lot of clients like Beta because they can have a mix on the first two tracks, and they can have an English version on another. Or they can split it out and have a mix-plus and a mix-minus on the same tape. And you get a better picture than a BVU or a 3/4-inch. We'll have 15 Betas that are elements, and we just pop the machine online and drop it onto a two-inch machine. Then we can lay back without an operator.

Clients still bring in multiple formats. We still see a lot of one-inch. Not as much D-2 as I expected. I don't think people are really comfortable with D-2 yet. Maybe the cost is still too high in the editing portion of the job. The stuff that we're doing in D-2 is cable programming, the higher-end stuff where they have the budgets to edit in D-2.

SOUND TECHNIQUES, Boston

Chris Anderson, chief engineer

We have a Sony 3100 one-inch for our primary layback and to lay off of. We

GIVE IT ALL YOU'VE GOT. WE DID.

Listen. You don't compromise when it comes to making your music. Neither did we when we built the ultimate 8-track cassette for you to record it with.

The TASCAM 238 Syncaset is one lean, mean, roadable machine. It's got the kind of sound quality and headroom that'll continue to impress you and your band gig after gig.

For about half of what you'd expect to plunk down for a bulkier open-reel deck, you get a

heavy-duty 8-track cassette jammed with pro features like automated punch in/out. Autolocate. Auto rehearse. Tape jog/shuttle control. Switchable dbx noise reduction. And optional full-function remote.

The synchronizable 238 also lets you lock up to your videos later on.

We put a lot into the 238 so, on stage or in the studio, you can give it all you've got.

See the very uncompromising 238 Syncaset for yourself today at your nearest TASCAM dealer.



TASCAM

© 1991 TEAC America, Inc., 7733 Telegraph Road, Montebello, CA 90640, 213/726-0303.
dbx is a registered trademark of AKG Acoustics, Inc.

USE READER SERVICE CARD FOR MORE INFO

World Radio History

have two [SSL] ScreenSound systems, and they both lock to the BVW-70 Betacam SP deck, which is our work deck. The ScreenSounds lock to that so much better, which also makes us compatible with a lot of the corporate stuff that's shot on Beta. It seems to be the format of choice for industrials. It's light, portable, and decent quality.

But houses still master to one-inch. I've talked to some video editors, and I guess with Beta it's a little tougher to anticipate what it's going to do to your audio. Sometimes you hear pops and glitches on your audio tracks as you try

to do an audio edit. Two houses in town support D-2, but we have yet to see any business from there.

Right now we swap time on two decks, between a BVU-800 with address track and the BVW-70. Immediately, we're looking for another 70, because the 3/4-inch isn't nearly as much fun.

TRIAD, Des Moines, Iowa

Richard Trump, president

We have a Sony VO-9850 3/4-inch machine. Most of the people who have one-inch know that we don't have it. A number of clients would love to see us

have it, but whether it would pay off in the life of one-inch is hard to predict at this point. You really want to predict that there is long enough life *in your market* to pay off what you're doing.

Two of the video studios we work with have center-track time code machines, so a lot of the material goes out on 1/4-inch rather than our laying back to 3/4-inch.

Some people bring in Betacam to do transfers on the spot. We have had an outfit bring in a one-inch portable. We got it lashed up, and they had tape that was already striped, so all we had to do was read their time code, lock our equipment to it, and lay it back. It's definitely clumsy, because those machines don't have all the "goes-intos" and "goes-outtas" that you want.

ZENITH/DB STUDIOS, Chicago

Ric Coken, sound supervisor

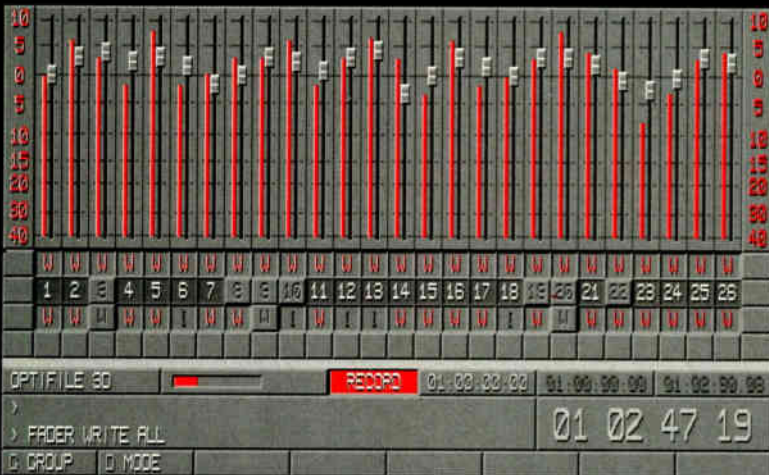
We have one-inch, Beta SP, 3/4-inch and 1/2-inch—obviously, for scratch stuff. The most popular formats in Chicago right now are one-inch and Beta SP. Beta SP is running rampant for corporate industrial and a lot of the film being posted video. Now whether it's because they love it or that's what the video houses have to supply them with, that's not for me to decide. I think there are tons of video houses in Chicago with tons of Beta SP.

There is some demand in Chicago for D-2, but on the sound end, we see very little pressure for it. To me, D-2 seems to be pretty much a commercial application. I'm not sure the people in long-strand have the budget to support that type of technology. D-2 is on the incline, but it's not 50-50.

If an audio facility is going into video, you're going to have to go with one-step-back technology, which at this point is probably one-inch and Beta SP. Then you go with current, which would be D-2. It would be silly to do anything else. You can't go straight into D-2; your overhead is going to swamp you with the amount of business you'd be able to suck in.

Manufacturers have a far bigger stronghold on the industry right now than any of the artists or craftsmen. You know that as soon as they introduce D-3, they'll be talking about D-4. There's nothing wrong with increasing quality; it's just that it's so hot and heavy that the capital is going to bury us. ■

Tom Kenny is a Mix associate editor.



OPTIFILE 3D
POWERFUL AFFORDABLE CONSOLE AUTOMATION
 Retrofits any console

Optifile 3D, with the new intelligent cue list and machine control, gives you total command over mix and machines. Call Sascom Marketing Group for a brochure and discover how easy it is to automate your console utilizing existing faders.

NAM BOOTH #17582 **Tel: (416) 420-3946** **Fax: (416) 420-0718**

SASCOM MARKETING GROUP

CHICAGO	S.G.Audio	(312) 266-1901	NORTH EAST US	Steven Strassberg Assoc.	(516) 365-7562
LOS ANGELES	Audio Intervisual Design	(213) 469-4773	PORTLAND	Audio Systems	(503) 721-0824
MONTREAL	Sascom Marketing Group	(514) 433-1677	SAN FRANCISCO	Leo's Pro Audio	(510) 652-1553
NASHVILLE	Studio Supply Co.	(615) 391-0050	SEATTLE	Audio Systems	(206) 632-7810
NEW YORK	Sam Ash Professional	(212) 719-2640	TORONTO	Sascom Marketing Group	(416) 420-3946

USE READER SERVICE CARD FOR MORE INFO

SATURN 624

THE OLYMPIC CHOICE



At the Barcelona Olympics this summer the multi national T.V. commentaries will be recorded using no fewer than 12 Saturn 624, 2" 24 track tape recorders - the only machines which matched the performance and cost criteria of the European Broadcasting Union.

The Saturn 624 is now available in the United States from our direct marketing agents Promusica Sales. Call them toll free on 800 553 2819 to find out how the machine that's going to do the job at the Olympics, could do the job for you.

United States Direct Marketing Agents: Promusica Sales, 800 Park Avenue, Suit 109, Keene, NH03431. Tel: 603-352-4E31 Fax: 603-352-8757

Austria	Audio Systems	01 910 4545	Germany	g.t.c.	41 02 62062	Korea	Sion Corporation	(02) 7167090
Belgium	Mill's Music Centre	3 828 92 30		Mega Audio	67 21 2636	Netherlands	J.T.M. Productions	035 211920
Canada	Soundcraft Canada	514 685 1610	Hong Kong	Audio Consultants	3513628	Norway	Lydrommet	(02) 370218
Egypt	Alpha Audio	(202) 245 6199	Italy	Audio Equipment	(039) 2000312	Spain	Lexon	203 48 04
France	Uduco	(1) 43 63 97 45	India	Prosound	022 6269147	UK	Larking Audio	0462 422466

USE READER SERVICE CARD FOR MORE INFO



by Iain Blair

POSTING “INVASION OF THE BUNNY SNATCHERS”

BUGS BUNNY VISITS NEW YORK'S SYNC SOUND

When Warner Cartoons director/producer/writer Greg Ford needed to post a brand-new Bugs Bunny cartoon entitled *Invasion of the Bunny Snatchers*, he headed straight for New York's Sync Sound and the services of sound editor and mixer Pam Bartella.

“I first met Greg on the Carl Stalling album project,” Bartella explains. “It was a compilation album of many Carl Stalling [cartoon] scores from the 1930s through the '60s. Greg was working




Top: Bugs Bunny protests a premature attempt to end his new short cartoon “Invasion of the Bunny Snatchers.” Left: Sound editor/mixer Pam Bartella.

Bottom: Bugs Bunny is terrorized by a carrot from outer space.



with Hal Wilner, and Hal was already very familiar with us at Sync Sound from various other projects over the years.” The Stalling project involved extensive editing using Sync Sound’s AudioFile workstations. “And once Greg got a taste of the AudioFile system and its random access capability, he realized that it’d be the ideal setup for dealing with the soundtracks for all his film projects, as opposed to doing them on mag.”



See what's new
on the horizon

NAB Booth # 12463

Professional ▪ 8 - Track ▪ Digital Disk Recording

Price
WAVEFRAME SMASHES ~~SOUND~~ BARRIER
COMPLETE SYSTEMS FROM \$15,000

 **WaveFrame**

4730 Woodman Avenue, #405
Sherman Oaks, CA 91423

Call (800) 772-5482

BOULDER ▪ COPENHAGEN ▪ LOS ANGELES ▪ NEW YORK

World Radio History

Power Trio



Vision

Opcode's Vision and Studio Vision® are the premier sequencers for the Macintosh computer, and are used by professionals on today's top albums, film scores, and TV commercials.

Version 1.4 features *revolutionary* real time editing of MIDI and digital audio, on-screen control of audio and video tape transport controls, input quantize, SMPTE locked markers, drum machine-style loop record/editing, auto locate, fast forward and rewind/shuttle, and more.



MIDI for the '90s: powered by the same kind of microprocessor as your Mac, the Studio 5 has more MIDI interface channels (240), more merging, more RAM patches (128), more processing, more live performance features, and more SMPTE synchronization configurations than any other interface available. And visionary software, OMS (Opcode MIDI System), ties it all together: create your custom OMS studio setup so Vision and Galaxy know what your MIDI connections are, and display your devices by name. You can forget about keeping track of all those cables—OMS does it for you. Version 1.2 with networking of multiple Studio 5 interfaces is the most *integrated* system at any price.

"The Studio 5 is a true monster... its immense processing power and ultra-hip Macintosh user interface sets a new standard of excellence."

Keyboard Magazine

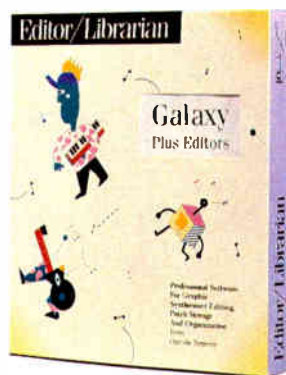
Studio 5 Award Nominations:

"Hardware Innovation of the Year"

Keyboard Magazine

"Best Music and Sound Product"

MacUser Magazine



Studios everywhere use and depend on the standard of Opcode patch librarian and editing software. For the first time anywhere, Galaxy Plus Editors offers an integrated package of universal librarian with compatibility for over 140 synths, effects, mixers, modules and *comprehensive* editors for over 50 of them—and we're always adding new ones. Galaxy—The Universal Librarian is also available. Version 1.2 adds a Find command for databasing and searching sounds, plus the Yamaha SY77/TG77 editor.

Trademarks: Macintosh, Apple Computer, Inc.; Galaxy, Galaxy Plus Editors, Studio 5 and Studio Vision, Opcode Systems, Inc.

O P C O D E
S Y S T E M S I N C

Opcode Systems, Inc. 3641 Haven, Suite A Menlo Park, CA 94025-1010 (415) 369-8131 FAX (415) 369-1747

USE READER SERVICE CARD FOR MORE INFO
World Radio History

Since that initial project two years ago, Ford (whose credits include the award-winning Daffy Duck shorts *The Duxorcist* and *Night of the Living Duck*) and Bartella have worked on several other projects, including a 30-minute, CBS prime-time Bugs Bunny special entitled *Lunar Times*. Most recently they collaborated on *Invasion of the Bunny Snatchers*, which Bartella characterizes as their most complex project to date.

An 11-minute short, *Invasion* is a new Bugs Bunny cartoon, which was recently featured in the CBS prime-time special *Bugs Bunny's Creature Features*, satirizing the well-known classic sci-fi film, *Invasion of the Body Snatchers*. "In this case, Elmer Fudd's, Yosemite Sam's and Daffy Duck's bodies are taken over by pale stereotypes that emerge from strange carrots arriving from outer space," Ford explains. "Fortunately, Bugs Bunny realizes all's not well, and he eventually returns all the characters to their original forms."

"From our perspective, the main challenge was an incredibly tight deadline," Bartella reports. "Originally it had been planned as a TV special for Halloween release, and Warner's had people working on the project on both coasts. Ideally we'd do the soundtrack after all animation had been completed, but because of the tight schedule we had to start work on post using pencil tests or line tests, and in some cases no picture at all."

In the latter cases, Bartella worked off handwritten sheets describing each motion of animation along with the dialog lines. "That helps you figure what sort of action is happening when certain words are spoken," she explains. "But obviously this made for a difficult and challenging project."

"It was particularly difficult because of the sheer lack of time all around," Ford agrees. "We had a mere ten weeks to do all the animation, which was brutal, particularly when you're doing full animation, but it worked out very well, especially in terms of posting the soundtrack. In fact, we ended up synching without picture, which sounds impossible, but in animation all of the necessary information is done on exposure sheets, which means that, for instance, you can see that 26 feet three frames into the scene someone gets hit over the head with a mallet. So it is

possible to score like that, although I'd never done it that way before—it's an interesting act of faith." To his own surprise, Ford reports that everything synched perfectly.

It was Ford who first came up with the idea of cloning the original cartoon scores to create whole new ones. "We'd just never been able to quite duplicate what Carl Stalling had done with his orchestra," he explains, "so it then occurred to me, 'Why not actually try and sample the original music in post and create a whole new soundtrack?' That's when I first approached Pam about the possibility."

"What's amazing is how it's now possible to use the original musical scores instead of having to commission a new composer to score in the same style," Bartella continues. "Stalling would score all the cartoons to match the visuals, and Greg is so intimately familiar with all the old scores that we can actually use the originals to create entirely new scores—he knows just where to go for a sound effect or a musical phrase."

Bartella says the catch was that the original scores had to be used in very small pieces. But combining Ford's knowledge with the AudioFile system allowed the team to grab any piece of music randomly and then sample it to create whole new scores cloned from the originals.

"In fact, I originally resisted the idea of using the AudioFile," Ford admits. "I did some commercials at Sync Sound between finishing *Lunar Times* and starting this, and I resisted because I just felt unprepared. After all, you're essentially taking old cues and re-composing, and I'd been using a sort of improvisational method that seemed to work well, but which also seemed to go against the methods of the AudioFile."

Ford has since found that it's possible to overshoot cues by an enormous amount using the AudioFile. "You can spend a whole day storing cues, half of which you never end up using. But then the system is so fast that it doesn't matter, and the advantage is obvious—with that speed, you don't lose the musical thread, and you don't have to search for the music cues. In fact, the setup works brilliantly with music."

"In roughly 90 seconds of animation we may have between 75 and 100 music edits, hopefully sounding like one smooth, continuous score," Bar-

tella adds. "The sheer volume of music edits is the most intense part of the whole project." She reports a total of over 400 edits in the final 11-minute soundtrack.

Given such statistics, it's no surprise to learn from Bartella that the job would have been "virtually impossible to do" without the AudioFile. "For a start, you can store up to four hours of information," she explains, "so if Greg had a certain idea, we could load all the scores he might need, and we could randomly access anywhere we wanted and try something. We also could line up seven other pieces of music at the same spot, and A-B them all instantly until we found exactly what we were looking for."

The audio quality and sources of the originals presented other challenges for Bartella and Ford. "Obviously, all the original scores had been recorded in different years, on different formats, so the levels were all over the place," she notes. "Not only did we have to edit them all together so that they made sense musically and sounded seamless, but we also had to adjust levels from one cue to the next, and do crossfading at the tops and ends of edits to make them flow smoother."

The team also had to process the cues and clean them up so that they all matched, and they were able to do all this inside the AudioFile session. "That way, we knew immediately whether this was going to work or not," Bartella comments. "Otherwise, we'd have had to just cut it all together roughly and gone into the mix room hoping for the best."

In addition, the team completed sound effects editing on the project. "It was a combination of accessing the old scores and pulling out the effects, and sometimes creating new effects from our library," Bartella reports. Either way, the AudioFile was again indispensable.

Voices for the cartoon characters were also a major consideration. "Back in the old days, Mel Blanc was the voice of almost all of the characters in the Warner Bros. cartoons," Bartella explains. "Now that he's gone, another challenge is trying to match the audio quality of new voices to the originals. That involves a fair amount of limiting, EQ'ing and even pitch adjustment in some cases."

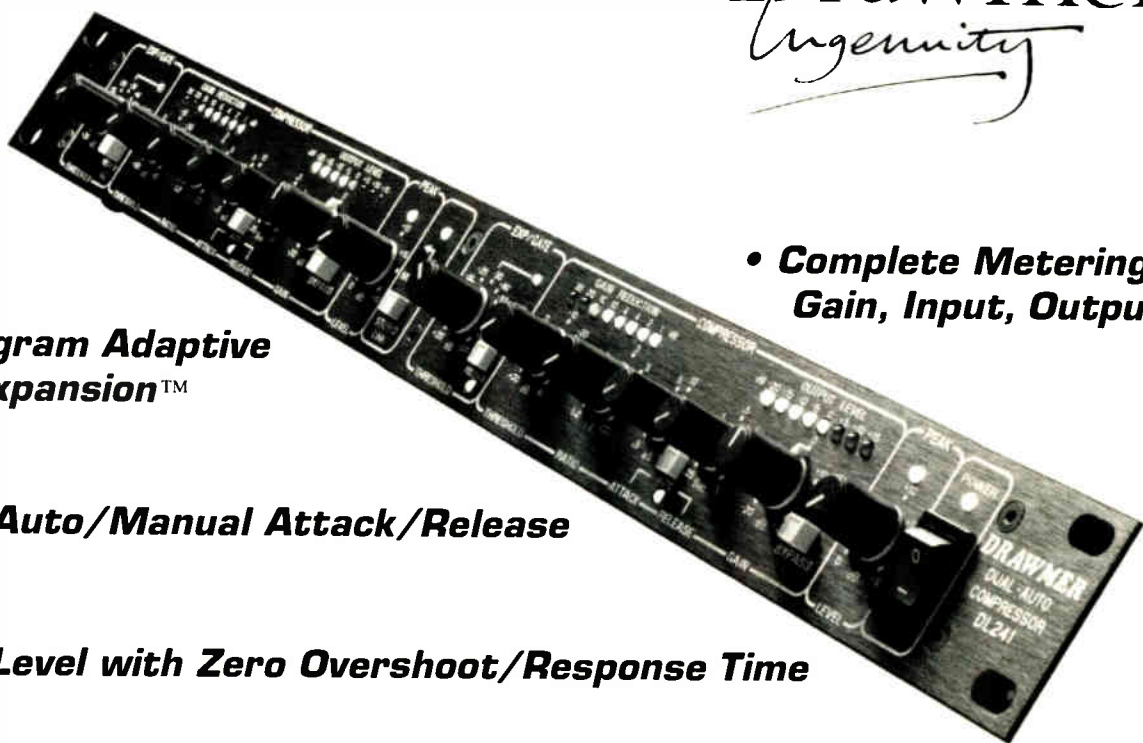
The AudioFile session for *Invasion of the Bunny Snatchers* lasted seven days. "The majority of that week was

THE NEXT GENERATION OF COMPRESSORS.

THE AFFORDABLE DL 241 "AUTO-COMP"

A new dual channel gated compressor/limiter from . . .

Drawmer
Ingenuity



- **Program Adaptive Expansion™**

- **Auto/Manual Attack/Release**

- **Peak-Level with Zero Overshoot/Response Time**

- **Complete Metering:
Gain, Input, Output**

**ISN'T IT TIME THAT YOU DISCOVERED
WHAT DRAWMER QUALITY REALLY MEANS?**

DISTRIBUTED IN THE USA
EXCLUSIVELY BY
QMI
15 STRATHMORE ROAD
NATICK, MA 01760
TEL 508-650-9444 FAX 508-650-9476

Drawmer Distribution, Charlotte St. Business Centre, Charlotte St., Wakefield, W. Yorks., WF1 1UH, England. Tel: 0924 378669 Fax: 0924 290460

USE READER SERVICE CARD FOR MORE INFO

World Radio History

by Paul Potyen

Atari's new
STBOOK

NAMM NOTES

MACHINE CONTROL FROM YOUR PC

One of the more significant developments to come out of the January NAMM show in Anaheim was the emergence of products that allow computer control of recorder transports and other devices. The recent acceptance of MIDI Machine Control (MMC), an extension of the MIDI specification, highlights the increased interest in this matter. A joint effort by the MIDI Manufacturers Association and the Japanese MIDI Standards Committee, MMC was developed to allow different manufacturers of audio and video tape decks, MIDI sequencers and hard disk audio systems to standardize control of external devices from computers.

Fostex Corporation (Norwalk, Calif.), which has been offering tape machines with MIDI control for some time, brought out its first product to incorporate the MMC protocol, the MTC-1B. The MIDI/SMPTE converter was shipping in January. Fostex also announced plans to incorporate MMC

in its 8330 card, which is used to provide MIDI control of its G-16 and G-24S multitracks. Present owners of R8/MTC-1 recorder packages, as well as G-16 and G-24S owners, can upgrade their systems directly from Fostex on a no-charge basis.

Tascam (Montebello, Calif.) also pledged its support for MMC by announcing its MMC-100 interface unit, thus allowing remote MIDI control of its models 238, 644, 688, TSR-8, MSR-16 and SMR-24 series transports. On the software side, Opcode Systems (Menlo Park, Calif.) plans incorporation of MMC in its next version of Vision and Studio Vision. Also announced by Mark of the Unicorn (Cambridge, Mass.) were its plans to include MMC in the newest version of Performer, as well as in the newly released Digital Performer (see below).

JL Cooper (Los Angeles, Calif.), well-known for its control devices such as the CS-1 Control Station, introduced two MMC-compatible products at the

THE BYTE BEAT

show. The Media Control Station is a universal controller for use with multimedia software, disk-based recording systems, desktop video and music sequencers, and it incorporates function keys and a jog/shuttle wheel. The other

dozens of supported video and audio decks. The OMS-compatible unit reads and writes VITC, stripes synchronous SMPTE locked to black burst or video signal, and provides software control for use with any sequencer. Also on display was the Studio AVx Expander, which—together with the Studio AV—

Okta International (Quebec), which showed its powerful Multitude 2.0 sequencer/notation program for the Atari ST, STE and TT030 platforms. Multitude supports remote control of the Fostex line as well.

Atari Takes on the Music Market

Last year Atari Corporation appeared to be laying the groundwork for a renewed commitment to the music community (See "The Byte Beat," August, '91), and the computer maker's presence at this NAMM show bore evidence of that commitment on several fronts. James Grunke, corporate director of International Music Markets, announced the official inception of an autonomous business division named Atari Music, dedicated to better serving the needs of customers and software developers. Programs are being implemented to address the specific service needs of MIDI musicians and music dealers, including next-day express service and optional same-day turnarounds for on-site service of machines. General Electric Service Network has been contracted to handle warranty service.



Tascam's MMC-100 interface allows MIDI-based remote control of several of its audio transports.

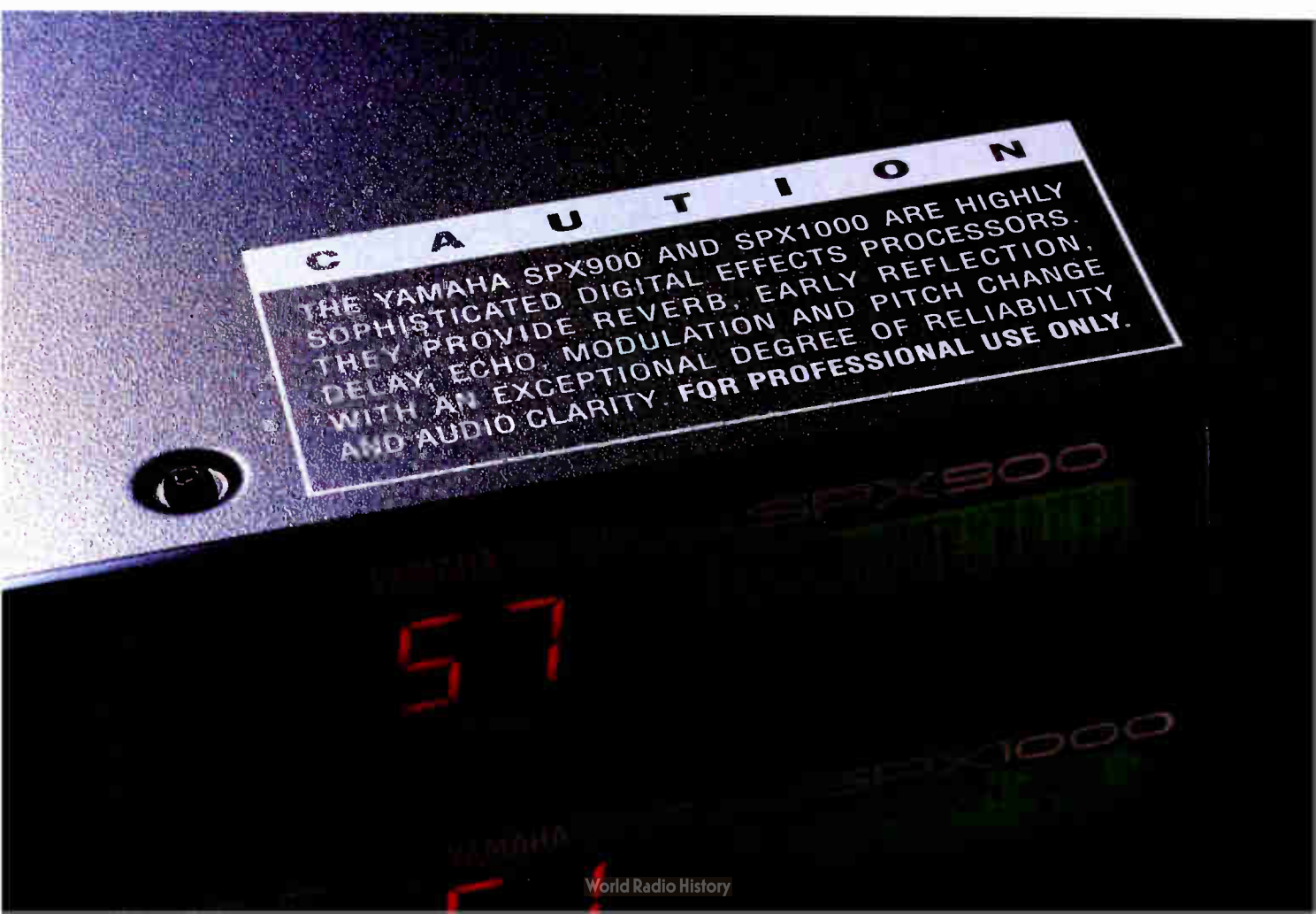
product is the dataSYNC converter for use with the long-awaited Alesis adat 8-track digital audio recorder. MMC's acceptance by such major players as these makes it a safe bet as an industry standard in the near future.

Opcode Systems rolled out its Studio AV video-transport controller for music scoring in post-production. Scheduled for second-quarter release, the single-rackspace device connects to the Macintosh via MIDI to provide master transport control for one of

provides master/slave chase-lock control of additional decks.

Atari (Sunnyvale, Calif.), whose presence at the show was itself another significant item (see below), has long supported control of Fostex recorders via proprietary third-party sequencer protocols. A joint announcement from Atari, Fostex, C-LAB, Steinberg Jones and Dr. T's confirmed a continuing commitment to that goal.

New at this year's NAMM show was Canadian music software developer



The company also premiered its STBOOK, described as the first notebook computer to address the needs of the music market. The 68000-based, 4-pound machine sports a standard 10MB internal hard drive, MIDI ports and an RS232 port and will retail for \$1,999. According to Atari, the ST-BOOK is an excellent interface with direct-to-hard disk recording systems such as Hybrid Arts Digital Master.

Other software manufacturers in the Atari booth were Hybrid Arts, C-LAB (whose products are now being distributed by Ensoniq), Steinberg Jones, Dr. T's and Plasmec Systems, all of whom were demonstrating their newest products and upgrades.

Digital Audio Update

Digidesign (Menlo Park, Calif.) announced Sound Tools II, the newest generation of its family of digital audio recording and editing systems for the Mac II. The new package supports 4-channel recording and playback with digital audio sequencers. Suggested retail price is \$3,495, which includes new software, a new DSP card, and an Audio Interface that comes with four balanced analog ins and outs as well as

digital I/O in both AES/EBU and S/PDIF formats. Also on display was Version 1.1 of the Pro Tools Multitrack Digital Recording & Editing system, complete with a host of new features. Both packages were scheduled to be available by press time.

Mark of the Unicorn announced the release of its long-awaited Digital Performer, which integrates MIDI sequencing with digital audio recording and playback. And in a surprise move, the company presented its own NuBus card for 2-track, disk-based recording on the Macintosh. The Digital WaveBoard is designed to be used with Digital Performer (which also supports Digidesign's DSP cards), although MOTU will make the technical information available to other software developers interested in adapting their programs to its card. Priced at \$1,495, the Digital WaveBoard features on-board AES/EBU and S/PDIF digital ins/outs, allowing direct digital connection with DAT recorders.

Steinberg Jones (Northridge, Calif.) announced the release of Cubase Audio for the Mac, which combines its Cubase MIDI sequencer with digital audio using Digidesign's DSP cards.

U.S. suggested retail price is \$795.

Hybrid Arts (Culver City, Calif.) plans to ship several new products in the first quarter of '92. Digital Master EX is an expanded version of the Digital Master shown at last fall's AES show. The basic configuration consists of dedicated hardware and software that use the Atari ST and ST^e Series of computers to record and edit four channels (and up to 16 virtual tracks) of digital audio. Users also have the option of expanding to 8- or 12-channel systems.

The Sample Playback Module is a 16-bit, 24-voice (at 44.1kHz resolution), 12-output sample player that can run in conjunction with Digital Master EX or as a stand-alone unit. Also announced were the ST-Mac CD-ROM, a software program that allows the Atari ST to access all Macintosh sound libraries on CD-ROM, and the SCSI Module, a box that plugs into the Atari DMA port and enables the machine to use standard SCSI hard drives.

Plasmec Systems (Surrey, UK) was showing an FCC-approved U.S. version of its ADAS hard disk recording system. Although originally designed to run on the Atari platform, a card

© 1992 Yamaha Corporation of America, Professional Audio Products, P.O. Box 4005, Brea, California 92622-0005, (714) 322-9011.

CALL 1-800-937-7171, EXT. 300 FOR THE DEALER NEAREST YOU.

USE READER SERVICE CARD FOR MORE INFO

The Most Widely Used Studio Microphones.



Take a look around the next time you're in the studio. Ask the most demanding musicians and recording engineers what microphone they use to produce the brightest and clearest sound. You'll find that most of them prefer AKG 414's for recording their music's

incredible dynamic range, subtle nuance and emotion.

It's no wonder that the 1990 and 1991 *Billboard* surveys found that AKG microphones are the "#1 Most Widely Used Studio Microphones."

For years the 414 series and its AKG signature sound have been a part of recording the best music in the business. That's why the 414 is a studio classic.



AKG Acoustics, Inc.
1525 Alvarado Street
San Leandro, California 94577 USA
Tel: (1) 510/351-3500
Fax: (1) 510/351-0500

© 1991 AKG Acoustics, Inc. AKG is a registered trademark of Akustische U. Kino-Geräte Ges. m. b. H. Austria

USE READER SERVICE CARD FOR MORE INFO

Classic.



The 414 is available in two models, the C414 B-ULS and the C414 B-TL.

World Radio History



version for IBM compatibles was also being shown, and the company claimed to have a version that worked with a Mac Classic. (Unfortunately, I wasn't able to catch a Mac demo.) Tentatively priced at \$1,495, the systems were planned to be distributed in the U.S. through Digital I/O (Marina Del Rey, Calif.).

And finally, at least one hard drive company demonstrated its commitment to the audio and music community. DynaTek Automation Systems (Toronto) displayed a wide variety of

SCSI devices, ranging from conventional, rack-mount, removable, CD-ROM and recordable optical drives to DAT-based backup systems for all key computer platforms.

Among other developments at NAMM were the emergence of Notation programs from Opcode (as yet unnamed, for the Mac) and Mark of the Unicorn (Mosaic for the Mac). Steinberg showed its Cubase 3.0 for the Atari, which now includes sophisticated tools for laying out and printing scores. And Passport Designs (Half Moon Bay, Calif.) upgraded its Macintosh Encore notation software to Ver-

sion 2.5 and has ported it over to the Windows environment.

And last but not least, here's our first annual Byte Beat NAMM fashion report: The main trends observed by your humble correspondent were toward black leather, sparkly silver things and seemingly unkempt-yet-high-maintenance hair styles among many attendees. ■

Paul Potyén is an associate editor at Mix, and part-time amateur fashion reporter. Watch for his pre-AES convention-center snack-bar haute cuisine report this October.

Chip Shots

All Aboard? Multimedia Comes Alive at NAMM and MacWorld Expo

Multimedia (or as Apple prefers to call it, "integrated media") reared its callow snout in several booths at the NAMM show. IBM had a large space with kiosks for its music, graphics and video-software developers. Voyetra Technologies showed a number of programs that were oriented to the Microsoft MPC platform, including its Multimedia Player—an audio and MIDI playback engine, and Sound Central—audio control software for

MPCs and PC sound cards. And both Steinberg and Passport were showing Windows versions of their flagship MIDI sequencers, designed to take advantage of Microsoft's Multi Media Extensions (MME) standard.

Both Roland (Los Angeles, Calif.) and Yamaha (Buena Park, Calif.) came out with

new tone generators conforming to the General MIDI standard. Roland's CM-300 and CM-500 are compact sound modules specifically designed for use with personal computers in multimedia presentation, education and entertainment applications. The CM-500 adds to the functionality of the CM-300 with LA synthesis sounds. The CM-300 is priced at \$695; the CM-500 is \$1,295. Yamaha's TG100 features 16-part, 28-note polyphony with 192 sounds and eight drum kits, and is tentatively priced at \$450.

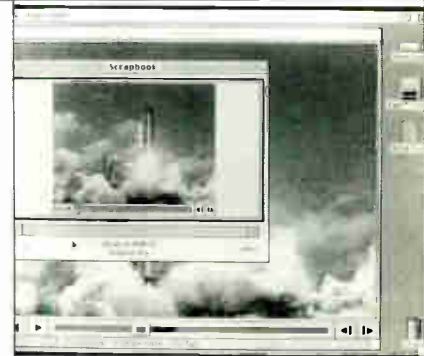
The most interesting software program that integrated audio and video was Passport Producer, which was being demonstrated on a Mac at the Passport booth (a PC version is also in the works). Producer provides an easy-to-use, visual cue-sheet interface that allows you to combine MIDI files, SND files, 8- and 16-bit AIFF files and Sound Designer II files with QuickTime movies, animation and titles. All of the time-based media are under SMPTE control, and each is editable provided the appropriate application resides on your disk. Just double

click the cue you want to edit (as shown in a track) and that application will open. Under System 7, Producer will even continue to play in the background. Producer was scheduled to be released later this year. If it does what it's supposed to do, it promises to be an exciting addition to the multimedia producer's toolbox.

Speaking of QuickTime, the floor at the January MacWorld Expo held in San Francisco was ripe with developers showing QuickTime products. Apple Computer set up a QuickTime theater where over 50 new third-party hardware and software products were on display. Here are just a few highlights: HyperCard 2.1 support of QuickTime movies; QuickTime incorporation into the popular After Dark screensaver from Berkeley Systems (Berkeley, Calif.); the ability of MacroMind•Paracomp's (San Francisco, Calif.) Director and MediaMaker to integrate QuickTime; Voyager CD-ROM products with QuickTime movies; QuickTime "Clipmovies" on CD-ROM from several companies; an accelerator card from Storm Technology (Mountain View, Calif.) that uses JPEG to play QuickTime movies at 24 frames per second;

QuickTime movie editors from DiVA Corporation (Cambridge, Mass.), Adobe Systems (Mountain View, Calif.) and others; platform-independent playback of QuickTime movies from CoSA (Providence R.I.); and QuickTime output format of files created by both the Video F/X high-end Mac-based video production system and Soft F/X, a software only version of the product from Digital F/X (Mountain View, Calif.).

What's this? Is the multimedia train actually pulling out of the station?



New Solutions



Advanced, modular hardware and software transform the Macintosh into a powerful, elegant audio workstation:

- **NoNOISE:** unsurpassed noise reduction tools
- **Sound for Picture:** post with multiple machines
- **Multi-Track Recording/Editing:** 2 to 24 TK
- **CD Printer:** recordable and pre-master CD's
- **Virtual Mixing Desk:** automated mixing and EQ
- **CD Pre-Mastering:** waveform editing, PQ codes

And the **Sonic System** alone offers real-time EQ and waveform display with background load, unload, archive, and de-noise. In New York, call **SCI** for a demonstration.

"Macintosh" is a registered trademark of Apple Computer, Inc.; "CD Maker" is a trademark of START Lab; "NoNOISE" is a registered trademark and "Sonic System" a trademark of Sonic Solutions.

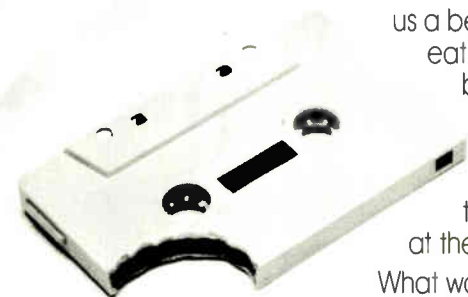
AKG, API, Apogee Electronics, Apogee Sound, Brynston, Canare, Drawmer, Eventide, Gefen Systems, SigTech, Sonic Solutions, Sony, Sound Ideas, T.C. Electronic, Westlake, Whirlwind, White Instruments, and other exceptional audio products.

studio consultants, inc.

321 West 44th Street, New York, NY 10036 (212) 586-7376
Equipment, support, and design services for professional audio facilities and broadcasters — since 1971.

USE READER SERVICE CARD FOR MORE INFO

WE'RE STILL HUNGRY



Two years ago we ran an ad that challenged you to "show us a better cassette and we'll eat it". We offered you a better sounding tape, faster turnaround and a better price. Instead of eating any tapes, we've been amazed at the response.

What was proven to us was that people everywhere are really listening to the quality of their audio cassettes. And the best sounding audio cassettes available anywhere are mastered and duplicated at Music Annex Duplication.

The challenge still stands.

Call us and ask for our free demo tape. Find out how good a cassette can sound.

Now offering CD's!

OUTSIDE CALIFORNIA • 1-800-869-0715

ARTIST'S STUDIO

MTR-12 1/2-inch 2-track and a few DAT and compact cassette machines. Not exactly the most glamorous studio setup in the world. But even more mind-boggling, for a musician admired by many keyboard players for his innovative use of synth sounds, is his collection of sound sources: a Roland 106, a Roland JD-800 and two Akai S1000s, and that's it! To complete the picture there's an Atari Mega ST2 computer with Cubase software, plus Steinberg SMP24 SMPTE-MIDI processor and an SBX-80 sync box.

William Orbit (née Wainwright) himself is also an unusual presence. He's tall and skinny, almost to the point of being gaunt. He's dressed in ragged trousers, an old jean jacket and a black cap, pointed backward. Most striking, however, are his intense blue eyes. They seem to be lighted from within.

Confronted with rather quizzical looks about his little home studio setup, he embarks on a deluge of opinions, explanations and observations. "This thing about having to have the latest technology is completely fallacious," he asserts. "I don't have that much stuff, and neither do I need or want it. You can spend thousands of pounds on the most expensive reverb and then feel compelled to use it. But in reality you have to keep looking at the music and what it really needs. I feel that often it's more about dynamics and arrangement than the latest in sound-processing."

Orbit calls his working style "erratic." As he keeps talking, it emerges that one could also add adjectives like "fast," "improvised," "risky" and "intuitive." The studio is in many ways his main creative instrument—more so than his first instrument, the guitar or the keyboards, which he maintains he "can't play properly." Orbit has developed a recording ethos, which is all about going for what's sounding right in the moment and trying not to get bogged down in details.

His recording method includes doing live overdubs while he's mixing, straight onto the 2-track. "A track is an ensemble that you're trying to get to work together as a whole," he explains. "So if I've made a recording that I'm happy with but something isn't quite right, rather than endlessly EQ'ing it and trying to wrestle the snare and bass drum into shape, I prefer to free my mind from what I've got and just do it

Sound Tools II.



The New Standard for Digital Editing & Mastering.

Digidesign proudly presents Sound Tools II™, the next generation of the most popular direct to disk stereo editing and mastering system in the world.

Sound Tools II features the same intelligent design and unrivaled ease of use that made its predecessor the industry standard for disk-based digital audio. And now Sound Tools II lets you work with greater speed and higher fidelity than ever before.

That's because Sound Tools II's enhanced digital signal processing dramatically accelerates system performance, putting even more computing power into our acclaimed digital EQs and new time compression/expansion and pitch shift with time correction DSP effects. And the good news doesn't stop there.



Digidesign is dedicated to designing products that grow with you as your needs grow. That's why we offer you the opportunity to affordably upgrade from Sound Tools II to our multitrack digital audio production system, Pro Tools™ at any time.

Sound Tools II's new audio interface now puts the same superior audio fidelity featured on countless albums and films in a single rackspace unit with both balanced analog and digital ins and outs (AES/EBU and S/PDIF).

So if your feeling about disk-based recording has been "wait and see," then wait no more. Go with the new standard. Go with Sound Tools II.

Call 1-800-333-2137 for a free brochure and a reservation at a demo near you.

digidesign

1360 Willow Rd. #101
Menlo Park, CA 94025
415.688.0600

USE READER SERVICE CARD FOR MORE INFO

© 1992 by Digidesign Inc. Features and specifications subject to change without notice. All trademarks are property of their respective holders.

Hear The Warmth . . . Summit Tube Processing



Summit Audio, Inc.
 P.O. Box 1678, Los Gatos
 California 95031 U.S.A.
 408-395-2448
 Fax: 408-395-1403

ARTIST'S STUDIO

again, live, in a way that is right for that moment. If I'm mixing a 12-inch and three minutes into it I suddenly feel it needs a new dimension, something to give it a kick, I'll add it at that moment, manually. Mixing is a very fluid thing really—it's never fixed—you can always change and add things, even till the very last moment."

Orbit applied this fluidity to great effect on a dance-mix of Peter Gabriel's tender ballad "Mercy Street," requested by Geffen Records in America for their campaign to promote Gabriel's compilation album *Shaking the Tree*. "I did two remixes of that track," he recalls. "Peter liked them both and wanted the best of both combined in one version. So I brought both mixes up on the

them, but I often wonder what they're about. Remixes are important for the clubs, but who else listens to remixes, apart from a certain number of people who follow everything of a certain artist or producer? I get letters from people who follow everything I do. That's important to me, because it means that I know that the subtleties I put into things are appreciated. But still there's this weird anomaly about remixes. I mean, why are they done, really? How do the economics work? Are they only a marketing thing? It often appears that way. I think that at the end of the day they're bullshit."

Apart from his remix work and Bass-O-Matic project, Orbit is branching out in other directions. He's working on his third instrumental solo album, and he's producing some mate-

You have to keep looking at the music and what it really needs. I feel that often it's more about dynamics and arrangement than the latest in sound-processing.

desk from two DATs, EQ'd them to make them compatible and crossfaded them straight onto the 2-track. At the same time I added some extra vocal samples live, manually, just to create some dynamics, which would help the edits."

Orbit explains that he generally samples the whole of the multitracks he receives into the S1000, and then juggles the bits and pieces around like a jigsaw puzzle until he finds a form that's right: "I can spend a lot of time on a remix, usually more than on my own new tracks," he notes, "because it's both technically and artistically very difficult to make something that's fresh and new, yet has respect for the original. That can take a long time."

Orbit apparently takes his remixes very seriously, so it's surprising that when he's asked about their musical relevance he comes out bluntly and simply with, "People pay me a lot for them, and I enjoy doing them. So I do

rial for former Bass-O-Matic singer Sharon Musgrave, who signed a solo deal with WEA. In addition, he will take the unlikely step of producing the next album by The Christians. "The songs on their new demo are just outstanding," he beams. "They've been solid in my head since I heard them."

But, of course, it wouldn't be William Orbit if he didn't manage to give a strange twist to this already out-of-the-ordinary collaboration. "I won't be spending that much time with them in the studio," he explains. "I can't be 'Mr. In-Control'—organizing their sessions—and they don't want that either. So they'll send me their tapes here, and I'll send them tapes back with comments and suggestions.

"I can't be involved in long projects like that anyway," he concludes. "I need to do things in my own time." ■

Paul Tingen is a Sussex, England-based freelance writer.

USE READER SERVICE CARD FOR MORE INFO

The Pro Tools Advantage



You've been thinking about a digital workstation. Smart move. When your success rides on getting the job done right, done yesterday, and under budget, you need the Pro Tools™ advantage. Pro Tools by Digidesign is the most flexible and powerful multitrack hard disk recording system available. Here are four reasons why:

Advantage 1: Fast, Flexible & Powerful

Pro Tools is designed for speed – whether you're editing music, sound effects, foley, ADR or dialog. No other system offers so much: high fidelity analog and digital I/O, MIDI, built-in digital effects & EQ, and automated digital mixing – are all standard features.

Advantage 2: Expandable

Need more than 4 channels? Expand up to 16 independent channels as your needs and budget allow. Unlimited virtual tracks give you even more production power and creative control.

Advantage 3: Totally Integrated, Great Options

Pro Tools starts with integrated digital recording & editing, MIDI and mix automation. Need more? Add our SampleCell™ for RAM-based sound effects. Looking for comprehensive synchronization? Try the new Micro Lynx™ from Timeline. Want real knobs and faders? There's the CS-10™ from JL Cooper. Integrated MIDI sequencing? Try Opcode's Studio Vision™. The best companies in the industry support Pro Tools – no other system offers you all these options.

Advantage 4: Profitable and Affordable

Wouldn't you rather make profits than lease payments? With systems starting at just under \$6,000, you'll recoup your investment immediately. And because Pro Tools is so cost-effective, you can now afford multiple workstations – making your facility even more productive.

New Features and Options

- 8, 12, and 16 channel systems available
- System Accelerator™ Card – For expansion & enhanced speed
- Video Slave Driver™ – Locks Pro Tools to House Sync
- New Audio Post Features – New Spotting options, Feet + Frames support
- JL Cooper CS-10 Control Station – Hardware Controller
- Timeline Micro Lynx – Comprehensive SMPTE/MIDI synchronization

See the Pro Tools advantage in action today. Call us at 800-333-2137 and we'll register you in a seminar near you. We'll also send you a free, full-color Pro Tools brochure.



digidesign

1360 Willow Rd. #101
Menlo Park, CA 94025
415.688.0600

© 1992 Digidesign Inc. All features & specifications subject to change without notice. All trademarks are the property of their respective holders.

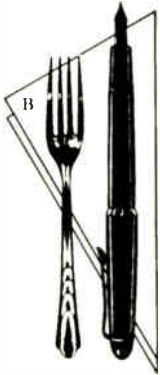
USE READER SERVICE CARD FOR MORE INFO

World Radio History

by Mr. Bonzai

RICKIE LEE JONES

SWEET AND SPICY



Rickie Lee Jones is a breathtaking vocalist with an incredible range and scope of phrasing, a unique and colorful storyteller/songwriter. Let's take a closer look and see if we can understand this enigmatic woman who burst onto the scene in 1979 and has surprised and seduced us ever since.

resulted in her double-platinum debut, which earned her the Grammy for Best New Artist. Her 1981 *Pirates* rose to Number Five on the charts, and in 1983, *Girl at Her Volcano* landed solidly in the Top 40. In 1984, she moved to Paris and wrote material for her ambitious *The Magazine*, which again



PHOTO: ANNALISA

Born in Chicago, Rickie Lee grew up in Arizona and Washington before settling in Los Angeles. Soon after Lowell George recorded her "Easy Money," she landed a contract that

achieved critical and commercial success.

But for the next five years she disappeared from music—she got married, had a baby girl and redefined her

Trevor Rabin says

YES

to DynaTek



- Completely shock resistant
- Front panel SCSI ID selector
- Multiple SCSI ports
- All steel rackmountable cabinet
- Universal power supply
- Ultra quiet high capacity fans
- Up to 5 years warranty

**As guitarist,
songwriter and
producer for the
legendary rock
group YES,
Trevor Rabin
exclusively
uses DynaTek**



USE READER SERVICE CARD FOR MORE INFO

DynaTek Automation Systems, Inc.

15 Tangiers Rd. Toronto, Ont. • CANADA • M3J 2B1

(416) 636-3000 • FAX (416) 636-3011

Worldwide Technology



HEAVY DEALS



Over 300 top quality product lines priced so low we promised not to print them!

1-800-356-5844

AUDIO • VIDEO • LIGHTS

FULL COMPASS

Consultation: 608/271-1100
5618 Odana Rd., Madison, WI 53719

USE READER SERVICE CARD FOR MORE INFO

life. Her return in 1989 brought us *Flying Cowboys*, co-produced with Walter Becker, and a "Makin' Whoopee" duet with Dr. John that garnered a Grammy for Best Jazz Vocal.

Her latest album, *Pop Pop*, was co-produced with David Was and recorded at the now defunct Skyline Recording in the rustic Topanga Canyon of L.A. Mainly using vintage tube mics for extremely intimate vocals, Rickie Lee worked with a small acoustic ensemble featuring guitarist Robben Ford, bassists Charlie Haden and John Leftwich, saxophonist Joe Henderson and button accordionist Dino Saluzzi. The relatively dry mix is a departure from the norm, accentuating the minimal instrumentation and the personal nature of the project.

On this album of songs penned by other writers, she gives her special spin to standards like "Second Time Around" and "Bye Bye Blackbird," as well as striking interpretations of Jimi Hendrix's "Up From the Skies" and Jefferson Airplane's "Comin' Back to Me."

The new album is a fireside heart-warmer, and to go back and listen to her early work is to fall in love again with a one-of-a-kind talent. We met up just prior to her performances on the new Dennis Miller TV show and the launch of her '92 tour.

Bonzai: How'd it go with David Was?

Jones: I like him—David brought camaraderie to a situation where I was operating alone. I wanted to evoke a certain mood, with a small ensemble of all acoustic instruments. It seemed like a great idea, but as we went to do it it sounded really empty. It was nice to have David there to reinforce what I wanted. He's certainly intelligent, and I love being around intelligent men.

Bonzai: There is a very stripped down sound on this album—courageous.

Jones: I dug it. I think it turned out really good.

Bonzai: You recorded at Skyline Studio in Topanga?

Jones: Yes, it's unfortunate that it closed down, because it was a nice place to work. Just two people, and they made you dinner and took very good care of you. Most of the studios couldn't give a shit, because the next guy will pay just as much to be there. It was a wonderful environment to work in.

Bonzai: The first time I listened to this

album it was a rainy day, and I had the fireplace going. Seemed to be the perfect mood...

Jones: That's nice that you say that, because that's how my living room is, too—often raining outside, with a fire going.

Bonzai: Quite a spread of material on this record. You do "Up From the Skies," certainly a new interpretation of Jimi Hendrix. Why did you choose this song?

Jones: Well, I never thought I would do a Jimi Hendrix song, but I listen to his music all the time. I got to see him in 1970 when I was hitchhiking up the coast. Some guy picked me up, and we heard on the radio that Hendrix was playing the Ventura County Fairgrounds. We took the offramp and hid in the bleachers for about five hours until the gate opened.

Seeing him perform was a very powerful experience for me. It was the pinnacle of that time, and I felt that I witnessed it ending. He had a way of moving when he played—he moved in space unlike anybody I had ever seen. He seemed to sit in the atoms differently than we did. He was an amazing, wonderful man, and the

**"You like me; you
don't like me—
I'm not afraid of
it anymore."**

music he made, to me, is just about timeless. It seems silly to me if people are surprised that I did a Jimi Hendrix song.

Bonzai: Your singing really draws attention to him as a lyricist, rather than a guitar player...

Jones: That's the amazing thing. When I listened to his songs I found them to be a little self-conscious. But after recording that song, and listening again to his music, I have another feeling about the lyric. He was vulnerable, worked really hard. Tried his best, and that's what is so touching about his music. It's not slick, he doesn't know exactly how to say it. When he says, "I just want to know about your different lives on this here people farm," it's sort of a goofy thing to say. When someone else interprets it, it takes on another meaning. I understood it more when I sang it. It wasn't shrouded with his

persona.

Bonzai: It cracks me up that you recorded two songs, "Spring Can Really Hang You Up the Most" and "The Ballad of the Sad Young Men" from *The Nervous Set*, which is listed as a "1959 Beat Generation Musical." Sounds like *Blackboard Jungle*.

Jones: I just picked those songs, and when we looked at the sheet music we realized that they were from the same play. Both songs have very cool lyrics—amazing lyrics.

Bonzai: Do you have an affinity for the Beat Generation? You mentioned being on the road, hitchhiking...

Jones: Yeah, but I didn't know anything about beatniks. I was 14. My affinity must come naturally, not from reading about them. I just naturally lived a kind of life that they were famous for. I think my being related to them came through Tom Waits—me being connected to Tom, and Tom being connected to that.

Bonzai: Why is that association so strong?

Jones: Well, when I began, we were living together, and I talked about him a lot. I will forever be related to him.

Bonzai: Lowell George recorded your song "Easy Money" before you made your first record. What effect did that have?

Jones: It was Lowell who brought me to the attention of Warner Bros. That had a big effect, but his recording of my song didn't. My recording did, though. In another way, having a songwriter like Lowell record one of my songs was amazing, now that I look back in retrospect.

Bonzai: Did one instance move you from obscurity to prominence?

Jones: Yes, my performance on *Saturday Night Live* in 1979. That did it. You felt it. Electrifying.

Bonzai: Then you won the Grammy for Best New Artist in 1980...

Jones: But "Best New Artist" doesn't mean shit, as do most awards. I disliked them more than I do now, but it's only based on sales and there are no awards for integrity. My record was nominated for six Grammys, and there were other areas it deserved more. Dire Straits was nominated that year for Best New Artist. So, how does it matter?

Bonzai: Meaningless as it might be, you and Dr. John won a Grammy in 1990 for your "Making Whoopee" duet. How did that come about?

Jones: We go way back. I met Dr. John

before I got signed. I was talking with three labels at the time and his producer, Tommy LiPuma, was running Portrait Records. He was thinking of signing me, and he sent Dr. John to meet me—as his liaison.

I'll never forget him walking down La Cienega Blvd. in all his Dr. John regalia, with his cane and his mojo, and the patchouli oil wafting down the street. And me in my beret. When we met it was an incredible moment. I put my arm in his, and we became friends immediately. We walked down the street—it was like a little movie. Then he took me to a house, and we played a couple of numbers together. We've been friends and played together ever since, but "Whoopee" was our first recording.

Bonzai: I interviewed Lyle Lovett last month—he seemed very pleased that you are singing on his new album.

Jones: A sweet man. He's a good songwriter in the tradition of good songs and good characters. I learned about Lyle and his Large Band during the "Flying Cowboy" tour we did with him. I told him that I like it best when he plays alone with his cellist.

Bonzai: I noticed in my research that your dad, Richard Loris Jones, has the same initials as you...

Jones: I was named after my dad, who was a songwriter. He was also an actor, but I think he most wanted to be known as a songwriter.

Bonzai: Was it he who got you interested in music?

Jones: Absolutely. I did one of his songs, "The Moon is Made of Gold," on the Rob Wasserman duet record. He wrote a few others in that '40s genre that are pretty good. I don't know how many people want to do songs from that era, but if anybody does, I have a couple of nice ones.

Bonzai: Was there a lot of music around the house when you were growing up?

Jones: Yes, especially when my uncle would visit. They would get together and play. I used to sit and sing with my dad. I can remember a tape we made when I was seven years old. He taught me to do harmony on "You are My Sunshine." He was just so excited, playing it for my mom and saying, "Listen to this—she can sing harmony!"

Bonzai: Do you still have that tape?

Jones: No, my sister went on a diet and recorded over it, "I will not eat, I will not eat." It was 1963, and she was trying self-hypnosis. But there was a lot

THE Art DIFFUSOR™
The Ultimate Mix of Technology with Art™

Performance Tested
.....
Quality Materials
.....
Superior Value
.....

Sound Architecture

INTERNATIONAL SALES
Pan Technical Sales & Marketing
London, U.K. 44-71-247-6101
FAX 44-71-247-6104

sdc For Orders and Free Application Assistance Call Systems Development Group
1-800-221-8975

USE READER SERVICE CARD FOR MORE INFO

FUTURE DISC SYSTEMS

LUNCHING WITH BONZAI

of music in our home, and we moved a lot...

Bonzai: Why did your family move around so much?

Jones: It's that feeling that if things aren't going too well, move and things

will get better. I think it's an American thing—starting over again. You won't find Europeans moving around.

Bonzai: You packed it up and moved to Paris in 1983...

Jones: That was a daring thing to do. It was hard.

Bonzai: How did the European expe-

Pop, Pop—Pop!

by Joel W. Moss

I've become rather spoiled over the years, being fortunate enough to work with music that interests me as a listener as well as a professional. So the call from producer David Was to mix an album of standards sung by one of favorite vocalists Rickie Lee Jones fit perfectly into my self-styled job description: "Have fun... get paid!"

Rickie Lee and David had taken a minimalist approach to the arrangements of the songs, attempting to create a live, clublike atmosphere. The mix agenda was to bring the listener in close to that best seat in a very small house. We kept the reverb subtle and constructed a mental picture of the musicians' stage setup that remained constant throughout the album. We were all pleased by the atmosphere we established. Then I began to deal with the problems that arose from such an in-your-face mix.

I mixed primarily on a Neve VR with Flying Faders. A couple of tunes were mixed on a modified Neve 8078 with Massenburg automation. The automation made it possible to deal with the first set of problems: The acoustic guitar was relatively close-miked. It was featured throughout the record and had a wonderful tone. However, there was a lot of fret noise. I don't really object to fret noise, but during some of the more intimate moments there would be an explosive shot that we all couldn't live with. None of us wanted to compromise the guitar sound by finding an overall EQ curve that lessened the problem. The final solution was to use a combination of momentary EQ and amplitude shifts. The guitar was multed to an open channel and the computer set to switch between the original track and the affected clone. In a couple of instances, I

also introduced a slight delay (8 to 10 ms) to the mult and used it in combination with the original track. The resultant phasing reduced the shrillness of the noise.

Another problematic instrument was the bandonlan. This accordionlike affair has a unique folk sound and 100 of the noisiest buttons ever to have immigrated from Argentina. The problem here was that these clacking, clicking buttons coincided with all the notes played, so any manipulation of the clicking would change the sound of the instrument. The solution, and only a partial one at that, was to memorize the most offensively noisy sections and make very rapid, severe fader moves to lessen the noise with the least compromise to the performance—very time-consuming, but ultimately acceptable.

I turned to the Sonic Solutions system (expertly piloted by Ric Wilson of Pro Sonus) for assistance in two problem areas that cropped up in Rickie Lee's vocals. She is very focused, and when singing live she is the stylistic anchor of the band. When tracking her vocals, some microphone "P" pops and static crackle caused by her mouth coming in contact with the vocal mic were accepted in deference to a great performance. For the most part, the "P" pops were controlled with momentary amplitude drops and the introduction of a highpass filter (both accomplished with the console automation).

In a few more severe cases as well as for the static crackles, I used Sonic Solutions to isolate these spikes, which were easily recognizable on the voice print. The "P"s were softened by using two narrow band digital filters at 60 Hz and 400 Hz introduced only at the specific point of impact. The static was eliminated completely by the "de-popping" function created by Sonic Solutions for just such an application.

HAMMER
TOM PETTY
LUTHER
VANDROSS
JANE S
ADDICTION
BEBE & CECE
WINANS
BOYZ II MEN
BELL BIV
DEVOE
COLOR ME
BAD D
GUY
MC BRAINS
THE BOYS
ALICE IN
CHAINS
BEASTIE BOYS
QUEEN

10 YEAR
MASTERING
STUDIOS
HOLLYWOOD, CA
213/876-8733
FAX 213/876-8143

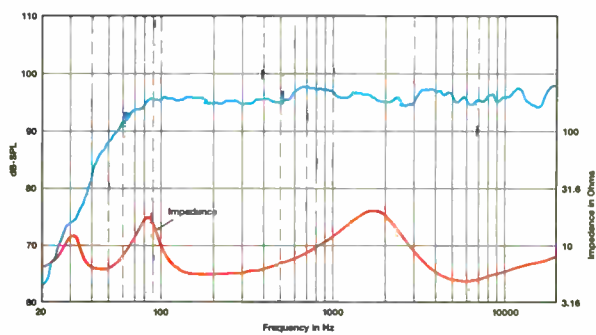
The 4200 Series. Designed For The Control Room, Not The Living Room.

Today's recording studio has evolved into a multi-function facility which simultaneously addresses the specialized needs of music recording, film and video post, and radio production. In this environment, where the most critical listening often occurs in the final mix, close proximity monitors are often more important than the mains. The problem: most console top monitors, unfortunately, were designed for the living room not the control room. Until now.

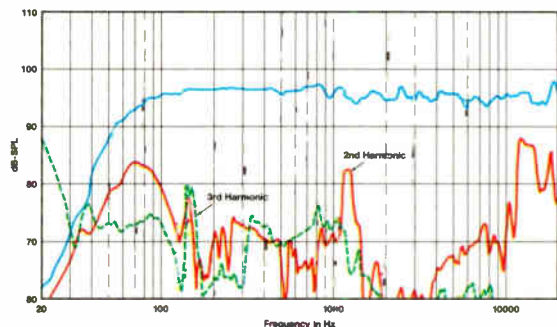
With the 4200 Series we're taking our stand from where you sit: right where you work at the console. Designed, engineered and tested from this position, the 4200 Series is the first console mount monitor created specifically for the professional recording environment.

Both models give you pin-point imaging by delivering high and low frequency information to your ears at precisely the same instant. By virtue of their symmetrical design the 4200 Series monitors are mirror imaged. And so nothing gets in the way of your music, the 4200 Series introduces our uniquely sculpted Multi-Radial™ baffles incorporating newly designed pure titanium tweeters and low frequency transducers. The combination of these technologies successfully corrects time arrival anomalies and eliminates baffle diffraction distortion.

4200 Series: console top monitors designed in the studio, for the studio, with sonic performance rivaling much more expensive monitors. 4200 Series: the shape, and sound, of things to come. Available at your local authorized JBL Professional dealer.



Frequency Response (Model 4206): 96 dB at 1 m, typical console listening levels



Distortion vs. Frequency (Model 4208) 96 dB at 1 m, typical console listening levels (distortion raised 20 dB)



JBL Professional
8500 Balboa Boulevard, Northridge, CA 91329

A Harman International Company

Five reasons to call OMI right now.

"The Denny Jaeger Master Violins sound better than the real thing!"

- *Bon Jovi*

"We've never heard anything like the Jaeger Library.
Sampled strings just aren't going to get any better than this."

- *Keyboard Review, Nov '91*

"The Denny Jaeger Violins are the most emotional samples
I've ever played. Bar none."

- *Jack Nitzsche, Academy Award-winning composer*

"The Master Studio Collection contains thousand of well-recorded,
useful sound effects and musical instruments that provide a
wonderful varied resource for the sound editor/designer."

- *Bill Koepnick, Emmy Award-winning sound editor*

"I believe in the Sonic Images sounds. They're clean and powerful.
I use them every day."

- *Herbie Hancock*

1. The Denny Jaeger Master Violin Library. A powerful new approach to sampling lets you control tuning, size of string sections, attack articulations, vibrato and even the lengths of individual bow strokes. Our CD demo will change the way you think about sampled strings forever. We guarantee it.



2. The Master Studio Library. Two unique volumes feature rare and ethnic acoustic instruments from around the world, including Taiko drums, Celtic harp, bowed psaltery, Persian santur and hundreds more.

3. The Sonic Images Library. Two volumes, over 200 Mb each, contain uniquely artistic brass, brass choirs, orchestras, pianos, drums, percussion and special effects. Created by Christopher Franke, formerly of Tangerine Dream, these samples have the touch of a true master composer.

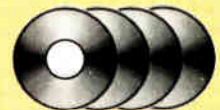


**OPTICAL MEDIA
INTERNATIONAL**

180 Knowles Drive
Los Gatos, CA 95030

1 800 347-2664

4. Ready-to-Play Libraries. All libraries contain sounds that are organized, banked, looped and mapped for the EIII, Sample Cell Akai, EPS and 16+. And soon Kurtzweil K2000. The Sonic Images library is also available for the Emax II and Roland S-770.



5. Full CD ROM Support. OMI libraries offer the advantage of CD ROM, the format that provides the most reliable reproduction as well as the swiftest access and greatest compactness. We can even sell you the CD ROM hardware that maximizes access efficiency and reliability. All libraries also available on MO's and RM 45's. Ask us.

USE READER SERVICE CARD FOR MORE INFO

rience affect your work?

Jones: It humbled me. I really needed to start again. It brought me to zero. And that was good for me. It was really hard, but it was what I wanted to do. I don't know about any artistic community—I didn't meet anybody.

I left [L.A.] because I just didn't want to be here. I didn't want to do this thing. I didn't want to be around L.A. people: lawyers, accountants and people whose only involvement was with my work. I never really knew how to make friends, and I found the situation was impossible. Of course, I didn't make any friends in France either. But I did learn a lot about what it meant to be me an American in the big picture. I'm no longer oblivious and trusting of the news. I know now how much is edited out of the American news. You get the gruesome details in France.

Bonzai: Well, now you're here. Do you feel different?

Jones: Absolutely. I'm enjoying it.

Bonzai: What is the difference now?

Jones: I just decided that I wanted to do it. Whatever I felt was misrepresented or incorrect about my life in the music business before is not with me anymore. I must have reckoned with my personal picture of myself and corrected it, because I really dig it. I really love performing. And I'm not afraid to start writing songs. You like me; you don't like me—I'm not afraid of it anymore.

Maybe I was terrified of not being liked, or terrified of not liking myself. You could make a list of 25 reasons, but it doesn't matter. I think the main difference came about because of having a baby. I'm not haunted by an unresolved chord during the day, and loneliness. My little friend is with me in the lonely hours.

Bonzai: And your little friend makes a guest appearance on the new record...

Jones: That was hard to do, you know. You want to put 'em on everything, but you don't want to put 'em on anything—child exploitation. But she has such a great laugh!

Bonzai: Do you sing to her at bedtime?

Jones: No, she doesn't like me to sing to her. She wants me to listen to her. She reminds me of myself when I was her age. She wants the stage, and she's never liked to hear me sing. I think I must have a different air when I sing that kicks in and she goes, "Oh, stop

INVALID TIME CODE

"WHAT'S WRONG??!"

Find out with the
SR-15
Time Code
Distripalyzer™



A Distributor/Reshaper, a Stripper and an Analyzer.

- RS-232 serial / printer port w/ time code error report
- Time code / user bits reader display
- Frame rate counter (w/ 2 decimals)
- Drop Frame count verification
- Video - Time Code sync monitoring
- Synchronous pilot tone output
- 5 reshaped time code outputs

Brainstorm Electronics, Inc.
1515 Manning Avenue, Suite #4 • Los Angeles, CA 90024 • (310) 475-7570

USE READER SERVICE CARD FOR MORE INFO

**38 VIRTUAL TRACK
HARD DRIVE RECORDING
ON A PC/AT?**

MICRO SOUND™

Now the power of 38 virtual track audio recording and mixing is yours! Use MicroSound for:

- Music production
- Video and film post-production
- Sound effects
- Radio/TV spots
- CD, CDI, CD-ROM & multimedia
- Dance mixes

All your audio applications will turn out clean and crisp with phase linear, -100 db noise floor quality and transparent audio recording. All editing is saved on MicroSound's hard drive for DDD mastering and first generation sound quality from start to finish. And talk about fast—any delete is done or undone in 0.1 second!

Whether for home or studio, MicroSound has a system to fit your needs and budget. MicroSound workstations are available from under \$8,000 to \$15,000! A CD recorder is optionally available to give you a CD-capable mixer for under \$30,000! Or add MicroSound to your existing PC-AT for under \$4,000!

YES!

MTUC
Micro Technology Unlimited

156 Wind Chime Court
Raleigh, North Carolina
USA 27619-1061

Telephone: (919) 870-0344
Fax: (919) 870-7163

Call, write or fax today for your free MicroSound brochure

"The best sound effects library is The Hollywood Edge — without a doubt!"

Oliver Stone, Director

(J.F.K., Born on the Fourth of July, Platoon)

"Excellent!"

Martin Scorsese, Director

(Cape Fear, GoodFella's, Raging Bull, Taxi Driver)

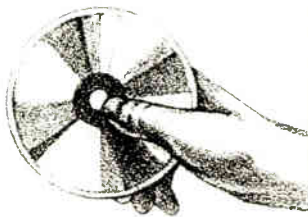
"Nothing else even comes close!"

Shadoe Stevens

(American Top Forty)

**Listen for yourself—
If you buy sound effects
for your company,
call us for a**

FREE DEMO DISC!



Call Toll Free
800-292-3755

In CA Call
213-466-6723

The
HOLLYWOOD
Edge

**Comprehensive sound effects
packages starting under \$300.**

7060 Hollywood Blvd. • Hollywood, CA 90028

USE READER SERVICE CARD FOR MORE INFO

LUNCHING WITH BONZAI

singing!" This happened right away, when she was very young.

Bonzai: Let's talk about your way of working. Is it different now, from what it was in the beginning?

Jones: I don't let it get very different. I would never use a computer to write on, because the effort would use up about 30% of the necessary brainpower. I like a pencil. In the studio, I like to know how the board works, and I've learned some basics after ten years. I know enough about microphones to prefer the older tube mics.

Bonzai: What makes a good producer?

Jones: For quite some time, I've reckoned with what a producer means to me. It varies from record to record, and depends on the mood I'm in for that piece of work. The main criterion is that the producer provides a camaraderie, more than a technical expertise. I want them to relate to the work, to dig it and help to bring an atmosphere of confidence.

In the future, I might like to have a producer like in the old days. You know, I would just walk in and sing, and the producer would do it all. I'm getting tired of doing so much work, but I have the need to control almost every aspect of what I am doing.

Producers...Lately, I've thought, "whatever it is they do, let them get credit for it." I don't like it when people see Don Was produced a record, and they act like it was *his* record. When people give so much credit to the producer, it makes me crazy. I see it a lot, and I think the producer is the guy who sits and makes sure everything works—he makes sure that everybody is happy, and that the tape is running.

And there is this emphasis on "he." I'd like to see some women producing. It's not that hard to do. The engineer has to know what is happening. Some producers know more than others, but some don't know shit. It's really a goofy job and some work hard, and some don't do much. I decide what echo goes on, and I sit and do the EQ. Nobody makes a record of me that I didn't make, too.

Bonzai: Did you ever think of producing other artists?

Jones: It is a lot of work, but I was thinking I might like to produce Maria McKee, or somebody who needs good songs. But it's a lot of work, and you have to make yourself available to

them and only them. If a producer always has a phone in his hand at your session, you should fire him.

Bonzai: Anything else that bothers you about this business?

Jones: It's really a sexist industry. It's a boy's club, at every level, from the way musicians act with a woman in their midst, to the corporate attitude toward allowing a woman to run anything. It's just hideous, and it's amazing how a small percentage of the population runs everything. I'm not trying to champion a female cause anymore; I just do what I have to do. These things used to drive me crazy.

Bonzai: Have you made any big goofs in your career?

Jones: My big goofs aren't that likely to happen to many people. My big goof was a life goof. I couldn't reckon with success and playing the part. People are attracted to the image, and it's easy to get lost if you become successful—and there are a lot of successful people who got lost.

Bonzai: Was it because you were so young?

Jones: No, I think it's just a cataclysmic event, at any age, to have a million people know who you are, and treat you in that excited, ecstatic way. They would never act that way with a real person. It's a lot to deal with, and takes years to understand. It was not healthy, and I didn't like it. I had to withdraw, and that is a difficult thing to do in pop music. I like to think of myself as continuing. But to remove yourself for five years, you lose an entire generation of people who enter the buying market. It's humbling, it's exciting, it's bizarre—and you have to keep your sense of yourself.

Bonzai: You're proud of your early work aren't you?

Jones: Oh yeah—I like everything I've done.

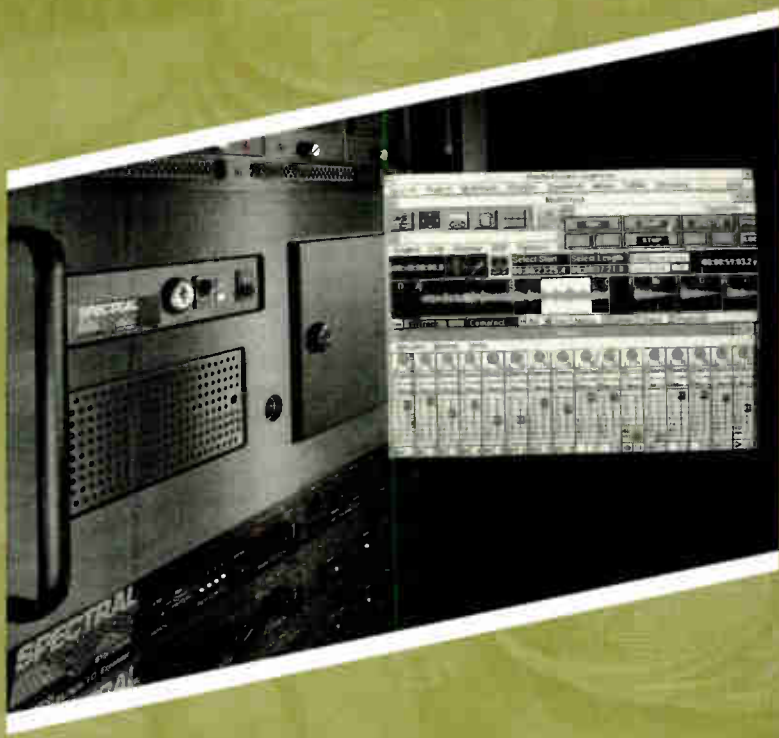
Bonzai: As I was listening to your albums last night, a name came to mind: Van Morrison.

Jones: He's my idol.

Bonzai: If I had to make a label for you, I would call you the female Van Morrison. The storytelling, the delivery, the anguish, the spirit.

Jones: Absolutely. That's perfect. If I had a soulmate, and wanted to be compared to anybody, that would be the highest compliment. ■

Hepcat that he is, Mr. Bonzai's favorite ice cream flavor is spamoni-o-di... Ben and Jerry are you listening?



Certain Things Set the Standard...

Gold may set the standard in the world of finance, but Spectral does it in the digital domain. And we've been doing it all along.

It was Spectral Synthesis that first took a generic computer workstation and filled it with a high-speed digital audio bus that connects a 16-track direct hard disk recorder and editor, a 16-bit polyphonic sampler, multi-channel DSP assisted sample editor and real-time digital audio mixing and signal processing...all controllable through MIDI. Best of all, our state-of-the-art software lets you run them all simultaneously without ever going analog!

The Spectral *AudioEngine*™ series of Digital Audio Workstations are the most powerful and cost-effective tools available today for the professional audio industry. Whether your job is recording or mastering music, editing dialog, foley or music for film or video, creating jingles or editing audio for broadcast, Spectral's *AudioEngine* systems provide the speed, flexibility and power you need at a price you can afford.

Spectral Synthesis. Setting the standard for digital audio systems.



18568 142nd Ave NE, Woodinville WA 98072
TEL. (206) 487-2931 · FAX (206) 487-3431

MASTERING THE DIGITAL DOMAIN

USE READER SERVICE CARD FOR MORE INFO

World Radio History

CD PRODUCTION

Music



ILLUSTRATION BY HALSTEAD HANNAH

& SOUND *E* **FFECTS LIBRARIES**

IT'S NO SECRET, TODAY'S PRODUCTION MUSIC AND SOUND EFFECTS LIBRARIES ARE BETTER THAN EVER.

Besides the well-known advantages of compact discs—improved sound quality, 60- to 70-minute storage capacity and relative imperviousness to scratches and other physical damage—the CD medium offers quick cueing and the ability to rapidly audition different selections, two obvious advantages in a fast-paced production environment.

Production Music Libraries

Music libraries offer an almost overwhelming diversity of available material: classical, folk, country, jazz, rock, fusion, rap, dance, religious, new age, ethnic, children's, period pieces, traditional, patriotic, historical, electronic and, of course, everybody's all-purpose favorite, middle-of-the-road. Whether you're in the market for jingles, commercial backgrounds, or music to set the mood for A/V, films, television, radio, spoken-word programs or a high-level sales presentation, the bottom line is that there's literally something to suit any production.

Basically, music libraries fall into two groups: those operating on a "buyout" basis, and those operating on a per-use, or unlimited use, "blanket" licensing arrangement. Typically, a buyout agreement allows the unlimited use of music for a one-time charge. Licensing contracts and rates can take a variety of forms. "Needle-drop" refers to the use of a partial or entire music selection in a single segment of a production. Therefore, if the same theme is used in two different parts of

a film, then two needle-drop charges would apply. A "per-production" rate allows the unlimited use of a particular library or selection in a single production for a set fee, which depends on the audience market size/type, distribution medium and the project's total length. A "theme rate" covers the use of a particular selection on several projects, especially in jingles, television ads and radio spots. An "annual blanket" offers unlimited library use for a yearly payment.

With an extremely wide range of possible applications and audience markets for production music, an equally wide range of charges could apply. For ex-

—CONTINUED ON PAGE 80

Music & Effects for Multimedia on CD-ROM

The advent of Microsoft's MPC standard, together with Apple Computer's release of QuickTime system extensions for the Macintosh, has created a flurry of third-party products on CD-ROM, including a new generation of products that feature music and sound effects—and other media. Accessing material on CD-ROM offers advantages of easy modification on the

—CONTINUED ON PAGE 82



Real Musicians... Real Instruments Your Best Library

In an era when production library music sounds synthesized, synthetic, scientific, and all too similar, you'll appreciate the true *quality* and *craftsmanship* of TM Century's "Winning Score". It's a large library of luxurious, lush strings; rich, real brass; and our exquisite Bösendorfer grand piano.

It's easy to find the *right* music for *your* production in the "Winning Score". There's a tremendous variety of new instrumentals,

ranging from smooth solos, terrific themes, and outstanding orchestras, to the hottest hit sounds from TM Century's state-of-the-art digital studios.

We're recording more great music all the time, making "Winning Score" the fastest growing library, as well as the newest, biggest and the best.

Call, FAX or write for a free sample compact disc of TM Century's "Winning Score" library. You'll be glad you did.

**WINNING
SCORE™**

TM Century
Inc.

14444 Beltwood Parkway, Dallas, Texas 75244

FAX: (800) 749-2121

Phone: (800) 937-2100

USE READER SERVICE CARD FOR MORE INFO

PRODUCTION MUSIC AND SOUND EFFECTS LIBRARIES

The bracketed data under each company's name indicates the type of products offered: "SFX" refers to sound effects CDs; "Buyout PM" refers to production music available on a one-time purchase; "Signatory PM" indicates production music licensed on needle-drop, per-use, per-production or annual blanket arrangements.

AirCraft Music Library

[SFX, Signatory PM]
77 N. Washington St.
Boston, MA 02114
(617) 367-4962, (800) 343-2514

Airforce Broadcast Services

[Signatory PM]
216 Carlton St., Suite 300
Toronto, ONT, M5A 2L1 Canada
(416) 961-2541

Associated Production Music

[SFX, Signatory PM]
6255 Sunset Blvd., Suite 820
Hollywood, CA 90028
(213) 461-3211, (800) 543-4276

Audio Action

[SFX, Signatory PM]
4444 Lakeside Dr., Suite 340
Burbank, CA 91510
(818) 845-8020, (800) 533-1293

Audio Concepts

[Buyout PM]
1653 Merriman Rd.
Akron, OH 44313
(216) 867-4448, (800) 788-1233

Audisee

[SFX, Signatory PM]
621 East Pike
Seattle, WA 98122
(206) 323-6476

Bainbridge Entertainment

[SFX]
Box 8248
Van Nuys, CA 91409
(213) 476-0631

Brown Bag Productions

[Signatory PM]
4134 S. Eudora St.
Englewood, CO 80110
(303) 756-9949

Capitol Production Music

[Signatory PM]
6922 Hollywood Blvd., Suite 718
Hollywood, CA 90028
(213) 461-2701, (800) 421-4163

Century 21 Programming

[SFX, Signatory PM]
14444 West Beltwood Pkwy.
Dallas, TX 75244
(214) 934-2121, (800) 937-2100

CBS Sound Effects Library

[SFX]
CBS Special Products
51 W. 52nd Street
New York, NY 10106
Also distributed by Mix
Bookshelf: (800) 233-9604,
(510) 653-3307.

Comprehensive Video Supply

[SFX, Buyout PM]
148 Veterans Dr.
Northvale, NJ 07647
(201) 767-7990

Creative Support Services

[SFX, Buyout PM]
1950 Riverside Drive
Los Angeles, CA 90039
(213) 666-7968, (800) HOT-
MUSIC

De Wolfe Music Library

[SFX, Signatory PM]
25 W. 45th St.
New York, NY 10036
(212) 382-0220, (800) 221-6713

Dorsey Productions

[SFX]
2453 E. Virginia Ave.
Anaheim, CA 92806
(714) 535-3344, (800) 735-4366

Firstcom/Music House

[SFX, Signatory PM]
13747 Monfort Dr., Suite 220
Dallas, TX 75240
(214) 934-2222, (800) 858-8880

Gefen Systems

[SFX, Buyout PM]
6261 Variel Ave., Suite C
Woodland Hills, CA 91367
(818) 884-6294, (800) 545-6900

Hanna-Barbera Sound Effects

[SFX]
Distributed by Interlock Music
Dept.
Box 4542
Chatsworth, CA 91311
(213) 461-2500

The Hollywood Edge

[SFX]
7060 Hollywood Blvd.,
Suite 1120
Hollywood, CA 90028
(213) 466-6723, (800) 292-3755

Hollywood Film Music

Library
[Signatory PM]
11684 Ventura Blvd., Suite 850
Studio City, CA 91604
(818) 985-9997

James & Aster

[SFX, Signatory PM]
115 E. 23rd Street
New York, NY 10010
(212) 982-0300, (800) 572-2236

Killer Tracks

[SFX, Signatory PM]
6534 Sunset Blvd.
Hollywood, CA 90028
(213) 957-4455, (800) 877-0078

Manhattan Production Music

[SFX, Signatory PM]
311 W. 43rd Street, Suite 702
New York, NY 10036
(212) 333-5766, (800) 227-1954

Metro Music

[Signatory PM]
645 West End Avenue
New York, NY 10025
(212) 799-7600

MusiCrafters

[Buyout PM]
Box 595
Montgomeryville, PA 18936
(215) 368-8863

Musikos, Inc.

[SFX, Buyout PM]
2121 Commonwealth Ave.,
Suite 102
Charlotte, NC 28205
(704) 333-6900, (800) 627-1012

Network Music

[SFX, Signatory PM]
110 Via Frontera
San Diego, CA 92127
(619) 451-6400, (800) 854-2075

NFL Films Music Library

[Signatory PM]
330 Fellowship Rd.
Mt. Laurel, NJ 08054
(609) 778-1600

O'Connor Creative

[SFX]
Box 5432
Playa Del Rey, CA 90296
(310) 827-2527

Omnimusic

[SFX, Signatory PM]
52 Main Street
Port Washington, NY 11050
(516) 883-0121, (800) 828-OMNI

Philadelphia Music Works

[SFX, Buyout PM]
Box 947
Bryn Mawr, PA 19010
(215) 825-5656, (800) 368-0033

Producers Sound Effects Library

[SFX]
8033 Sunset Blvd., Suite 289
Hollywood, CA 90046
(818) 707-EFXS, (800) 826-3397

Production Garden

[SFX, Buyout PM]
2411 NE Loop 410, Suite 132
San Antonio, TX 78217
(512) 599-9439, (800) 247-5317

Promusic

[SFX, Signatory PM]
6555 NW 9th Ave., Suite 303
Ft. Lauderdale, FL 33309
(305) 776-2070

Prosonus

[SFX, Buyout PM]
11126 Weddington Street
North Hollywood, CA 91601
(818) 766-5221, (800) 999-6191

QCCS Productions

[Buyout PM]
1350 Chambers
Eugene, OR 97402
(503) 345-0212

River City Sound

[Buyout PM]
Box 750786
Memphis, TN 38175-0786
(901) 274-7277, (800) 755-8729

Signature Music

[SFX, Buyout PM]
Box 98
Buchanan, MI 49107
(616) 695-3068, (800) 888-7151

Soper Sound Library

[Buyout PM]
Box 498
Palo Alto, CA 94301
(415) 321-4022, (800) 227-9980

Sound Ideas

[SFX, Signatory PM]
105 W. Beaver Creek Rd.,
Suite 4
Richmond Hill, Ontario, L4B-1C6
Canada
(416) 886-5000, (800) 387-3030

Sounds Interesting

Productions
[Buyout & Signatory PM]
922 Massachusetts Ave., Suite 12
Cambridge, MA 02139
(617) 876-1646

Southern Library of Recorded Music

[Signatory PM]
6777 Hollywood Blvd., Suite 209
Hollywood, CA 90028
(213) 469-9910

Techsonics

[Signatory PM]
709 Shadowfield Court
Chesapeake, VA 23320
(804) 547-4000

TRF Production Music

[SFX, Signatory PM]
1619 Broadway
New York, NY 10019
(212) 265-8090, (800) 899-MUSIC

27th Dimension, Inc.

[SFX, Buyout PM]
Box 1149
Okeechobee, FL 34973-1149
(813) 763-4107, (800) 634-0091

Valentino, Inc.

[SFX, Signatory PM]
151 W. 46th Street
New York, NY 10036
(212) 869-5210, (800) 223-6278

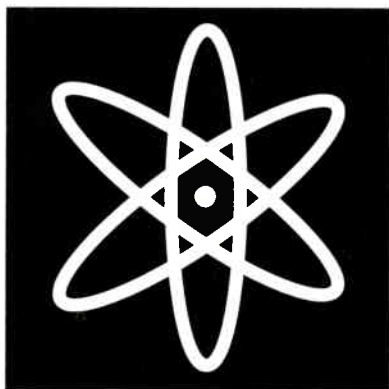
Zedz Music

[Buyout PM]
49 Hanover Street
Malden, MA 02148
(617) 324-1989

ZM Squared

[SFX, Buyout PM]
Box 2030
Cinnaminson, NJ 08077
(609) 786-0612

PROGRESS.



EXPLORATION. DISCOVERY. INNOVATION.

Only one music library captures the spirit of scientific endeavor with music which is not only highly contemporary but communicates the full range of human emotion as well. To hear it for yourself, please call 1-800-828-6664.

O M N I M U S I C



The fine art of library music



52 Main Street

Port Washington

New York

11050

USE READER SERVICE CARD FOR MORE INFO

THE BIGGEST NAME IN PRODUCTION MUSIC JUST GOT

The New **BMG** Production Music Library on the  Label

BIGGER

TRF has been in sync with the industry's music needs for more than 60 years. Today, we provide over 50,000 selections on the highest quality, digitally recorded compact discs, covering every conceivable category and style. That's how we've built our reputation, how we got the RCA Label, and how we continue to give you the biggest and best selection available.

TRF
PRODUCTION MUSIC LIBRARIES

THE SOURCE

See us at NAB booth #20156.

Write, call or FAX for your free music sampler and catalogs. TRF Production Music Libraries, Dept. MX 492
1619 Broadway, New York, NY 10019, (212) 265-8090, or toll-free (800) 899-MUSIC. FAX: (212) 956-3039.

ample, a needle-drop fee for a bed used on a local radio spot may be as low as \$25; however, if that same piece of music is spotlighted in a network television program or theatrical film release, the license fee would undoubtedly be much higher. Libraries offering music on a licensed basis generally distribute music CDs for a nominal charge (usually \$10-\$15 per disc—not including usage fees), or provide a collection of CDs as part of a blanket license. As an alternative, some companies will loan discs on an "approval" basis, allowing the producer to audition the disc(s) before committing to a license. The latter practice is common with specialty CDs—such as historical, classical, international or ethnic music—when there is only an occasional need for such material.

Choosing the right production music library requires some research. You have to find a library whose music and use arrangements best fit your needs. Buyout, per-use and blanket licenses all afford different advantages and disadvantages, depending on your particular situation, and it's best to weigh all the facts before you decide. In some instances it may be preferable to have a little of both worlds, by using a buyout or long-term license library for everyday "bread-and-butter" production chores, and adding occasional needle-drop cuts for variety. Of course, there's no law that says you can't use two or more different libraries—as dictated by your budget and/or production needs. In fact, the ability to pick and choose from several sources provides the greatest possible flexibility for the producer.

Some decisions are simple: For example, a hot set of 30- and 60-second jingle beds is an inappropriate choice for the dramatic film producer. The subjective evaluation of the quality of a library's offerings is a more difficult question—after all, no one knows your musical needs better than you. Fortunately, all the companies listed in this report will provide demos upon request.

Sound Effects

Like production music libraries, sound effects collections have improved immeasurably over the past five years. The emergence of portable DAT recorders has increased the quality of field recordings. And recently, more and more film studios and large production houses have begun releasing

their collections on CD for commercial sale. Today there are dozens of sound effects libraries—literally hundreds of discs—offered by various companies serving the professional audio market.

With so many SFX CDs available, one problem concerns the logistics of dealing with the sheer numbers of discs and tracks. Many companies now provide some sort of track search/cross-reference database program with the libraries, either as an option or in addition to the printed catalog/index that comes with the library.

Third-party suppliers—such as Gefen Systems (Woodland Hills, Calif.) and Leonardo Software of Los Angeles—offer database software that can cross-reference, control and retrieve discs from several libraries of different companies, working with the Sony CDK-006, a CD “jukebox” player with the capacity to handle up to 60 discs. Gefen also offers the “SFX Log,” a directory in book form that lists and cross-references the sound effects available from most major libraries.

The recent popularity of CD sound effects libraries probably stems from that same availability of affordable—yet high-quality—recording gear that spawned the project studio over the past decade. Armed with a modest recording setup, some MIDI gear, and a music and sound effects library or two, it is possible to do an impressive (i.e., profitable) amount of film/video scoring, sweetening or radio production work, even within the confines of

the smallest control room.

Another factor in the popularity of CD SFX is the ease with which they can be manipulated in the digital domain. After loading sounds into a sampler or disk-based editing system, effects can be cut, spliced, extended, looped, pitch-shifted, reversed or all of the above. Later, it is a relatively simple matter to fly these new effects into a mix, synched to SMPTE time code or triggered by a MIDI sequencer. Indeed, a sampler or workstation system also provides a handy solution to the problem arising when you want to use two effects from the same disc (i.e., meadow ambience

and cows mooing) during a live mix.

Once you've used sound effects libraries for a while, you're almost certain to want more. Either the discs you have don't have what you need, or you simply require more variety. A car horn from a Fiat 500 doesn't sound like that of a Bentley, while the same holds true for Evinrude and steamboat engines, etc.

A recent trend is the advent of highly specialized mini-libraries—such as the Sound Ideas “Wheels” (automotive sounds) set, Dorsey's “The Works” (2,800 mechanical and industrial sounds) or the Prosonus Foley Disc



THE GENERAL 6000 SERIES

The new standard in Sound Effects Libraries

- ★ 6000 all **New** digital effects
- ★ 50 hours of recorded sound
- ★ 40 compact discs
- ★ **New &** expanded general sound categories
- ★ **Special Feature:**
Award-Winning Sound Designer Collection

Call or Fax today for more details

U.S.: 1-800-387-3030

Canada: (416) 886-5000

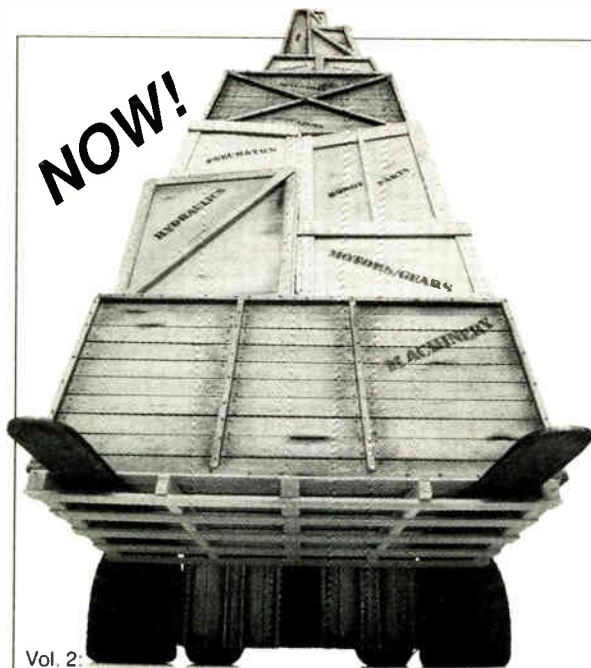
Fax: (416) 886-6800

NAB Booth #12906

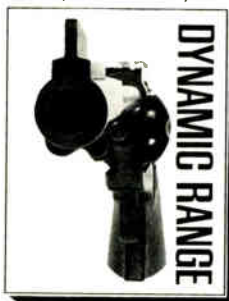
105 West Beaver Creek Road
Suite 4
Richmond Hill, Ontario
CANADA L4B 1C6



**CDs offer quick
cueing and the ability
to rapidly audition
selections: two
obvious advantages in
a fast-paced
production
environment.**



ALSO AVAILABLE:
Vol. 1 (Guns & Bullets):



heard in:
Terminator II, Godfather III, Naked Gun 2½, Body Parts, Bill & Ted's Bogus Journey, Billy Bathgate, McBane
and on TV in
Tales from the Crypt, Medal of Honor, America's Most Wanted, True Blue, Star Trek TNG
and more!

"Dynamic and powerful!"
— Alan Murray, Warner Bros. Studios
"Top quality effects!"
— Gary Rydstrom, Skywalker Sound
"The best rics, ever!"
— Dane Davis, Danetracks
"Superb!"
— Alan Howarth, Electric Melody Studios
"It's a must!"
— Steve Flick, Weddington Productions
"Can't imagine anyone not using it!"
— Eugene Gearty, Sound One

Vol. 2:

THE WORKS

SOUNDS OF MOTION, ACTION AND FORCE

Ten Compact Discs of actions, mechanisms, machines and motors including Levers, Latches, Ratchets, Stresses, Buttons, Switches, Solenoids, Signals, Pneumatics, Electrical Effects, Servos, and extra-long Industrial Backgrounds.

Sonic Boon
DIGITAL SOUND EFFECTS

Professional Sound Effects Libraries on
Compact Disc, DAT, Optical and M/O Discs.
Dorsey Productions, Inc. 2453 E. Virginia Ave., Anaheim, CA 92806 (800) 735-4366

USE READER SERVICE CARD FOR MORE INFO

Memorize This Number!

1-800-966-9686

This free call is your musical connection!

- Knowledgeable Sales Staff
- Courteous Service
- Fast Delivery
- Major Brands
- Leasing and Financing available
- Specializing in Keyboards, Multitrack, Software, and Signal Processing
- Fax us your wish list

Get ready for the 21st Century!

Call Century Music Systems Now!



**CENTURY
MUSIC
SYSTEMS**

(footsteps)—that can be added as an adjunct to a general SFX collection.

Additionally, many companies now offer discs from their libraries on an *a la carte* basis. In such a case, you can just buy what you need, whether it's weather, household, transportation, animals or other sounds.

Responding to market requests, many companies now offer longer effects for background ambience. Though somewhat outside the realm of this article, an increasing number of companies are releasing sound effects in the CD-ROM format, ready for loading into digital samplers of all sorts.

Most sound effects CDs tend to fall within the \$30-\$60 (each) price range. While this cost may seem somewhat steep, a decent sound effects library can be had for about the cost of a quality studio microphone. Of course, when you consider the time required to go out and record a bunch of crazed bull elephants, perhaps the price isn't so bad after all.

The list of production music and sound effects libraries on page 79 includes firms having production music and/or sound effects collections on CD, ranging from small "boutique" suppliers to large operations with hundreds of discs from several libraries. Addresses are listed so you can contact the companies directly for additional material and/or demos. ■

—FROM PAGE 77. MULTIMEDIA SOUND EFFECTS computer. Additionally, the resulting customized audio can be used in both traditional and computer-based production environments.

The following products were introduced at the Microsoft MPC Conference last November or at the MacWorld Expo in January.

MacroMind•Paracomp's (San Francisco) **ClipMedia Volume 1** is a CD-ROM with graphics, animations, video, sounds and music for use in MM presentations. Music is licensed from KillerTracks' production library; sound effects come from Hollywood Edge. It includes about 55 30-second clips. The PC version contains WAV files in 8-bit, 22kHz stereo and 11kHz mono. A separate Mac version containing AIFF 8-bit, 22kHz stereo files has also been released. ClipMedia elements may be used without additional licenses, except for music used for broadcast—contact Killer Tracks for rates in such applications. ClipMedia is priced at \$399. Killer Tracks has also released

three audio CDs of music and effects for multimedia use.

Passport Designs' (Half Moon Bay, CA) **Media Music Sampler** is a CD-ROM with 20 clips of original music from five seconds to two minutes in length in 16-bit CD-Audio (44.1 kHz), 16-bit AIFF (44.1 kHz), 8-bit mono AIFF (22 kHz), 8-bit mono SND (22 kHz) and MIDI formats, for the Mac. A similar CD-ROM is available for the PC. The Sampler disk is available for \$99. Also announced are plans for additional volumes of Media Music on CD-ROM, priced at \$395. Royalty-free use is included for presentations "used for non-commercial distribution." An additional license fee is required for broadcast on radio, TV or film.

SoundTrak, from Opcode Systems (Menlo Park, CA), is a Mac CD-ROM with 150 pieces of original production music in MIDI file and 22kHz digital audio formats. Music titles can be searched by category, played and edited via a HyperCard front end. Designed for use without royalties for non-broadcast applications, SoundTrak is scheduled to ship later this year at a price of \$395.

From Compact Designs (San Fran-

cisco) comes **PROclaim!**, a Mac-based CD-ROM containing QuickTime video clips, backgrounds, drawings, animations, color photos and variety of background music and sound effects. The \$399 price includes royalty-free use of all content.

Applied Optical Media Corporation's (Westchester, PA) **Mediasource** is the first of a series of CD-ROMs of images and audio for the MPC platform. It includes 1,500 images and more than 90 minutes of music and sound effects. Purchasers retain rights for re-use "in computer-based presentations." Mediasource also includes "retrieval software to help the user find the right image, music piece or sound effect." Priced at \$395.

MusiClips from Voyetra Technologies (Pelham, NY) is a collection of MIDI song files that "adhere to the MIDI authoring standards for Windows multimedia extensions." No performance royalties are required. The MusiClips Collectors Edition contains over 150 songs for \$149 on IBM-formatted floppies. Also announced are plans to follow the current MusiClips MIDI editions with digital audio equivalents on CD-ROM to be mar-

keted under the "MusiClips Digital Audio" name.

Prosonus (North Hollywood, CA) offers **MusicBytes**, a CD-ROM formatted with modular production music, MIDI data, sound effects and instrument samples for MPC. Said to contain dozens of original tunes, MusicBytes is license-free and priced at \$99.95 in either MPC or Macintosh format.

Presentation Graphics Group (Beverly Hills, CA) has created **Digisound**, a CD-ROM containing more than 600 sound effects and MIDI music clips for MPC free of "royalties, licensing and clearances." The 200 music clips contain over two hours of music conforming to the MPC General MIDI format. Digisound is priced at \$180 and was expected to be available this month through Radio Shack.

HyperClips, from the Hypermedia Group (Emeryville, CA), is a CD-ROM with 1,001 animation and sound clips conforming to the MPC standard (sound effects are in 22kHz, 8-bit WAV format) and indexed in a simple-to-use graphical storage and retrieval system. No release date has been announced.

—Paul Potyten



PROFESSIONAL AUDIO AND MIDI EQUIPMENT RENTAL

NEW YORK CITY, NY, USA
Phone: 800-834-7536 or 212-691-5544 in NYC
Fax: 212-627-4763

Chris Dunn; Donna Winfield; Brian Mecaluso

NASHVILLE, TENNESSEE, USA
Phone: 615-321-5544
Fax: 615-321-0578
Patty Bossert; Paul Simmons

LONDON, ENGLAND
Phone: 081-451-5544 (from USA dial: 011-44-81-451-5544)
Fax: 081-451-8484 (from USA dial: 011-44-81-451-8484)
Nick Dimes; Colleen Garton; Pete Towner; Simon Saywood

Each location features its own very extensive inventory, friendly, knowledgeable, efficient staff with broad technical experience. All locations are contactable 24 hours a day, 7 days a week.

New USA ratecard available soon. Please return reader service card from this issue of MIX magazine to receive your copy. (See advertisers' index)

We always have a selection of well-maintained ex-rental equipment for sale. Call or fax us in New York for the latest list!

LATEST ADDITIONS TO OUR USA RENTAL INVENTORY:

- DIGIDESIGN PROTOOLS 4 track hard disk recording/editing system
- AKAI 001000 magneto optical disk recorder/editor
- SONY PCM7030 professional DAT recorder with time code
- PYGMY ADI & APOGEE A0500 stereo analog to digital converters
- KORG T1 88-key weighted workstation keyboard
- YAMAHA SY99 AWM/AFM digital synth
- MEYER HDI powered nearfield monitor speakers
- ORBAN 290Rx adaptive enhancement processor
- NEVE 33609C latest revision stereo compressor
- LT SOUND VE2+ Thompson vocal eliminator
- DIGITECH VHM5 "The Vocalist" harmony processor
- OEMETER VTMP2 microphone preamp
- TC ELECTRONICS 1140HS 4-band parametric equaliser
- SOUNDCRAFT 200 DELTA 24-4-2 mixer with sweep eq
- EVENTIOE SP2018 reverb/effects (we have the last one made with all updates!)
- AMPEX ATR102 1/2" 2-track recorder
- SONY DRE2000 digital reverb (we combed the world and finally found one!)
- BOSS SE50 stereo effects processor
- OPDQOE STUDIO 5 MIDI/SMPTE interface for MAC computers
- AKAI-LINN MPC60II latest revision drum machine/sequencer
- AKAI S1100 rack sampler with 8 meg memory and 18104 digital I/O

(Don't forget that we carry the largest selection of digital multitracks in USA)



Engineers and Producers Agree On The Versatility, Variety and Dependability of Maxell.

That's Why Over 2,000 Pros Nationwide Use Maxell Exclusively.

It's all on your shoulders. You have to create, enhance, preserve, make it work. So you do what you've done reach for Maxell. Rugged, reliable Maxell tapes for state-of-the-art performance... punish it, push it to the limit, these superb video and audio tapes just won't quit. Durable Maxell tapes for the glorious sound, the brilliant image and the superior specs you *must* have when your reputation is on the line.

You Should Demand The Best...

maxell[®]

Maxell Corporation of America, 22-08 Route 208, Fair Lawn, NJ 07410, 1-800-533-2836.

Maxell Corp. of America

USE READER SERVICE CARD FOR MORE INFO
World Radio History

Discover a digital recording universe.



There is a wonderful place where the powers of digital recording exist in harmony with the powers of digital mixing. You are there.

You have found the DMR8. Yamaha's self-contained, full-featured digital mixer and multi-track recorder. At last, recording, overdubbing and mixdown can take place without ever departing the digital realm.

The DMR8 gives you real-time automation of all mixer parameters. The recorder, the mixer and internal effects can be controlled with perfect repeatability and precision. The mixer provides digital processing with up to 32 bit resolution. And the eight-track recorder stores an astounding

is 16 times greater than that of compact disc.

On board synchronization allows the system to be expanded to 24 tracks with the addition of our DRU8, eight-track recorders. Or it can be synced to external recorders and video equipment. The DMR8 allows unlimited track combining with no audible signal degradation. And Moving Fader Automation is one of the features that are, frankly, too numerous to mention here.

The DMR8 is a flawlessly integrated, transportable unit and the sound quality it offers is unequalled.

Call Yamaha at 1-800-395-1313, ext. 100 and ask them for more information about the DMR8. Tell them

you have made quite a discovery. **YAMAHA®**

© 1992 Yamaha Corporation of America, Professional Digital Products, P.O. Box 6600, Buena Park, California 90622-6600. (714) 522-9011.



Figure A. 27x27x10 in.



20 bits of digital audio data on tape. The resulting dynamic range

THE YAMAHA DIGITAL MIXER/20-BIT RECORDER

USE READER SERVICE CARD FOR MORE INFO

city of Mafeking, site of a 217-day siege during the Boer War at the turn of the century.

Homeland of the Tswana people, black-ruled Bophuthatswana has a thriving dairy and agricultural economy, buttressed by one of the world's richest platinum lodes and legalized casino gambling in various resort hotels.

But the music has always been here; you can hear it in a farmer's voice, lilting into the morning mist as the sun rises. Paul Simon's *Graceland* put Africa's music clearly on the Occidental cultural map—an overt acknowledgment of a rhythmic debt owed by pop music for decades. Now a group of private investors is banking that a world-class—and in this case, the world's largest—professional recording studio will make Mmabatho a locus of the trend of world music.

To that end, three studios have been built, housing one each of the world's largest major consoles: a custom SSL 4000 G Series with 72 mono inputs and eight stereo inputs; a Neve VPR 96 with 80 mono inputs and 16 stereo inputs; and a Focusrite with 72 mono inputs and 16 stereo inputs. All consoles have the maximum automation systems available. There is also a New England Digital Synclavier 9600 coupled to a 16-track PostPro system. An unspecified fully digital console has already been purchased and will be installed in August, replacing one of the current consoles.

From The Ground Up

BOP Studios' sprawl was born in the somewhat more tightly clustered group of offices and studios that comprise the nearby BOP Broadcast Centre, the homeland's first high-tech venture. In 1990, its director, Jonathan Procter, commissioned the first of two feasibility studies for a group of local private investors, Sefalana Benefits Organization, to finance the development of a major studio complex. Once government approval of the development had been secured, the investors (in a mutual fund-type arrangement) financed the capital costs of construction and leased the site to BOP Studios, which has an option to buy at a later date.

Once the go-ahead was given, Procter called studio designer Tom Hidley to design the complex and

recommend someone to direct its construction, operation and technology acquisitions. Hidley suggested Andre Perreault, a Montreal engineer/producer (Men Without Hats; Emerson, Lake & Palmer). Perreault, after a stint as audio consultant for the 1976 Winter Olympics, had worked in several major California studios before returning to Montreal to direct Cinar Studios. Hidley and Perreault worked together several years earlier on a new subsonic control room design for a 1988 Florida facility that never materialized. That same design, based on Hidley's mid-'80s 20Hz concept (such as the one he built at Nashville's Masterfonics in 1986) underwent considerable revamping and further proving on a 1/10 scale model at Southampton University in the UK. It became the centerpiece of BOP Studios' design: three 12Hz control rooms.

"It's a very different kind of facility design," says Hidley, speaking from his home in Switzerland. "It's really targeting acoustic music, though the rooms are suitable to any music application.

"The 12 Hz provides an infrasonic capability," he continues. "The monitors are capable of delivering below the audible audio threshold if the source material goes that deeply. The trapping control in the design addresses 15 Hz at half its length, and to do that we used a floor trap across the front of the room—1.35 meters across—and a wall trap on the rear wall, 1.5 meters across." The traps are covered with a sheer mesh fabric in both cases, damping reverberation down to infrasonic levels.

"The result is a uniformity of pressure balance and no measurable standing waves down to that point," Hidley explains. "For years, the music industry had a safety net of frequency cutoff; tape didn't go below 30 Hz, and consoles couldn't handle phase coherency under 25 Hz. Now, new consoles handle down to 10 Hz with better phase correlation, and new digital formats are good down to 5 Hz. The same goes for microphones and even consumer audio reproduction systems, like compact discs."

It's the speakers that can't deal with infrasonic energy unless the room assists them, Hidley maintains, and that's what the BOP rooms are designed to do. "The 12Hz room is a tool designed to advise producers and engineers that

—CONTINUED ON PAGE 89

You Can Hear Right Through It.



Whether you're involved with recording, touring, broadcast, pro-audio or performing, you simply can't do better than Whirlwind's new HotBox Active Reference DI. Advanced active electronic circuitry completely eliminates low-end saturation and provides an incredibly wide band-width with virtually no signal loss. Plus there's tons of headroom; more than in any existing active DI!

The HotBox can be powered by two 9V batteries (minimum life of 500 hours), or you have the option of utilizing the 48V phantom power built into most mixing consoles. And a ground lift provides true, switchable ground isolation... even when using phantom power.

For true transformerless, totally transparent direct-box operation, the HotBox is your only real choice.

Call or write for a FREE copy of our full line catalog.

Available Exclusively from

whirlwind

Whirlwind Music Dist. Inc.

PO Box 12692

Rochester, NY 14612

716-663-8820 FAX: 716-865-8930

Our **NEW** place...

New "In & Out" Transfer Suite
Digital — Digital
Analog — Digital

...or yours.

24 Hour Worldwide Rentals
Complete packages
Full tech support
The latest in digital
The best of analog

Call 800-847-4123 toll free
in USA (212-262-2626 in NY)
for your free copy of our rate
card or fax us at 212-262-2632.

AUDIOFORCE
SOUND RENTAL LOGIC

NEW ADDRESS!

630 9th Ave., Rm. 1012, NY, NY 10036

USE READER SERVICE CARD FOR MORE INFO

YOUR 1-STOP SOURCE!

**BUY-OUT
MUSIC & EFX**

11 Libraries/39 CD's!*

- **Repro-file™** - 14 full length CD's of quality "no needle drop" music - \$69.95 ea. with a full set purchase.
- **MAX-EFX™** - Nearly 400 "most useable" real sounds.
- **E-EFX™** - Over 200 superb electronic effects.
- **Powertrax™** - Powerful thematics for AV/Video plus all the punch you need for broadcast.
- **MAX TRAX™** - A full library of 5-7 minute cuts.
- **America's Tracks™** - Historical, patriotic.
- **Classic Tracks™** - Fully orch. classical music.
- **Hot Spots™** - 192 '60's and 192 '30's.
- **We've Got The Spirit™** - A complete motivational image building musical campaign.
- **Sound Scapes™** - A panorama of visual music & sound effects.
- **Momentum™** - Corporate cheers and "jingles."

* Also reel, cassette, DAT and VHS Hi-Fi

For a **FREE**
Demo call: **1-800-HOT MUSIC**
(1-800-468-6874)

Creative Support Services

1950 Riverside Dr. • Los Angeles, CA 90039
213-666-7968

INTERNATIONAL UPDATE

The Politics of Bophuthatswana

In December 1991, in response to South African government actions toward the elimination of apartheid, the United Nations and the African National Congress lifted an 11-year-old cultural boycott against performances in that country. Paul Simon toured South Africa that month, and Whoopi Goldberg started filming *Sarafina* near Soweto. Both were caught in a storm of publicity, both positive and negative.

BOP Studios, the newest of the high-profile international recording complexes, opened for business in January 1992 as "the world's largest recording facility." It is located in the black homeland known as the Republic of Bophuthatswana, within the borders of South Africa.

The creation of the homelands was the cornerstone of South Africa's apartheid policy. In the 1960s, white South Africa established ten homelands and began assigning all black South Africans to one or another. When completed, the plan called for all blacks, numbering 80% of the population, to occupy 13% of the land. White South Africa, occupying 87% of the land, was to include all 17 major cities and manufacturing centers.

Four of the ten homelands accepted "nominal independence" (as the press referred to it at the time) in the late-1970s; six others resisted because by accepting independence, they would give up their meager rights of South African citizenship, including the right to work in the more lucrative urban jobs.

South Africa granted independence to the Republic of Bophuthatswana on December 6, 1977. The move was greeted with hostility by most of the 2.5 million black residents. And today, South Africa is still the only country in the international community to recognize the republic.

The \$25 million BOP Studios complex was partially financed by the Republic of Bophuthatswana, which received over half its operat-

ing budget from the South African government in Pretoria in 1990. Bophuthatswana claims a thriving agricultural industry, though only 10% of the total land area is suitable for farming; the majority of the republic is scrub grass. Money comes from plutonium, as the republic mines roughly 40% of the world's supply. Resorts such as Sun City attract tourists and bring in money through casinos and legalized gambling.

Bophuthatswana is black-ruled, though critics contend that President Lucas Mangope is merely a puppet of the white government in Pretoria. Mangope answers his critics by saying that the independent homelands enable his people to consolidate their political power and negotiate with South Africa from a stronger position. He is the only civilian leader of an independent homeland (the other three leaders are military officers), and by all accounts has been the most successful at creating a semi-autonomous republic. When his own military attempted a coup in February 1988, Pretoria quickly moved in and quashed the rebellion; 120 soldiers were arrested and sentenced to prison.

Change has come to the homelands recently with the slow crumbling of apartheid. Many provisions of the international economic boycott have been lifted, and a referendum on the De Klerk presidency on March 17 should determine the course of negotiations regarding black participation in the future government of South Africa.

All homelands are in favor of reincorporation into South Africa, and it is in the interests of Pretoria to encourage such a move to improve its international standing. Mangope, however, against the wishes of the vast majority of Bophuthatswana residents, has gone on record as saying that Bophuthatswana would remain independent for the next 100 years. Riots occurred in February and March 1990, demanding repatriation; government troops killed more than 30 rioters and injured hundreds, and Mangope declared a state of emergency. He has since shown a willingness toward reincorporation.

—Tom Kenny and Jeff Forlenza

—FROM PAGE 87, BOP STUDIOS

these infrasonics exist. It's lowered the threshold that previously had masked infrasonic problems. It's an empirically proven concept; the infrasonic room has to be accepted as part of digital audio technology. And I'm looking forward to the data that BOP will provide for the future."

Starting From Scratch

When Perreault agreed to take on the job of supervising BOP Studios' creation, he faced a considerable number of choices, from location to technology. Bophuthatswana is divided into seven separate geographical entities. He decided upon the Mmabatho site because of its hotels and proximity to two well-developed airfields, as well as its closeness (a three-hour drive or 40-minute flight) to the region's major city, Johannesburg.

The part of Bophuthatswana where Sun City, the resort complex made notorious by Little Steven's "Ain't Gonna Play Sun City," is located was somewhat closer, but Perreault acknowledged the potentially negative connotations that lingered even as apartheid has been officially refuted and the economic sanctions have been lifted. "Recording artists have supported Africa strongly, if not [the government of] South Africa," he says. "But when I first came here it was obvious from the changes going on that the sanctions would be lifted at some point, and that it made sense to use the arts to help Bophuthatswana take advantage of the coming boom in business." [Since this interview, Paul Simon performed several shows in South Africa, the first major American act to perform there since the United Nations lifted the 11-year-old cultural boycott.]

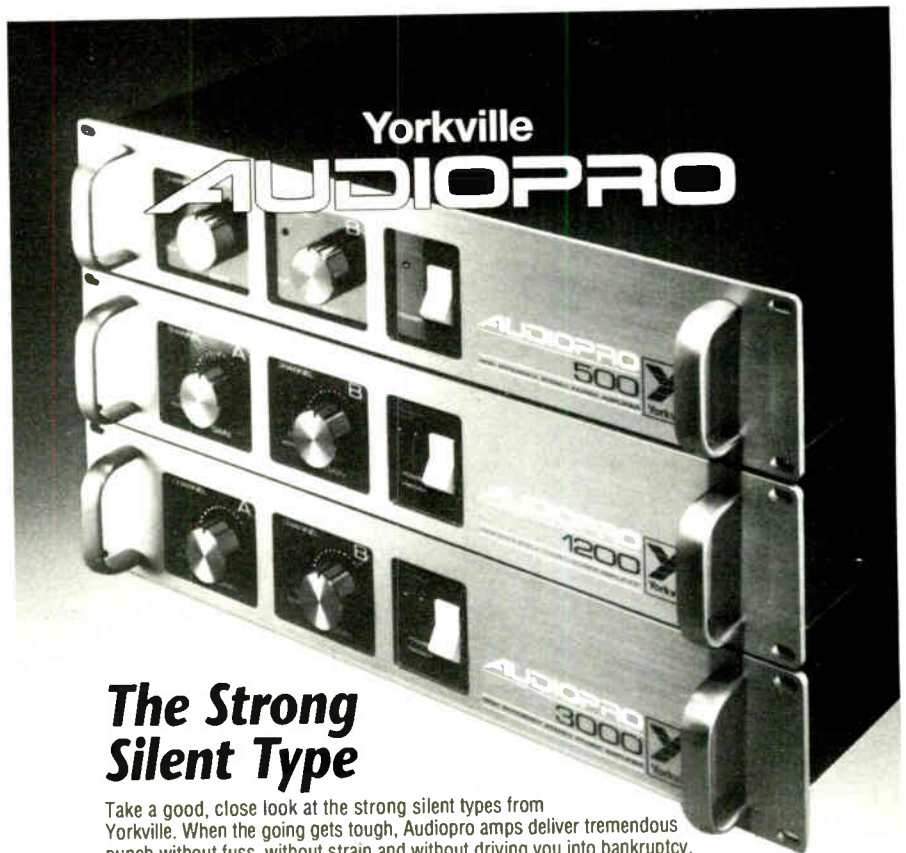
According to Perreault, it was a practical business decision to build, not a political one, and pragmatism dominated all subsequent decisions. The Mmabatho site offers mechanical isolation, and the scale on which the studio is built allowed Perreault to specify—and get—any set of reflective and acoustic values he chose. "I spoke to a lot of engineers, and on the top of their list was a room with a lot of space in which they could seriously control sound properties," he says. "That's what we got."

Construction began in mid-1991, and three studios and a front tier of offices, lounges and shops were built

with poured-concrete interior walls and brick external walls. Studio 1 is the largest of the three; it can hold up to 120 musicians, with a center-stage drum kit area (with two large iso booths on either side) radiating out into a huge main room beneath a 32-foot ceiling. Studio 2 has a similar geometry and is only slightly smaller, with a 28-foot ceiling and livelier reverb qualities aimed at rock sounds. Studio 3 is primarily a mixing room, although Perreault stresses that all three control rooms are equally capable of mix mode since all three are identical. Studio 3 has a comfortable-

sized recording area, aimed mainly at overdubs and fixes prior to mixing and DI-type recordings.

The identical control rooms have different equipment packages. Studio 1 is the Focusrite room. Studio 2 has the Neve VRP 96, and Studio 3 holds the SSL with Ulimation. The rooms were designed as much for the size of the consoles as for their acoustic properties. The desks are huge but are proportioned to the 18-foot acoustic ceilings, which hang below the 30-foot structural ones. Modifications to the consoles include a configuration of six stereo aux sends on the SSL, in-



The Strong Silent Type

Take a good, close look at the strong silent types from Yorkville. When the going gets tough, Audiopro amps deliver tremendous punch without fuss, without strain and without driving you into bankruptcy.

In the middleweight category the AP1200 has several innovative features such as a switchable sub-sonic filter and switchable internal limiters that manage the gain for maximum dynamic range. The limiters automatically prevent audible clipping while allowing the transient spikes through unaffected. If this looks interesting on paper, wait till you hear what it sounds like! You can even have the AP1200 configured to deliver its maximum power into either 2 ohms or 4 ohms. The AP1200 delivers 1300 watts* of solid, clean power for the full 12 rounds, night after night, with complete reliability and uncompromised fidelity.

With 500, 1300 or 2400 watt models, there's an Audiopro Amp to suit your needs and budget. See and hear them at your dealer soon and, oh yes, bring your checkbook. You're going to like what you hear.

*Continuous Average Power Bridged into 4 ohms

YORKVILLE SOUND LTD.
80 Midwest Road
Scarborough, Ontario
M1P 4R2

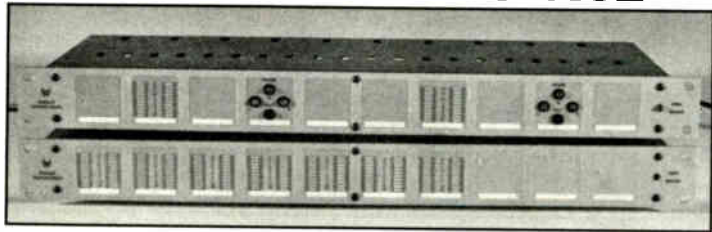


YORKVILLE SOUND INC.
4600 Witmer Industrial Estate, Unit #1
Niagara Falls, New York
14305

AUDIOPRO PULSE Micromix STAGE ELOS elite BETA

USE READER SERVICE CARD FOR MORE INFO

CHECK ALL YOUR AUDIO IN ONE RACK SPACE



Two of many possible MSM configurations.

Only the Wohler MSM Series lets you...

- Monitor levels for up to 20 audio sources at a glance. Tri-color, 10-segment LED display instantly indicates signal level and potential overload problems. Level displays are VU or PPM selectable, with DIP-switch calibration presets at -6, 0, +4, and +8 dBv.
- Detect stereo-to-mono phase cancellation problems in up to 10 stereo pairs by substituting IPI-1 indicators. Relative intensity of top (green) and bottom (red) LEDs reveals the 'phase' (polarity) relationship between signals of a stereo pair. Left and Right LEDs indicate signal present and overrange. Overage thresholds are user presettable.
- Mix phase and level in same chassis, with level metering and 'phase' indication for up to five stereo pairs. Or leave windows empty to form groups related to system layout. For example, you can configure an MSM with 3 groups of 4 channel meters each for placement under a triple video monitor.

Call or write today for details on the MSM Series, and on the Wohler AMP Series of monitor panels—amplifiers and speakers in one unit for hi-fi sound in one or two rack spaces!



Wohler Technologies

Innovative Audio Monitoring Systems

1349 Kansas Street San Francisco 94107 / 415-285-5462 Fax 415-821-6414

USE READER SERVICE CARD FOR MORE INFO

VIDEOMIX

☆ All Your Audio-for-Video Needs ☆

Audio Post-Perfection
Award Winning Mixers

123 West 18th St. • NY NY 10011
Tel: (212) 627-7700 • Fax: (212) 727-3075

Studio Manager:
Kathleen Spellman

INTERNATIONAL UPDATE

stead of the usual one per module. Also, the desk's output matrix was rearranged with Q-Sound mixing in mind. Above each console, a provision for an RGB projector is fitted, an acknowledgment that audio-for-video, while not a primary consideration in the initial design, may be an important part of the studio's future. That same line of thinking also included the NED PostPro system.

To the side of the control rooms are the main machine rooms, each of which is divided into three sections: the tape machine area, the computer/power supply room, with additional cooling and air filtering, and the amplifier room, with extra cooling for the custom Manley tube amps. The studios afford 1,800 watts per side of tube power for the main monitors and 3,000 watts per side of FM Acoustics solid-state power for the infrasonic monitors. Perreault notes that clients can specify their preference for tube or transistor power amps.

BOP makes use of three Studer D820 48-track digital tape machines, two D820 2-track digital decks, one A824 SR-equipped analog multitrack and three A820 TR SR 2-track decks. Also on hand are a Mitsubishi X-880 32-track digital machine and an X-861S (20-bit) 2-track recorder. Other machines include Sony DAT recorders and mastering/editing systems, Studer's recordable CD system and Studer cassette decks.

Adjacent to the machine rooms are smaller computer closets for the automation systems, and just beyond them are producer's offices equipped with talkback to the studio and one-way video capability. Off to the right of the control rooms are the individual studio lounges, with kitchens, bathrooms and showers. Sliding glass doors look out onto the landscaped grounds.

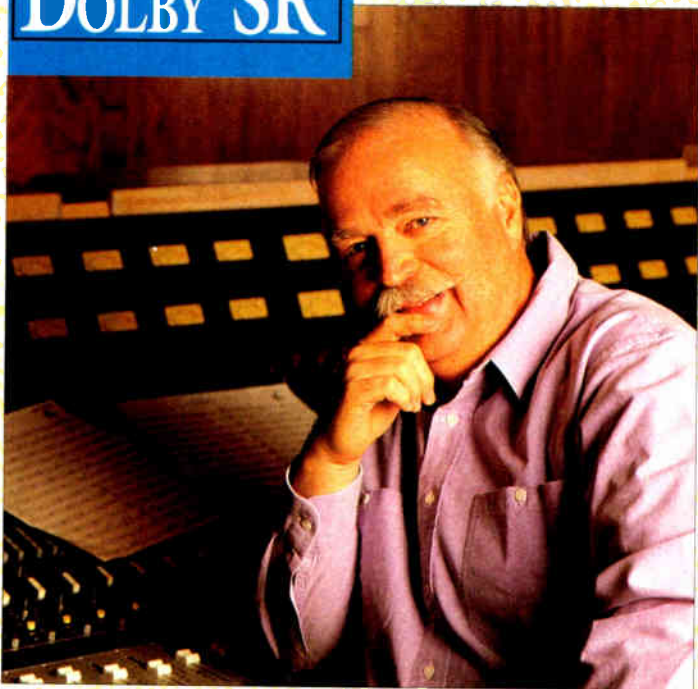
More than 140 microphones fill up the cabinets. A sampling includes four Manley 87s, four Baby Manleys, 18 AKG C-414s and four B&K 401s. The same applies to the outboard selection, with virtually every major manufacturer represented, including Lexicon, AMS, Eventide, Yamaha, Drawmer, UREI, GML and Sony.

Main monitors are Kinoshitas mounted into the walls in a vertical array configuration aimed at the central console point, on either side of the two-meter space between the control

Bruce Swedien

DEMANDS

DOLBY SR



Alan Siffen

INTERNATIONAL UPDATE

room separation windows. "They give you a wide window of image, with a ± 0.5 mm tolerance convergence at the engineer's position," Perreault explains. Other speakers include Yamaha and Tannoy.

The floors are Swedish Merbeau wood, and beneath them in the control rooms run deep troughs, which are part of the acoustic bass trap design. The troughs double as wire runs for the silver-stranded Van Den Hul cabling, miles of which are used throughout the entire installation.

Trying to avoid the laundry-list approach to the studio is difficult given the huge amounts and levels of gear. But the roughly \$25 million-plus price tag that all this engineering and equipment has generated underscores the choice of location, according to Perreault. "There's no way you could have done this for this price anywhere else," he says. "The cost of the land alone in many locations would have prohibited it."

It took a small army of 300 local workers and contractors eight months, seven days a week, to build BOP, pulling materials off the equivalent of 40 container loads shipped in from the UK. Tom Hidley's 12-man crew, headed by Mike Cronin, labored for seven months to implement Hidley's control and recording room designs. As for staffing the studio, Perreault conducted a rigorous recruiting campaign on several continents for the top positions, filling about ten slots from over 130 applications. A number of jobs will also be filled by local technicians, many of whom were trained at the nearby Broadcast Centre.

While committing to a certain amount of time on another continent is no small matter, the compensation and perks for staff seem commensurate. Along with a Western-scale salary come California-style houses and a company car, usually a BMW, which every other car in this country seems to be.

The new studio manager is Natasha Walker, former manager of London's Swanyard. Eric Stark, BOP's new chief engineer, rebuilt New York's Soundworks studio and spent the last several years constructing and maintaining comedian Eddie Murphy's elaborate personal studio at his New Jersey home. Alabama-born Stark, who

A little voice inside tells me not to give up my analog machines. There is a refinement and character with analog not available with other mediums."

Occupation

Producer, engineer, songwriter.

Recent credits

Co-produced 5 and engineered 11 songs on Michael Jackson's "Dangerous." Currently working with Michael Jackson, Sergio Mendes and Rene Moore.

Career credits

At age 19 recorded Tommy Dorsey, and hasn't stopped yet: Quincy Jones, The Chicago Symphony, Duke Ellington, Count Basie, Stan Kenton, Oscar Peterson, Sarah Vaughn, Natalie Cole, Barbra Streisand, Dizzy Gillespie, Diana Ross, Nat 'King' Cole. Awards: 3 Grammy's (8 nominations); TEC Hall of Fame.

Career direction

"I want to do more co-producing and song writing along with engineering."

On his technique

"Lately I have returned to recording directly to analog recorders, later transferring the final elements to digital for editing and storage."

On Dolby SR

"Dolby SR allows the inherent beauty of analog recording to come through without annoying hiss, hum, or print-through. I use Dolby SR on all my projects."



*Michael Jackson's "Dangerous" (Epic)
5 songs co-produced, 11 engineered
by Bruce Swedien*

Dolby SR: now over 61,000 tracks worldwide.

BIG EASY.



The M700 is a 32-buss production console series that combines sonic purity and a familiar, flexible architecture in standard configurations up to 128 input channels. Designed using a minimal number of active components, the M700's signal path is clean and efficient, which results in a natural sounding mix that's open, robust and transparent.

The ease and flexibility of the M700 Series can be extended by means of TASCAM's new Moving Fader Automation (MFA) package, a full-featured, stand-alone automation system which can be enhanced with a computer as a display terminal. The very responsive MFA package includes TASCAM-designed motorized faders with 12-bit resolution, along with capabilities for sub-grouping faders, mutes and solos.

If you haven't yet seen the remarkable M700/MFA production console in action, you can easily do so by calling (213) 726-0303. Or by writing TASCAM, 7733 Telegraph Road, Montebello, CA 90640.

TASCAM II.

© 1991 TEAC America, Inc.

USE READER SERVICE CARD FOR MORE INFO

World Radio History

brought his wife and 18-month-old son along, found that the level of technology won out over any hesitations he might have initially felt.

Surveying the Focusrite, which awaited assembly from 52 crates, Stark was more awed than intimidated by what lay ahead. "You're talking about the three biggest consoles in the world, all in one place," he says. "But as long as things are organized, which they seem to be, everything can get done. I want to keep the maintenance staff small, because a few good people can do the work of ten if the relationships are right. There won't be any problem with the environment; the climate is nice and dry. The power is stable and the ground grid looks good."

He pauses for a moment, silently switching cerebral hemispheres. "I'm still soaking in the concept of moving so far away," he admits. "But I'm not the type that gets excited. My job's to stay calm and get this done. You know, this wouldn't fly in some place like Texas like it would here. It's the locale, it's the musicians around here, it's the overall vibe. Africa still has a sense of frontier to it."

If You Build It, Will They Come?

The marketing aspects of BOP were considered as closely as the geography and the technology, according to Perreault. Four studio reps—one each in London, Los Angeles and Tokyo, as well as one at-large—and an aggressive trade media advertising campaign are already in place. "When you sit down and look at the potential clients for a facility like this, you know that it's the long-term, project-oriented artists who need to be addressed," Perreault says. Recording costs can be kept in line with other major recording centers, he adds, because of BOP's integrally planned technology/structural conception. ("It wasn't put together piecemeal, so we know what our real costs are.") In addition, there's the advantage of the lower costs of doing business in the region.

Artists already sold on the idea of working there after the official opening in March include Ray Phiri, Paul Simon's *Graceland* guitarist, whose first solo outing will feature Simon on several tracks. Other names have been bandied about in the press recently, though Perreault was not able to confirm bookings at presstime.

Record companies, publishers and other diversified constituents of the industry will also be targeted, hopefully lured by a combination of very high technology and leading-edge design; a virtually untapped talent pool of musicians from Bophuthatswana, Johannesburg and Cape Town; the potential for interaction with other artists living and working at the three-room complex; the sublime isolation that such a self-sufficient facility affords; and, last but not least, the flat-out exotic location. "If you look at the histories of top studios, like Record Plant and Power Station, when they first opened, they had this kind of magic that doesn't happen for every studio," Perreault says. "It's a mixture of technology and time and place that's special. We're trying to bring back the sense of adventure to making a record." ■

Dan Daley is Mix's East Coast editor.

International Update Bits and Pieces

A SMPTE First

The Society of Motion Picture and Television Engineers will have their first European conference this fall. It will take place during the photokina Professional Media conference, held from September 16-22 in Cologne, Germany. Topics include development prospects for film and television in unified Europe and progress in digital audio.

For more information, write to SMPTE-Deutschland, c/o Rolf von Kaldenberg, Kuhlendahler Str. 18, 5620 Velbert 15; or call (02) 053-8559 or fax (02) 053-6665.

UK

Soundcraft moved to a new location. They may now be found at Cranborne House, Cranborne Industrial Estate, Cranborne Rd., Potters Bar, Hertfordshire EN6 3JN...London-based O.L.E. Limited sold a Lightworks random access editor to London post-production house Oasis Television...Hot Nights Studios of London picked up a Soundtracs InLine 4832 mixing console with Tracmix 2 automation...Quantel Broadcast Systems is installing five Calrec Audio Q Series desks into the new BBC type-8 vehicles.

Other transactions between Calrec Audio and the BBC include a contract to install six consoles in Bush House for BBC World Service and the delivery of a Compact Series desk to the BBC Operator Training for use in a studio sound gallery...Paul McCartney's private studio in Sussex was updated with, among other additions, a Sony PCM7030.

Europe

Audio Sonic GmbH of Berlin was appointed dealer for Focusrite consoles and modular products...MM-Technology moved to Sandweg 11-13, 7595 Sasbachwalden, Germany. The company's new phone number is (07) 841-4081; the new fax is (07) 841-4078...Taurus Studio of Geneva remained at the same location but doubled their studio size after an expansion and redesign...Finland's Yleisradio added a Studer D920 A/D mixing console to their existing Studer 902 console. Installation of a Studer 994 mixing console in the radio station's van is expected in the spring...YLE, the Finnish Broadcasting Company, bought a Digital Audio Research SoundStation SIGMA for the company's film and video post-production projects.

Canada

Music West will be held in Vancouver from May 1-4. The event includes an exhibition of musical instruments and gear; a conference for participants in the Canadian recording industry; and a music festival. For more information, call (604) 684-9338...Karisma Studios (Montreal) upgraded its post-production services with the purchase of Solid State Logic's ScreenSound digital audio-for-video editor/mixer...The Canadian Broadcasting Company chose four Chyron Infini! systems for CBC stations across the country.

Japan

Digital Audio Research reports three sales in Japan: The Tokyo Broadcasting System bought two 16-channel SoundStation SIGMAs and two DASS 100s; Tokyo's Sound City also purchased a DASS 100, and TVT Akasaka (another Tokyo operation) chose the 8-channel SoundStation SIGMA...Discrete Systems' Boxer Four monitor systems were purchased by Tokyo-based Hitokuchi-Zaka Studio and the in-progress Shimoda Element complex being built on a mountain-top site southwest of the capital. ■

DON'T LET YOUR KIDS SEE THIS PHONE NUMBER:

1(800)800-4654



Because someone left this number in plain view... The crumb-crunchers put two and two together. Normal kids turned starstruck, got a recording contract, a tour, an attitude. They buy where the pros buy and get same day shipping. Gonna let this number get out? Be sure the kids have some talent.

THOROUGHBRED

America's In-stock Music
Department store
Electronics, Guitars, Keyboards,
Drums, Accessories, Rentals



2204 East Hillsborough Ave, Tampa Fl. Fax # (813) 238-5443 In Florida Dial (813)237-5597

USE READER SERVICE CARD FOR MORE INFO



LEARN THE ART OF RECORDING

THE RECORDING WORKSHOP IS THE WORLD'S LEADING SCHOOL FOR "HANDS-ON" TRAINING IN MUSIC RECORDING TECHNOLOGY. IN OUR INTENSIVE, 5-WEEK PROGRAM, YOU'LL LEARN THE CREATIVE OPERATION OF PROFESSIONAL RECORDING EQUIPMENT. WE'LL TEACH YOU THE JOB SKILLS NEEDED TO SUCCESSFULLY START YOUR CAREER AS A RECORDING ENGINEER, PRODUCER OR STUDIO MUSICIAN.

- ▶ 6 STUDIOS FILLED WITH THE LATEST EQUIPMENT: DIGITAL RECORDING TO HARD DISK, DAT MASTERING, AUTOMATED MIXING, MIDI AND MUCH MORE
- ▶ SMALL CLASSES, PERSONAL ATTENTION
- ▶ NO PREVIOUS EXPERIENCE REQUIRED

- ▶ INTENSIVE, 5-WEEK PROGRAM GIVES YOU MORE QUALITY, IN-STUDIO EXPERIENCE THAN MOST LONG-TERM SCHOOLS
- ▶ JOB/INTERNSHIP PLACEMENT ASSISTANCE
- ▶ FINANCIAL AID AVAILABLE
- ▶ LOW-COST, ON CAMPUS HOUSING

FOR FREE BROCHURE, PLEASE CALL OR WRITE TODAY

THE RECORDING WORKSHOP
1-800-848-9900 1-614-663-2510
455-X MASSIEVILLE ROAD, CHILLICOTHE, OHIO 45601



OHIO STATE BOARD OF SCHOOL AND COLLEGE REGISTRATION #80-07-0696T
© 1989 THE RECORDING WORKSHOP

adapt to a customer's changing needs by means of a "virtual" channel capacity. This means that bandwidth is offered on an as-needed basis, at a cost commensurate with usage. ISDN provides two or more independent 64 Kb/sec channels called Bearer (B) channels that can be used separately or combined for higher data rates. In addition a Delta (D) channel is used for signalling (dialing), and can also be used as a 9600-baud data channel once the connection is made on the B channels. An ISDN modem called a Terminal Adapter costs approximately \$1,000-\$2,000, while an additional \$200 device called a terminator is required for connection to the RJ-11 wall jack. With ISDN, transmitting and receiving facilities need to be within two miles of a POP. While Switched 56 is the more established system in the USA, ISDN's advantages of virtual capability are likely to ensure its widespread acceptance in the future.

Dedicated Links (T1)

The T1 format was developed in the 1960s to move voice traffic more efficiently through the existing telephone network. This new format digitized the audio, allocating 64 Kb/sec (8kHz sampling rate x 8-bit word) for each call. Twenty-four 64Kb/sec channels (called DS-0s) are time-division multiplexed (TDM) in one complete T1 circuit operating at 1.54 Mb/sec. A twisted pair that could previously handle only one call now accommodates 24 calls.

Hardware for T1 is more expensive than either PSDS system. A \$2,000-\$8,000 device called a channel bank is required, but facilities can be any distance from the POP because of the use of a repeater. Basic monthly charges can range from \$200-\$1,000, plus additional installation charges. Usage charges are based on bandwidth and distance.

While T1 service may seem expensive at first glance, studios with multiple locations can offset the higher cost by using the link for a variety of functions. In addition to audio, a T1 can carry voice calls and transfer data, thereby greatly reducing conventional long-distance telephone expenses. Take for example the T1 network connecting four LucasArts post-production facilities in Northern and Southern California (see Fig. 1).

LucasArts' dedicated interconnection allocates slices of T1 bandwidth for a variety of tasks. All intracompany

100 Reasons to Own a Quadraverb

1. It's the all-time classic reverb
2. It's fully programmable
3. Nobody tries to mix without it
4. I already own 3 and need 1 more
5. Everybody I know has one
6. Stereo in and Stereo out
7. Incredible MIDI implementation
8. Does up to 5 effects at the same time
9. Incredibly quiet
10. Great Dynamic range
11. Vocals sound incredible with Quadraverb
12. My guitar gently weeps
13. My girlfriend won't let me mix without it
14. My boyfriend won't let me mix without it
15. My producer won't let me mix without it
16. It works as well on stage as in the studio
17. 16 Bit Linear conversion
18. It's easy to program
19. It's easy to hook up
20. It works great in my MIDI system
21. It works great in my guitar rack
22. It works great with my bass rig
23. My flute sounds better through it
24. 20Hz to 20kHz Bandwidth
25. 127 MIDI sources can modulate any of 57 parameters
26. Works great in any country
27. You can take it on cruise ships
28. Everybody in Hollywood thinks it's cool
29. They use it back East
30. They use it out West
31. The North and South think it's great
32. Affordable enough for demos
33. Perfect for masters
34. It will be with you throughout your career
35. Those cute buttons with the little lights
36. Pressure sensitive programming buttons!!
37. The chorus is unreal
38. Reverb + chorus Programs are awesome
39. Pro engineers can't believe it's so inexpensive
40. They've got one in every room where I rehearse
41. I need one in my rack and one at home
42. The vocals stunk until I added the Quadraverb
43. Instant vocal doubling + chorus + reverb + eq
44. My guitar finally has a voice
45. 20 Bit processing
46. Incredible resolution for perfect reverb tails
47. It sings
48. Fills in the cracks of my keyboard
49. It's like a synthesizer for processing
50. There's no better reverb
51. The multitaps are unbelievable
52. You can delay up to 1.5 seconds
53. With everything on, there's still 800ms of delay
54. The price is unbelievable
55. All Alesis reverbs are great
56. It makes my drum machine sound real
57. It was the finishing touch on my demo
58. ...and my demo got me a deal
59. It's great to borrow, but better to own
60. Late at night under headphones I leave the planet
61. My mixes sound like movies
62. My speakers sound bigger
63. Close your eyes and you're there
64. For a successful music career
65. For birthdays
66. For Christmas
67. The auto-panner is great
68. Michelangelo would have used one
69. It gives me new keyboard sounds for free
70. It's so musical sounding
71. It's as wet as you can get
72. Use as much as you like
73. The resonators are great for guitar
74. The ring modulators are great for sci-fi
75. The sampling is a cool convenience
76. You can automate parts of your mix
77. It's a necessity
78. The specs are great
79. It makes my ears feel better
80. It makes A & R departments hear better
81. I'd be lost without it
82. I don't need it at the beach...but I might
83. It's the first thing ON in my studio
84. It's the last thing OFF
85. I love Alesis
86. Alesis loves me
87. It does 24 million instructions per second
88. It does -10
89. It does +4
90. It handles +20 peaks
91. The 32 character backlit LCD display
92. It only weighs 4.5 pounds
93. You can program advance with a footswitch
94. The graphic eq
95. The parametric eq
96. Programmable panning
97. The flanger
98. The phase shifter
99. It looks great in a rack
100. It's the all-time classic reverb

Call 1-800-5-ALESIS for more information and more reasons to own a Quadraverb

Alesis Corporation, 3630 Holdrege Avenue, Los Angeles, California 90016

USE READER SERVICE CARD FOR MORE INFO

World Radio History



voice and data communications flow over the system, with a common system of four-digit intercom lines and an interoffice computer network allowing easy file-sharing and convenient E-mail. In addition, LucasArts' Skywalker Sound division transmits high-quality audio. This enables sound mixes being prepared in Northern California to be synchronized with film projected in Southern California, allowing directors to review and supervise the work without traveling. Looping sessions in Southern California can be directed and recorded over the tielines to Northern California, saving travel time and expense, as well as precious production schedule time.

Long distance collaboration of this sort can reduce the stress involved with last-minute travel between studios. The producer can stay in the office and coordinate and supervise recording, editing, scoring and mixing in distant studios.

Bit-rate vs. Quality

Digital audio systems operating at 56 or 64 Kb/sec typically offer an audio bandwidth of 7.5-10 kHz, sufficient for an excellent voice channel or a usable

DIGITAL NETWORKS AT A GLANCE

SERVICE	CAPACITY	USAGE	TYPE	APPLICATION
Switched 56	56 kbps	Low	Dial-up	Voice-over, remote audio
ISDN	64+64 kbps & up	Low	Dial-up	Same, plus expansion capability
T1	Up to 1.54 mbps in 56 or 64 kbps increments	Medium	Dedicated	Same, plus other services

music channel. A relatively new 112 or 128 Kb/sec stereo format—taking advantage of the redundancy of stereo channels—offers surprisingly good audio appropriate for applications such as broadcast remotes. However, when the highest, CD-equivalent quality is required, a rate of at least 256 Kb/sec per pair of channels is necessary, and these higher bit rates are practical only with ISDN and T1 services. While it is theoretically possible to use multiple

Switched 56 channels to transmit the higher bit rates, it is both awkward and costly.

Global Audio Investing in the Future

Today's audio professionals are tempted by new types of hardware that weren't even imagined a few years ago, while at the same time they are constrained by tighter budgets. Thus, the long-term contribution of each



IDP is *not* a food preservative.

Integrated Dynamics Processing... the concept behind the new Symetrix 425 Dual Compressor/Limiter/Expander. Three totally *priority-interactive* processors in each of the Dual/Stereo channels provide the essential level control tools you need for any mixing, recording or sound reinforcement task. And it's dead quiet—super smooth.

Demo the new 425 and the power of IDP from the the company that has specialized in dynamics processing for over 15 years. Because, audio problems don't come in neat little boxes—Symetrix solutions do.

- **Transparent soft-knee compressor**
- **'Brick wall' infinite ratio peak limiter**
- **Noise reducing downward expander**
- **Separate LED monitoring of all functions**
- **Functional ease of operation**

Set a new standard.

Symetrix 4211 24th Avenue West, Seattle, WA USA Tel 206•282•2555 1•800•288•8855 Fax 206•283•5504

USE READER SERVICE CARD FOR MORE INFO

World Radio History

"I did a great deal of shopping around while equipping my home studio. When I found the Peavey AMR 2400 console, I was thrilled: It had all the features I needed, was easily understood, looked great, and cost half the price of any other comparable board. Now I have so much production freedom — the 2400's logical layout makes using it so easy. My Peavey AMR 2400 console is the centerpiece of my home studio."

Jerry Goldsmith
Movie Score Composer/Producer



Peavey Audio Media Research Production Series™ 2400 Recording Console

For more information please contact your authorized Peavey AMR dealer or call/write us for a free brochure on our Production Series Recording Consoles.

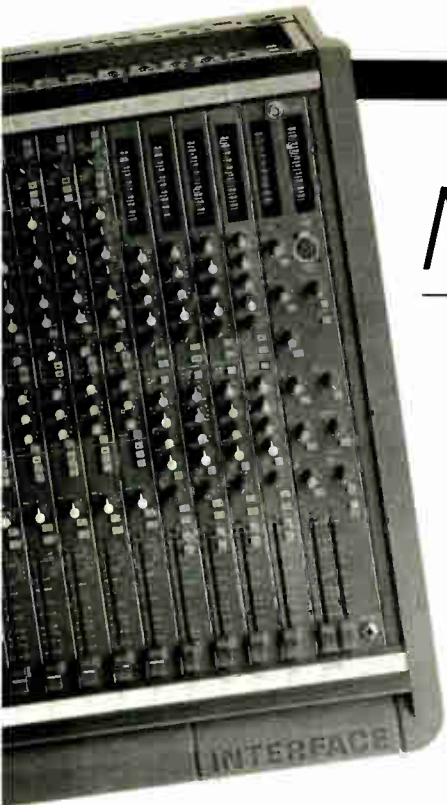
PEAVEY
AUDIO MEDIA RESEARCH™

A Division Of Peavey Electronics Corporation
711 A Street • Meridian, MS 39302-2898 • Telephone: (601) 483-5365
Telex: 504115 • Fax: (601) 484-4278 • © 1991

USE READER SERVICE CARD FOR MORE INFO

World Radio History

NEW PRODUCTS



Mark IV Interface Console

Jointly marketed by Altec, DDA, Dynacord and Electro-Voice is Interface, a modular console available in 8-16-24-32-channel mainframes with up to four subgroups. Each input strip features six aux sends, phantom power and phase-reverse switches, 4-band EQ with swept midrange bands, 80Hz filter, PFL and 5-segment LED meter. The master module includes BNC lamp socket, 20-segment LED meters, mono sum output, talkback mic jack, oscillator and 100mm faders. A 32x4x2 model retails at \$16,500.

Circle #275 on Reader Service Card

Nady 551 VR

Designed for location film video applications is the 551 VR, a wireless mic system from Nady Systems (Emeryville, CA). Equipped for belt-clip or camcorder-mounting, the receiver features a rugged metal case, removable rubber-duck antenna, two selectable VHF channel frequencies, headphone jack, balanced audio output and a line-of-sight range of 1,500 feet (or 200 feet under adverse conditions). Transmitters include a handheld mic and an ultra-compact bodypack with mini-XLR connector for any electret condenser lavalier.

Circle #276 on Reader Service Card

Brainstorm Distripalyzer

All new from Brainstorm Electronics (Los Angeles) is the SR-15 Distripalyzer, a one-rackspace unit combining a 1x5-time code distributor (with reshaping on all five outputs), 50/60Hz pilot tone stripper and time code analyzer with frame rate counter, time code reader and LEDs for drop, color and video synchronous code. Designed for studio or location work, the \$1,095 SR-15 can be set to beep when a time code error is detected, while an RS-232 port allows a full report (with address and error description) to be sent to a printer. The time code and pilot I/O are XLR jacks; video input is BNC.

Circle #277 on Reader Service Card

Furman Bass Enhancer

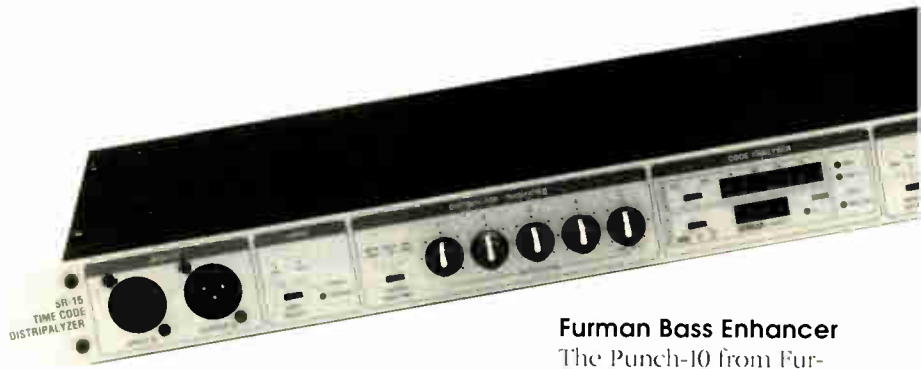
The Punch-10 from Furman Sound (Greenbrae, CA) is a subharmonic processor used to increase the bass content of any audio signal by generating a harmonic that is one octave below the lowest frequency present. The one-rackspace box has stereo inputs/outputs and a separate subwoofer out. Controls include subharmonic level, highpass filtering and an adjustable hard limiter that protects speaker systems by acting on the processed subharmonic signal. The Punch-10B version has balanced XLR connectors in addition to the 1/4-inch jacks.

Circle #278 on Reader Service Card

Marantz CD Recorder

Due to ship this month is CDR-600, a rack-mount, stand-alone CD recorder from Marantz Pro Products (distributed by Dynascan of Aurora, IL). The \$7,500 unit produces CDs that can be played on any CD player and is loaded with features: RCA and balanced-XLR analog inputs/outputs, S/PDIF and optical digital I/O, 1-bit 64x oversampled ADCs, 1-bit 128x oversampled DACs and start-stop record capability.

Circle #279 on Reader Service Card



Samson 2242 Mixer

Retailing at \$1,049.95 and offering 22 channel inputs (ten XLR mic/six stereo line) in a rack-mount package is the 2242 Portable Mixer from Samson Technologies, Hicksville, NY. Features include phantom power, six aux sends, 4-band EQ, solo, muting and a three-way-swivel back panel for connection flexibility.

Circle #280 on Reader Service Card

**Athan Recorder Refurbishing**

Athan Corp. of South San Francisco offers complete pro audio design and service support. Activities include manufacturing parts for current and out-of-production recorders (Ampex, 3M, Scully, Studer, MCI JH Series, Otari and other machines); circuit board repair (Ampex ATR-100/MM-1200 and Otari MTR-90); motor refurbishing; and complete recorder restoration. New products include non-slip, polyurethane pucks for MTR-90/100A and Mitsubishi multi-tracks, and a pinchroller for Studer A80/A800s that is said to eliminate the skew problems that occur with certain new tape formulations.

Circle #281 on Reader Service Card

The Sound Designer Series FX

The Producer's Sound Effects Library (Hollywood, CA) announces "The Sound Designer Series," with high-tech sound effects from renowned Hollywood sound designers. Individual CDs are priced at \$89.99, with substantial discounts for set purchases.

Circle #282 on Reader Service Card

ART Phantom Consoles

From Applied Research & Technology (Rochester, NY) comes Phantom, a line of professional recording/P.A. consoles with four subgroups and 16, 24 or 32 inputs. Features include 3-band sweepable EQ, eight aux sends (four pre-, four post-fader), control-room and talkback outputs, solo, muting, switchable output and monitor metering, 8-channel dedicated tape return section and, of course, phantom power on all mic inputs.

Circle #283 on Reader Service Card

**Wohler Rack-mount Monitor**

Housed in a one-rack-space package is Wohler Technologies' (San Francisco) AMP 0.9. The 2-channel, powered monitor system is ideal for applications where basic voice-quality, 120-7k Hz monitoring will suffice. The unit features RCA and balanced XLR inputs, 10-watt amp, headphone jack and mag shielding; LED meters are optional.

Circle #284 on Reader Service Card

Sound Ideas "The General"

Sound Ideas (Richmond Hill, Ontario, Canada) is debuting The General Series 6000—said to be the largest digital sound effects library project ever undertaken—with over 6,000 digital sound effects (50 hours) on 40 compact discs. Included are expanded sound categories, such as an extensive animal collection, along with transportation, crowds, long ambiences from around the world, weather, aviation, military, Foley and a collection of effects by four award-winning sound designers.

Circle #285 on Reader Service Card

Smithline 2X4S Monitors

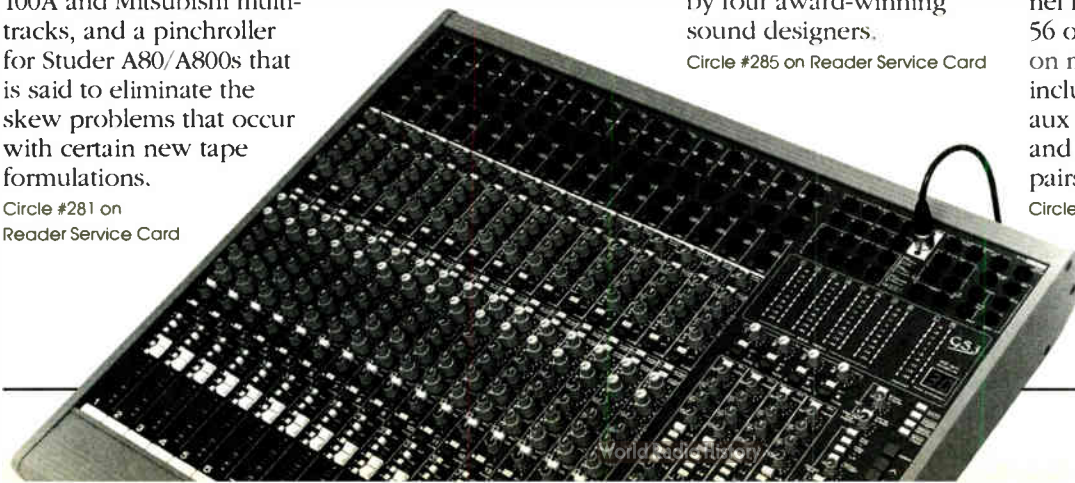
Smithline Audio of Van Nuys, CA, has improved its popular 2X4 reference monitors. The new model 2X4S features gold-plated binding posts and shielded drivers for placing the speakers near video/computer displays without causing picture distortion. Two 4-inch woofers and a 3/4-inch dome tweeter provide a rated frequency response of 70-20k Hz (± 3 dB). Price is \$700/pair; subwoofers are optional.

Circle #286 on Reader Service Card

Allen & Heath GS-3

The Allen & Heath (now distributed by DOD of Salt Lake City, UT) GS-3 is a compact, professional in-line recording console with onboard MIDI-mute automation of channels, monitor and effect send/returns. An 8-bus design available in 16x8x2 or 24x8x2 versions (an 8-channel expander is optional), the GS-3 has four stereo effects returns and two signal paths per channel for a maximum of 40, 56 or 72 inputs with EQ on mixdown. Features include 100mm faders, six aux buses, LED metering and switching for two pairs of monitor speakers.

Circle #287 on Reader Service Card





Amek Einstein

Amek (U.S. offices in North Hollywood, CA) is debuting Einstein, a radical new 24-bus console providing up to 64 inputs (with 4-band EQ and faders) in a 56-inch mainframe. Amenities include eight aux sends, the ability to meter every input and output, stereo solo and integral Supertrue automation (fader, mute and MIDI) with built-in keyboard and trackball controller. Since

the automation is also used in Amek's Mozart and Hendrix consoles, automation data is transferable. An automation-ready, 48-input board is \$28,558; an automated, 64-input console is under \$47,000. Optional is Amek's Virtual Dynamics system with gates, limiters, compressors, expanders and autopanning on each channel.

Circle #288 on Reader Service Card



Low Cost Dolby SR

Dolby Labs of San Francisco announces Dolby SRP-24, a new 24-track Spectral Recording noise-reduction unit with a list price of \$16,875—25% less than the least-expensive 24-track unit previously available. The SRP Series is designed for studios with only an occasional need to recalibrate the SR system to match tapes from other facilities, while Dolby's XP and MT systems are more suitable for facilities requiring frequent recalibration, such as video and post houses.

Circle #289 on Reader Service Card

Sanken COS-11 Update

The Sanken COS-11 lavalier microphone (distributed by Audio Interview Design of Los Angeles) now comes in a light beige, ceramic casing that reduces handling noise and improves concealment for stage or on-air use. The omnidirectional condenser element can be battery or phantom powered.

Circle #290 on Reader Service Card

HOT OFF THE SHELF

Hot Flash: The price of Roland's RSS 3-D sound processor has been reduced from \$44,500 to \$21,500. Roland also now offers leasing and rent-to-own plans. For info and a CD demo, call (213) 685-5141, ext. 337...Priced from \$14.99/pair, Musitech's Tube Coolers are push-on, reusable heat sinks, said to prolong the life of vacuum tubes. Call (403) 243-8952 or (800) 487-0668...Speaking of tubes, Whirlwind's PM Tubes is a line of high-quality tubes for audio amps, preamps and guitar applications. See your dealer or call (716) 663-8820...Version 4.0 software for the Lexicon MRC MIDI Remote Controller doubles the number of global and generic MIDI setups, as well as templates for controlling the LXP-15. Call (617) 736-0300...Radian's Model 1228

replacement diaphragms fit Altec 800 and 900 Series HF drivers (as well as the 604) and many TOA compression drivers. Diaphragms are also available for most Emilar and JBL designs. Call (714) 693-9277...The classic Electro-Voice 635A and RE50 broadcast mics are now also available in fashionable, basic black finishes for unobtrusive occasions. At your dealer now...Producing dance music? No more copyright problems with East-West's Prosamples Five, a collection of dance/industrial rhythm section loops on CD-Audio and CD-ROM (for E-III, SampleCell and Akai samplers); MIDI file sequences to accompany the tracks are optional. Call (619) 755-0599...JL Cooper's dataSync is a \$349 interface that generates MIDI time code directly from the 9-pin sync output of the

Alesis ADAT 8-track digital recorder, for tape sync without wasting a track for time code. Call (310) 306-4131...Signature Music Library's "Light & Lively" is a contemporary/classical production music CD, with small ensembles and solo instruments. Available on buyout or annual licenses. Call (800) 888-7151 or (616) 695-3068...FREE: a full line catalog of Crown microphones. Get yours by calling (800) 535-6289...Audio Precision's FASTest for the System One allows the characterization of any audio device, system or channel for frequency response, distortion and noise, in a matter of seconds, without compromising accuracy or resolution. Applications include the testing of broadcast distribution channels, production-line quality control, multitrack recorders and mixers. Call

(503) 627-0832 for details...Sypha's "The Tapeless Directory," second edition (\$37.95), details 70 tapeless audio recording and editing systems in an easily comparable format. Available through Mix Bookshelf: (800) 233-9604 or (510) 653-3307...Digidesign's Video Slave Driver™ (\$995) is a peripheral allowing users to calibrate their Pro Tools system to an external black burst (house sync) signal, for synchronizing tape and disk-based systems. Call (415) 688-0600...Suitable for broadcast, recording and sound reinforcement, Falcon Electric's UVS Plus Series are pro-quality, online, uninterruptible voltage sources (UVS) that protect against brownouts, line voltage fluctuations, spikes, surges and AC line noise. Call (818) 287-6116.

Saturn 24-Tracks

Available through Promusica Sales (Keene, NH) is the Saturn line of 2-inch 24-tracks. The Model 824 retails at \$46,000 and features auto-alignment (with storage of four tape types), 14-inch reel capacity, 7.5/15/30 ips operation, balanced XLR and Elco multipin inputs/outputs, $\pm 50\%$ varispeed and remote controller with 10 memories and programmable soft-keys. Priced at \$39,995, the Model 624 lacks auto-alignment capability but shares many of the 824's features, including 14-inch reels, $\pm 50\%$ varispeed and the 10-memory autolocator. Promusica covers both decks with a 2-year service agreement, including on-site maintenance and repairs. Circle #291 on Reader Service Card



Gefen Organizer Supports Akai DD1000

Gefen Systems (Woodland Hills, CA) has enhanced its M&E Organizer—a Macintosh database of CD sound effect and production music libraries linked to a 100-disc CD changer—for automatically loading from CD into Akai's DD1000 magneto-optical disc recorder. Previously available only for the AMS AudioFile, a "pull list" of effects and music beds can be recorded directly to the DD1000 for editing, cross-fading, time-slipping and sync to time code. The DD1000 stores on rewritable Sony mag-optical disks; and Akai's Version 2 software allows real-time time compression/expansion without pitch shift. Circle #292 on Reader Service Card



PERFECT CONNECTIONS FOR AN IMPERFECT WORLD

When the going gets tough, the tough get Neutrik.

Just look at the flawless design and Swiss-made precision of Neutrik MX HD and FX-HD connectors as an example. They are weather, dust and corrosion proof. When mated together, the contacts are completely protected against anything the elements might throw their way—from sun and water to mud, snow and ice.

Neutrik X connectors are also very quick and easy to assemble. With *only 4 parts, no screws and no tools needed as required by all competitors' products*, Neutrik X connectors can be assembled in 50% less time than

any XLR found worldwide. Less time means greater productivity that lowers your connector assembly costs.

The price? Very often less expensive than other brands that have far less to offer.

Make the perfect connection...choose Neutrik.



NEUTRIK AG Leichtenstein Tel 075 29666 Fax 075 25393	NEUTRIK USA INC. USA Tel 908 901 9488 Fax 908 9019608	NEUTRIK Marketing Ltd. United Kingdom Tel +44/71/792 8188 Fax +44/71/792 8187	NEUTRIK Zurich AG Switzerland Tel 01/7340400 Fax 01/7343891
---	--	--	--

CONNECTORS • TRANSFORMERS • PLUGS • JACKS • ADAPTORS • GOOSENECKS • TEST SYSTEMS

USE READER SERVICE CARD FOR MORE INFO.

by George Petersen

PRODUCT

CRITIQUES AND COMMENTS

Kurzweil K2000

The Kurzweil name is no stranger to the world of studio keyboards. In fact, Kurzweil's K250 sampler created quite a sensation as attendees at the 1984 AES show in New York marveled at the 250's astonishing re-creations of real grand pianos and lush human choirs. Now, nearly a decade later, Kurzweil Music Systems offers the K2000, an instrument providing better audio quality, more flexibility and power—at one quarter the cost. In fact, at a retail price of \$2,995,

K2000's 24-voice architecture with four oscillators (one sample/three waveforms) per voice, for a total of 96 oscillators. Two VLSI chips provide the power behind VAST and enable users to arrange sounds in up to three layers, or 32 layers in drum programs. Layers can be modified by 31 "algorithms," which are combinations of filters, amplitude modulation, EQ, pitch, waveforms, HF stimulation, distortion, oscillators, panning, crossfading and more. Changing the order by which individual processing occurs within algorithms produces further manipulations; these can be arranged

serially or in parallel. Need more? Each of the above DSP functions can be independently controlled by LFOs, ASRs, envelopes, proprietary mathematical functions (called FUNs), or via the onboard (or external) MIDI controllers.

By now you should get the

idea that VAST synthesis is extraordinarily flexible—a feature that should appeal to wizards doing sound design for film and video. (For a more detailed report on VAST synthesis, I suggest checking out Scott Wilkinson's article in the March issue of *Electronic Musician*.) But even without considering its synthesis capabilities, the K2000 makes for an extremely versatile performer. Like the K250, the K2000's 8 MB of ROM provides virtually instant access to its onboard sounds, which greatly speeds the usual studio chore of auditioning sounds. And Kurzweil plans to release two additional blocks of ROM-based sounds, bringing the unit's ROM capacity to 24 MB. Overall,



the entire K2000

package is priced less than the 8MB sample, RAM-expansion option originally offered with the K250. By the way, the K2000 comes with 8 MB of ROM as *standard* equipment. Times have changed.

Basically, the K2000 is a sample-based synthesizer with 61-note keyboard, programmable onboard effects processing, six assignable audio outputs, SCSI port for connecting hard disks or optical drives, and a floppy disk drive for loading sequences, programs or samples. The unit comes loaded with 200 factory sounds in ROM that are based on 16-bit linear samples.

Variable Architecture Synthesis Technology, the system's sound manipulation technique, is powerful and flexible, taking full advantage of the

the K2000's sounds are quite good, although the situation will improve markedly once Kurzweil releases the entire K250 library in K2000 format. The K2000 also has the ability to load sample data from Akai S1000 disks, which opens up another enormous resource of available samples.

I had the chance to check out some third-party sounds for the K2000 from a number of companies and was impressed by the offerings of Sacramento, California-based Stratus Sounds, which has begun porting its sample library to the K2000. One disk, containing solo oboes, was particularly nice. Another important third-party development is the release of Sweetwater Sound's (Ft. Wayne, Ind.) K2000-Diskmaker, a Mac-based program that reads and converts K250 files to K2000 disks, and can perform the same magic with Digidesign Sound Designer and SampleCell files (including CD-ROM disks).

The K2000 user interface was immediately apparent. Based on past Kurzweil products I've owned and used—K250, K1000, 1000 Series modules and even an old favorite 150 synth that takes up far too much space in my studio rack—I expected the worst. And with good reason, since up to this point the words "user friendly" and "Kurzweil products" have seldom been used in the same sentence. This time, however, the Kurzweil team really outdid themselves, coming up with a straightforward design that's logical and intuitive. Operationally, the K2000 is a breeze: Clever implementation in the software control, along with the data wheel, large LCD, soft keys, keypad and cursor controls all contribute to the K2000's ease of use. I only needed to consult the manual for advanced operations; additionally, each K2000 includes a video tutorial.

Like a number of other multi-output MIDI products on the market—such as the E-mu Proteus—the K2000's four additional audio outs can also double as insert points for patching external signal processing into the master stereo outputs. However, these will probably not find too much use in the pro studio environment, where more flexible routing options are available. The onboard signal processing is easy-to-use and offers a wide range of possi-

bilities (reverbs, chorus, delays, Leslie simulation, etc.), but the quality of the effects are not on a par with the rest of the K2000 and certainly won't cause any facilities to sell their 480s, Quantecs or AMS gear.

The K2000 includes an internal sequencer, although with a limited 15,000-note capacity and virtually no editing features, it is more suitable as a "sketchpad" than a stand-alone workstation. Incorporating a serious dedicated sequencer would have increased the complexity of the K2000, and Kurzweil wanted to keep the retail price under \$3,000. For pro studio users with plenty of top-notch sequencer programs to choose from, the lack of a sequencer is no loss. One nice touch is the K2000's ability to read and play single-track (type 0) Standard MIDI Files from a PC-compatible disk.

The unit's sound quality is excellent. The 16-bit samples are routed through 18-bit converters. The K2000 we tested suffered from a minor defect: An annoying HF whine emanated from the main outputs when the volume slider was set at less than full. Kurzweil has since corrected the problem, which was limited to units from the initial production run.

Priced at \$2,995, the Kurzweil K2000 offers a lot for the pro user. However, this is just the beginning, as promised future upgrades for the unit include a \$795 sampling option with AES and S/PDIF digital inputs/outputs (slated for shipping this spring), along with the aforementioned K250 library offerings (\$19.95 for each set of ten disks) and ROM sound boards. And when the flexibility of these options is combined with easily expandable sample RAM (up to 64 MB via standard, plug-in SIMMs) and the internal space to house a 200MB hard disk or the new floptical drives, the K2000 could become a real powerhouse for the '90s.

Kurzweil Music Systems, a product line of Young Chang America, 13336 Alondra Blvd., Cerritos, CA 90701; (213) 926-3200.

Korg A1 Performance Signal Processor

The movement began a decade ago with the PolySix analog synthesizer. Today, with the popularity of the M1,



Could
you
see...
having
a
mixer
without

Littlite

Gooseneck Lamps and Accessories

Littlite/CAE, Inc.
P.O. Box 430
Hamburg, MI 48139
313-231-9373
FAX 313-231-1631

USE READER SERVICE CARD FOR MORE INFO

SWEETWATER SOUND

Specialists in
MIDI systems and home
recording.

E-mu Systems

Proteus/1, 2, & 3 World
PROformance/1 piano module
EMAX II, EIII & EIIIx 16-bit
samplers, PROcussion module
PROteus/MPS keyboard

TASCAM

DAT machines, Mixing consoles,
Mastering decks
Multi-track tape recorders

KORG

01/WFD, 01/RW, 01/WPro,
01/WProX, 03RW, 01RW, M1, M1REX,
M3R, Wavestation EX, WSAD

Roland

Synthesizers, tone modules,
modules, drum machines,
MIDI controllers, mixers & samplers

KURZWEIL

Music Systems

K2000, K1200, Pro 76, Pro 1, K250 & RMX

All sound blocks and upgrade options for the
1000 series and the K250 are in stock

FREE Sweetwater newsletters

New Sales • Support • Modifications • Service • Upgrades

Mark of the Unicorn • Opcode • AKAI • Digidesign • Ramsa
Passport • TOA • AKG • Panasonic • Digitech • InVision
Nakamichi • JBL Studio Monitors • Fostex Recording • Lexicon
Coda • Carver • JL Cooper • QSC • Mackie Designs • Rane
Soundcraft • TAC/Amek • BBE • Crown • Anatek • Furman
Oberheim • Juice Goose • Tannoy speakers • KAT • Stewart
3M tape • Tech 21 • Macintosh & IBM MIDI software & interfaces!

Other major brands too!

Huge in-store inventory!

Our exclusive guarantee is...
if you don't like it...
we'll take it back... with no hassles!

CONFUSED? Call us for
friendly FREE advice!



We ship UPS & Federal Express or...
You can receive it TODAY if
we ship by major airline!

NO SALES TAX (except IN)
VISA • MasterCard • AMEX
COD • Trades

SWEETWATER SOUND, INC.

5335 BASS ROAD • FORT WAYNE, IN 46808

(219) 432-8176

FAX (219) 432-1758

USE READER SERVICE CARD FOR MORE INFO.

AUDITIONS

T Series and Wavestation synths and 01/W keyboard workstations, Korg is a major force in the field of serious synthesis. Over that same period, Korg has provided similarly interesting approaches to signal processing, such as the DRV-3000 which we reviewed in the November 1987 issue of *Mix*.

This tradition of innovation continues with Korg's A1, a digital multi-effects device with true stereo processing, balanced audio connections and digital input/output for manipulating DAT and workstation-based material.

old level for the single-ended noise reduction. The NR was effective in dealing with all sorts of noisy input sources, ranging from hiss-laden analog tape tracks to buzzing guitar stomp boxes. Different threshold settings can be stored with each program, and I was surprised by the ease of use and effectiveness of the noise reduction.

The back panel has MIDI in/out/thru jacks, 1/4-inch balanced inputs, +4/-20 level switching, six footswitch control jacks, a "direct out stereo" jack, send/return loop jacks, 1/4-inch and balanced XLR outputs and RCA S/PDIF digital I/O. While the A1's manual is



Standard effects include reverb, delays, pitch shift, phasing, multidelays, chorus, flange, compression, limiting, 7-band graphic EQ, 4-band parametric EQ, exciter, gating, distortion, panning and more. Up to seven effects can be chained in any order, while a touch of a button allows any effect in the chain to be bypassed for instant A/B comparison.

The A1's two-rack-space front panel is laid out simply, with many functions similar to those on other multi-effects boxes. There are several notable exceptions. Beneath the backlit, two-line LCD (that shows current chain, edit parameters, etc.) is a row of eight "double function" controls, which act as pushbuttons in play mode to turn effects on/off, and as rotary pots for altering parameters in edit mode. A large, bright LED displays program numbers and can easily be read from across the largest stage or control room.

Also on the front panel is a card slot for optional ROM or RAM cards and a "threshold" knob that sets the thresh-

extensive, no schematics are included, and I was never quite able to discern the function of the "direct out stereo" jack. Another mystery was the lack of XLR inputs—but with 25 connectors and switches on the back panel, it seems that there just wasn't room. By the way, the front panel has a second set of 1/4-inch inputs and a headphone jack.

One of the A1's most powerful and unique features is the chain edit function, which allows the replacing of effects in a preset with different effects, or arranging effects in a sequence to create new sounds. As the A1 is capable of true parallel-stereo processing, the flexibility in chaining for effects creation is what really sets the unit apart from the competition.

Types of chains include series (sequentially arranged effects); dual (completely independent left/right channels); parallel (multiple effects used in parallel—i.e., two stereo effects fed simultaneously from a stereo input—creating four signals that are internally mixed back to stereo); key-in

(the right channel is used as a key signal input to control a limiter or gate effect on the left channel); and the send/return chain (the left channel's processed signal is blended with a send feeding an external device and processed further).

Obviously, the A1 offers plenty of user control, including parameter mapping to MIDI controllers for real-time effects automation. And with numerous variations in chaining, up to seven simultaneous effects and multiple adjustable parameters within each effect, things can get real complicated, real fast. Fortunately, the dual-function controls and page-scroll buttons simplify the task, and, as a further enhancement, Korg supplements the manual with an 88-page "Effect Parameter List." Operationally, the A1 isn't so tough—the EPL just acts like a roadmap to get you where you need to be in a hurry.

The quality of the A1's effect algorithms is quite good, and the reverbs are smooth: This is eminently usable stuff. One weakness is the equalizers. This isn't so much of a problem with Korg, *per se*, but is more of an indictment of the harshness of digital equal-

izers in general. I have yet to find a digital EQ in any outboard processor that I really like. However, the A1's audio quality is exemplary, and the four-times oversampled D/A converters do a fine job.

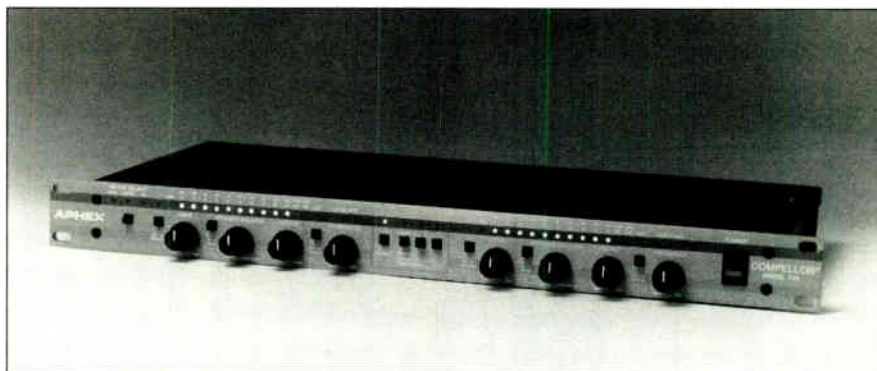
When I first heard about the A1, I was excited about the prospects of an affordable multiprocessor with digital I/O. And the digital I/O really works well, as long as you're working at a 48kHz sampling frequency. Unfortunately, I do 90% of my digital work at 44.1 kHz, and I was disappointed that

plunging rates or a 44.1kHz crystal option, this box would be the hottest thing on the market. As it is right now, the A1 is a solid unit, with excellent sound quality and parallel-processing features that make it quite an attractive performer at \$1,999.

Korg USA, 89 Frost Street, Westbury, NY 11590; (516) 333-9100.

Aphex Compellor Model 320

Over the years, the Aphex Compellor™ has become a standard, a *de rigueur* audio tool in sound reinforce-



the A1's digital ports function only at 48 kHz. If Korg added switchable sam-

plung rates or a 44.1kHz crystal option, this box would be the hottest thing on the market. As it is right now, the A1 is a solid unit, with excellent sound quality and parallel-processing features that make it quite an attractive performer at \$1,999.

Q/A:

What's been missing from your Digital Reverb?

European Sound

Processing Power & Control

Flexibility

The DRP 20 X Digital Reverb/Effects Processor uses the latest 32-bit "floating point" technology and imaginative German engineering for a clear, translucent sound that's unlike anything you've ever heard.

More than a Reverb, the DRP 20 X uses its tremendous power to produce up to 2700 different effects programs: everything from reverbs to delays, pitch-shift effects, gates and more. Each program includes up to 32 user-controllable parameters such as damping, pre-delay, room size, etc. And it's fully MIDI controllable.

Typical of the finest German technology, the DRP 20 X is solid, well-built and easy to operate. To find out what's been missing from your Digital Reverb, please write or call Klark-Teknik.

DYNACORD®

a MARK IV company

Exclusively distributed by Klark-Teknik Electronics Inc.
200 Sea Lane, Farmingdale, NY 11735 Tel: (516) 249-3660
Fax: (516) 420-1863



DYNACORD DRP 20 X DIGITAL REVERB/EFFECTS PROCESSOR

USE READER SERVICE CARD FOR MORE INFO

and leveling with a peak limiter, under program-dependent control, Compellor brings high-level signals down and low-level signals up, without any noticeable change in audio quality.

Now Aphex has expanded its Compellor line with the Model 320, a dual-mono unit with two stereo-link modes. Previously available in single-channel and stereo-only versions, the Compellor 320's ability to operate in dual-mono or stereo modes broadens the product's appeal, particularly in studio and post mixing applications.

The 320 is operationally straightforward. The rear panel contains the servo-balanced, transformerless inputs and outputs with XLR jacks, along with three-position switches for selecting -10dBv, +4dBm or +8dBm levels. Also on the back are two telco-type jacks for remote-control bypass of either channel.

Front panel controls are simple: A user merely sets the drive level, the proportion of leveling to compression, selects a slow or fast leveling speed, and sets the output to unity gain. From that point, Compellor's Dynamic Verification Gate and Dynamic Release Computer take over, constantly moni-

toring the input and adjusting the action of two Aphex VCA 1001s (one per channel for a minimum circuit pathway) to automatically control output dynamics. Each channel has bypass switches (with LED indicators) for the peak limiters; metering is via two fast-acting, ten-segment LED readouts that indicate input, output or gain-reduction levels.

While the basic use of the 320 is similar to earlier Compellors, several additional features add flexibility. "Silence Gate" freezes the gain reduction so it doesn't release when audio falls below threshold, thus avoiding a "rush" of noise during silent passages. "Stereo Enhance" widens and intensifies the stereo image of the output and is a subtle—but noticeable—effect. Finally, the stereo action can be switched to select two independent mono channels or stereo link based on leveling only or a combination of compression and leveling. The latter mode is especially well-suited in cases where absolute left/right tracking is required, such as M/S recording or surround-encoded program applications.

Having used the Compellor 320 over a period of months on a variety of studio sessions—album tracking/mixing, radio production and audio post—I became quite attached to the unit. Except in the most extreme settings, the dynamics action is undetectable, without pumping or breathing artifacts. The net effect is transparent, and similar to a hand continuously riding faders. In many instances, especially when making analog dubs from digital sources with wide dynamics, the 320 can be used in a set-and-forget mode, maximizing program output while retaining natural audio.

At \$1,350, the Aphex Compellor 320 provides a lot of control for the money, especially since its stereo-only predecessor lacked the stereo enhance, silence gating and link control, and was priced only \$55 less. With this increased flexibility, the 320 should find its way into a lot more applications, whether they be studios, post houses, film mix stages, sound reinforcement racks or broadcast booths.

Aphex Systems, 11068 Randall Street, Sun Valley, CA 91352; (818) 767-2929. ■

George Petersen lives with his wife and two musical dogs in a century-old Victorian house on an island in San Francisco Bay.

...n.d.r...
NORTHEASTERN DIGITAL RECORDING, INC.

Blending music and technology in a creative setting...

508. 481. 9322

Quality CD Remastering and Digital Sound Production

- David Bowie
- Arlo Guthrie
- Frank Zappa
- Richie Havens
- Nils Lofgren
- Paul Winter
- The Residents
- Devo
- Paul Horn
- Kingston Trio
- Rykodisc
- Rounder
- Folkways
- Omega
- Biograph
- Vanguard Classics
- Musical Heritage Society
- Newport Classic
- New World
- New Albion
- CRI
- Centaur
- Northeastern Records
- Neuma
- Titanic
- NFL Films
- Polaroid
- Lotus

2 Hidden Meadow Lane
Southborough, MA 01772
Fax 508. 624. 6437

USE READER SERVICE CARD FOR MORE INFO

Proven Success



▲ TAC MAGNUM

- * 24-Buss In-line console/32 track monitor option
- * 4 Band EQ
- * 8 Aux sends
- * 2 mute groups
- * Automation ready
- * On-board patchbay

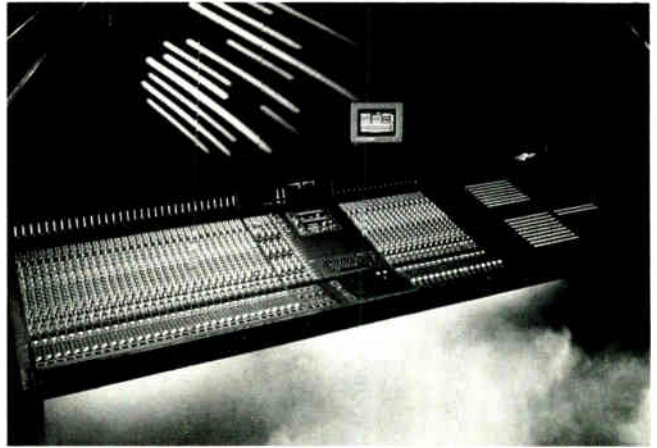
SOUTHERN CALIFORNIA'S EXCLUSIVE DEALER



▲ SOUNDTRACS IL4832

48x32 In-Line Console with 48-track monitoring. Just ask Walter Becker!

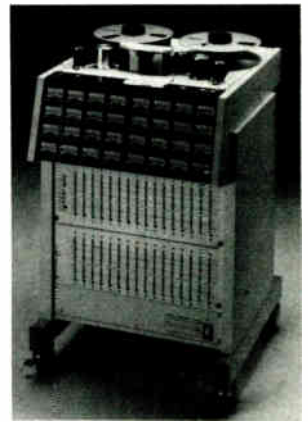
SOUNDTRACS IL3632 (pictured) also available.



▲ **AMEK MOZART RN80x32** In-Line Console with Supertrue Automation and real-time dynamics. Rupert Neves' newest creation featuring his improved EQ and mic preamps!



▲ **LEXICON 300** Digital Effects – best sounding 'verb we've heard under 10K!



▲ OTARI MX-80 2" RECORDER

- * Full-Function Remote
- * Interface to SMPTE/EBU Time-Code
- * Now with locator/stand



▲ **TC ELECTRONIC TC-2290** Digital Multi-Effects/100K Sampler – dynamic range 100dB.



619 SO. GLENWOOD PLACE, BURBANK, CA 91506. ☎ 818/843-6320. FAX: 818/843-5754



OTARI

Eventide

TANNOY

NOIŽ
MONITOR

lexicon
The Art and Science of Sound

AS WELL AS ALL MAJOR LINES

USE READER SERVICE CARD FOR MORE INFO

World Radio History

by Paul Potyten

DIGIDESIGN PRO TOOLS

Digidesign has taken a giant step forward with its newly released Pro Tools digital audio production system. This Mac II-based, hardware/software package builds on the technologies of two previous Digidesign products: the

multitrack digital audio, MIDI and mix automation, all in a random access, tapeless environment. In its basic configuration, Pro Tools consists of four components:

1. The Pro Tools Audio Card, a DSP card that installs in your Mac;
2. The Pro Tools Audio Interface, a rack-mount input/output device that connects to the card;
3. ProDeck recording and mixing software; and
4. ProEdit graphic editing software.

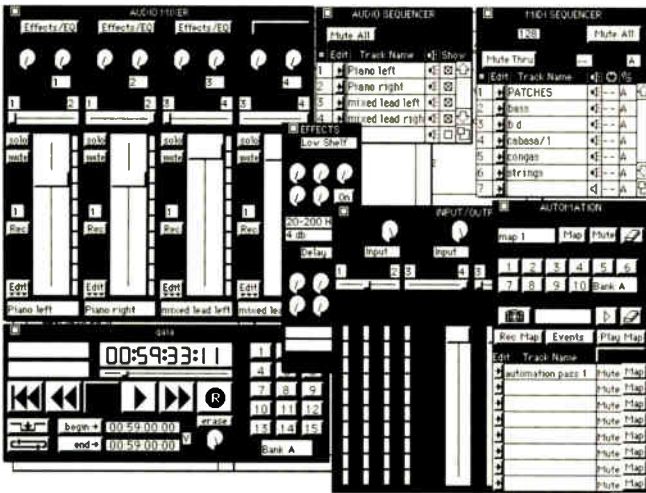
This basic system allows for simultaneous 4-channel recording and playback. However, a System Accelerator card used with additional Audio Cards and Audio Interfaces allows expansion up to as many as 16 simultaneous channels on a single Mac, and was expected to be available by the time you read this.

It's important to note here that Digidesign makes a distinction between the terms "channel" and "track." While Pro Tools allows simultaneous recording and playback of only four *channels* at a time, the user's ability to record *tracks* is limited only by the amount of hard disk space that is available. More on this later.

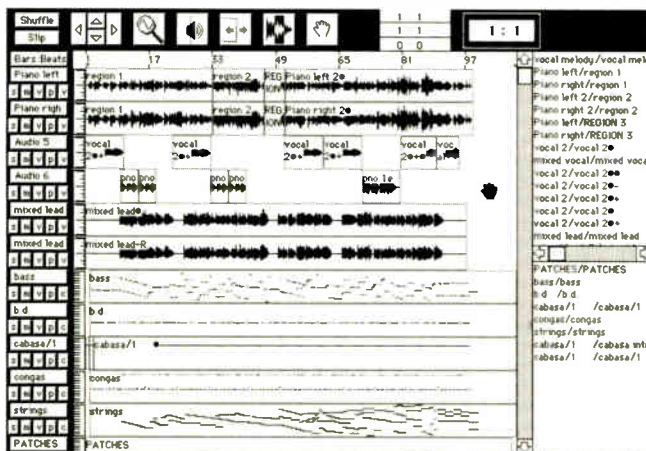
The Hardware

Each Pro Tools Audio Card incorporates two Motorola 56001 processors, giving it the power to process four channels of phase-synchronous, 16-bit audio. Installation in any NuBus slot is simple; connection to the Audio Interface is via the supplied proprietary 50-conductor cable. The Audio Interface is a 1U module with both analog and digital I/O. Analog connections are balanced, +4dBu XLRs; AES/EBU (XLR) and S/PDIF (RCA) digital ports are also standard.

The interface can be configured from the setup program to provide



Above: Pro Tools' ProDeck recording and mixing environment. Below: The ProEdit environment is designed for easy graphic editing of audio and MIDI tracks.



highly successful Sound Tools stereo recording and editing system, and Deck, a 4-track digital recording system.

Pro Tools Version 1.03 integrates

Sennheiser Microphones



Excellence Needs No Explanation.

To learn more about the Sennheiser excellence in design and engineering,
please call or write.

 **SENNHEISER®**

6 Vista Drive, P.O. Box 987
Old Lyme, CT 06371
Tel # 203-434-9190 FAX # 203-434-1759

USE READER SERVICE CARD FOR MORE INFO

MICROPHONES • HEADPHONES • BOOM SETS • RF WIRELESS • INFRA-RED TECHNOLOGY

Manufacturing Plant: D-3002 Wedemark, Federal Republic of Germany

FIELD TEST

either four channels of analog input or two channels of analog and two channels of digital input. Channels 1 and 2 of the digital and analog outputs echo each other; channels 3 and 4 out are always analog. All audio connections are made to the rear of the box; the front-panel level trim is provided for analog ins/outs from the front panel. Also on the rear panel are BNC connectors for Slave Clock in/out; these are used in synchronizing multiple interfaces (and corresponding Audio Cards) for additional audio channels.

Sample rates (44.1 or 48 kHz) are user-selectable from the setup software. A/D is 1-bit sigma-delta with 64x oversampling with 16-bit output; D/A is 18-bit with 18x oversampling. S/N is rated at >93dB A/D and >108dB D/A. Status LEDs on the front panel indicate sync mode, sample rate, and input mode, format and level.

The Software Setup

Setting up the software is a little less straightforward than the hardware side. First of all, System 6.0.5 (or higher) is required, as is a RAM minimum of 4 MB. Digidesign recommends

8 MB for better results. Also, if you have an older Mac II, now is the time to buy an accelerator. Otherwise you may be unable to record four channels simultaneously, and you will undoubtedly find the screen-redraw time to be agonizingly slow. I recently purchased a DayStar 040 accelerator from DayStar Inc. (Flowery Branch, Ga.) for my Mac II, with excellent results.

Before installing software, it's a good idea to go through your system folder and remove any time-based INITs and CDEVs that might conceivably cause conflicts, such as lockups and crashes. Routines like Responder and DiskLight, as well as some networking software, have been known to cause problems when used with Pro Tools. If you don't need it, get rid of it. You can always try putting it back in after your system is up and running.

Pro Tools can be used with or without Apple's MIDI Manager, which is included with the program. If you don't need it, you can improve system performance by not installing MIDI Manager in the system folder.

The ProDeck Recording Environment

Although ProDeck and ProEdit are two separate programs, they are designed to function together. (I highly recommend running under MultiFinder so that you can easily switch between programs.) After using the Pro Tools Setup program to configure the Audio Interface for your session, you would normally open ProDeck, the primary recording environment. Each time you open a new document and name it, Pro Tools creates a session folder into which are placed all audio files and crossfade files for that session. Signal routing is similar to that of a conventional studio: From the input/output level window, you can adjust signal level coming from the interface to the mixer module. With the basic system, ProDeck lets you record as many as 32 virtual audio tracks, although you can only hear four at a time.

Both the audio mixer and the transport window are designed to look and act like a conventional mixer and transport. Clicking on the Rec button on one or more modules puts the track(s) into record mode. The transport module offers the functions you would expect, including punch-in and -out, autolocate, loop recording and pitch control (although it only slows down the playback—you can't make it

For Parts-Accessories-Supplies

**TACK THIS NUMBER
ON YOUR WALL**

For Martin Audio-Video

1-800-421-9550

In New York: (212) 489-4750

MAKE THE AUDIO-VIDEO PROFESSIONAL CONNECTION



Here's Your Single Pro-Audio and Video Source

Consider 1-800-421-9550 your personal access code to almost any professional-quality audio or video part, accessory or supply. Dial it and you'll speak to a helpful audio-video expert, someone who has access to tens of thousands of quality audio and video components, supplies and accessories; aisle after aisle of them. He probably has what you need in stock, ready to ship...overnight if you like. And, yes, the price is right too!

**Audio video tape & accessories • Batteries • Racks & panels • Test gear
• Mics • Monitor speakers • Electronic components • Lamps & fuses •
Amplifiers • Outboard equipment • Wire & cable • Chemicals • Connectors
• Hardware • Patch bays • Tools • Switches • And much more.**

423 West 55th St.
New York, NY 10019-4490
Telephone (212) 489-4750
or (212) 541-5900
FAX: (212) 541-9139


A Video Services Corporation Company



**FREE Catalog-
Available April 1992**

USE READER SERVICE CARD FOR MORE INFO.

Introducing the Alesis RA-100 Reference Amplifier



Every link in your studio is critical to good mixes. Studio monitors, your board... even your amplifier.

Why not improve your mixes and step up to the **Alesis RA-100 Reference Amplifier**. An amp designed for the critical demands of production audio. With the RA-100 and your monitor speakers, the mix you hear in your studio is the mix you'll hear everywhere else.

The RA-100 is accurate, dead quiet, and at 100 Watts a side*, has the power to do the job. It's like a straight line between your mixer and your monitors.

On stage the RA-100's cool operation and unique protection circuitry make it ideal for PA and sound reinforcement, with the punch and clarity your performances deserve.

Plus, through ingenious circuit design the RA-100 handles peaks and overloads intelligently, so it plays louder without audible distortion.

At \$349** the RA-100 is the unbeatable value in reference amplification. Kick your old hi-fi amp out of your studio and get an RA-100 at your Alesis dealer today. You'll hear exactly what you should be hearing.

**Into 1 Ohms. 75 Watts into 8 Ohms*

***Suggested Retail Price. Slightly higher in Canada*

Alesis Corporation 3630 Holdrege Avenue Los Angeles CA 90016

ALESIS
STUDIO ELECTRONICS

USE READER SERVICE CARD FOR MORE INFO

NEW MQ™ SERIES. MASTER QUALITY DIC//DAT™ FOR THE ULTIMATE QUALITY MASTER.



DIC//DAT introduces its new MQ Series DAT tape. Master Quality media crafted with second-generation technical improvements based on extensive R&D and feedback from audio pros in the field. The one DIC//DAT perfected for professional use.

- ▶ **NEW MQ "Formulation Finish"** reduces friction and provides more efficient tape-to-head contact for superb performance even in the face of high search and rewind speeds.
- ▶ **NEW MQ proprietary DIC MicroFinity metal particle technology** creates a consistently high quality magnetic medium for uncompromising professional DAT recording.
- ▶ **NEW MQ exclusive DIC//DAT tape lengths** include an extra two minutes for tone recording, test signals and pre-roll identification—as well as the industry's only 15–30 minute DAT cassettes for small programs, demos and test tapes.
- ▶ **NEW MQ dust-busting cassette design** virtually eliminates recording errors and tape jamming due to environmental contamination.
- ▶ **NEW MQ unique window calibrations** for easier reading and more accurate time judgment.
- ▶ **NEW MQ extra-strong DIC//DAT cassette shell** made in the U.S., with new window ribs for increased stability, 100% anti-static plastic, and the industry's only fiber-filled slider for structural integrity, stands up to the most rigorous studio use.

DIC//DAT™

MQ™ SERIES

TAKING MUSIC TO THE *N*th DEGREE.
222 Bridge Plaza South, Fort Lee, NJ 07024 • 1/800-DAT-I-DIC (in NJ, 201/224-9344)



© DIC DIGITAL SUPPLY CORPORATION, 1991

USE READER SERVICE CARD FOR MORE INFO

go faster).

One useful feature is the ability to record in erase or non-erase mode. ProDeck is designed to take advantage of the benefits of non-destructive recording. In normal (non-erase) mode, one take after another can be recorded without worrying about losing the best parts of any of your takes. They are all automatically saved and named. Later you can select and combine regions in ProEdit's graphic-editing environment, and then play that playlist as a single track, either in ProEdit or in ProDeck. Changes saved in one environment are reflected in the other.

The enormous benefit of large numbers of virtual tracks brings with it the problem of how to keep tabs on the regions that are created in the process. At first, it is easy to be confused by the accumulation of playlists and regions created from repeated takes, and it takes a while to get used to the concept. As with any application with this level of sophistication, the learning curve is steep, but in this case well worth the effort.

Another advantage of working in the Pro Tools environment is its dynamic voicing architecture. Even though each Pro Tools subsystem is capable of playing back only four simultaneous voices of audio, it is possible to have many more than that number of playlists play back successfully. As with many MIDI synthesizers that intelligently allocate a finite number of voices, Pro Tools lets you prioritize voices, and when a hole opens up in a particular track playlist, its voice is temporarily relinquished and the track playlist with the next-highest priority takes over. This offers significant benefits not only in music applications, but also in film and video post-production where many virtual tracks, each containing its own level, pan, EQ, effects, etc., can be prepared and assigned to a much smaller number of "shared" voices. For complex projects it might take some serious planning in the pre-production stage, but as one becomes more familiar with the Pro Tools environment, certain preferred ways of working become increasingly clear.

ProDeck provides plenty of flexibility in the ways it allows you to create and assemble tracks. In addition to the recording options offered, both ProDeck and ProEdit permit stereo and

mono Sound Designer, Deck, Opcode's Studio Vision or Passport's Alchemy files to be imported into a session. But that's not all. Any standard MIDI file can be imported into ProDeck's MIDI sequencer—an excellent way to create a bed for overdubbing audio tracks. And MIDI tracks can even be recorded directly from ProDeck, although the editing features are much more limited than those of a pro-level sequencer.

Switching to ProEdit

When it's time to assemble and edit your tracks, you'll probably want to use ProEdit's graphic environment, which shares many of the features that Sound Tools users have come to know. But ProEdit allows viewing an unlimited number of audio and/or MIDI tracks at one time—not just a stereo pair of audio tracks. This simplifies the cutting and pasting of regions from several tracks to create a flawless performance on a single track.

The non-destructive editing paradigm is in effect here as well as in ProDeck, so you can expect to create many more regions in the process of assembling your tracks. A set of tools allows you to select and move regions, zoom in or out, trim them and scrub them. Two scrubbing options are offered: positional and loop scrubbing. Positional scrubbing plays a region either forward or backward at maximum speed equal to real time, and loop scrubbing plays it forward repeatedly over a user-selectable range while you hold the scrub tool over a spot on a region. The first method was more useful, but less intuitive than scrubbing in Sound Tools. Why? A major difference between ProEdit and Sound Designer II is that the former reads digital audio directly from the hard disk rather than RAM. Therefore, the two scrub operations have a very different feel and sound. ProEdit's method offers the ability to scrub across multitrack audio files.

A feature unique to ProEdit is the ability to choose between slip and shuffle, two modes that are useful in a variety of applications. The shuffle button causes regions that are dragged from a playlist or from another track into the desired track to "snap" to the edge of an adjacent region. When in shuffle mode, regions occur one after another in a track without overlapping or creating gaps between them. In slip mode, regions can be moved freely

Valley Sound

Sales & Rental

... Is



...L.A.'s fastest growing Pro Audio Dealer/Broker.

We offer fine products like: **AKG, ALLEN & HEATH, CREST, DBX, DRAWMER, MOGAMI, SUMMIT AUDIO, TAD, TANNOY...** and many others! We also buy/sell USED gear.

We are also proud to announce

exclusive U.S. Distribution for **Shep Associates Ltd.** Classic EQ/Mic Pre's, built by Neve™, are now manufactured under license by **Shep Associates Ltd.** to original design specs, totally discrete, Mic-Pre + 4-band EQ.

"The Classic"
31105 Module+
32264 Limiter,
now available

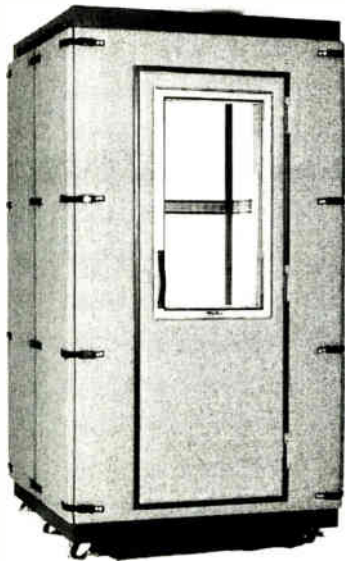
from....

Valley Sound

Sales & Rental

(818) 842-6500
NAB Booth #16785-86

WhisperRoom INC.
MUSICIAN'S ISOLATION ROOMS



Various Sizes ★ Portable ★ On Wheels
Assemble/Disassemble in Minutes
Quiet Ventilation System.
Endorsed By: BMG Studios, NY
Tel. (410) 997-1440 ★ Fax (410) 997-1812
9139 Red Branch Rd. ★ Columbia, MD 21045

USE READER SERVICE CARD FOR MORE INFO.

**CD-LIKE
QUALITY
ON CASSETTES!!**

**KLARITY[®]
CASSETTE**

**REAL-TIME
CASSETTE DUPLICATION**

High-Speed Duplication
500
New! CASSETTES
For Only **\$615.00**

**"THE
ULTIMATE
RESPONSE"**

**Waterville, ME 04901
1-800-458-6405
207-873-3911**

FIELD TEST

without the magnet-like behavior they have in shuffle mode. Regions can have space preceding or following them, and they can be placed to overlap portions of other regions.

Each audio and MIDI track has a solo button, a mute button, a volume slider, a pan slider, an output pair se-

top one will play. (It will relinquish its control of the voice to another track whenever it is empty.) Needless to say, a clear understanding of this important concept is helpful *before* launching into an important editing session.

ProEdit's crossfade features are also different from those found in Sound Tools. A "Crossfade Regions" command allows you to crossfade between

Mix Automation with the CS-10

ProDeck offers a great deal of flexibility in recording and playback of automated mixes, and the JL Cooper CS-10 Control Station is designed to make that process easier. Like its junior version, the CS-1, the CS-10 features a front panel with a scrub wheel, transport controls, zoom keys and user-programmable F-keys. But, in addition, the CS-10 features eight faders and six pots, each of which can be programmed to map to the faders and knobs shown on the ProDeck screen. Sets of maps can be saved, so you can control an entire mixing board from the CS-10. Control is very smooth and precise—in fact, proprietary interpolation algorithms result in true 24-bit resolution. (Since playback of audio takes precedence over screen redraw, the result is jerky fader movement onscreen. However, this is not reflected in the audio itself.)

Mapping controllers is simple, and both the faders and knobs move smoothly and feel well-designed. My reaction to the scrub wheel is not as enthusiastic; it takes a lot of practice to control it accurately, and there needs to be a center detent or a "dead space" in order to more easily locate a null point. As it is now, the only way to keep from scrubbing when you are done is to look at the pair of LEDs above the scrub wheel, which both light when you reach the null position. The other problem has to do with Fader 1, which is located too near the scrub wheel. More than once I accidentally touched the wheel as I was moving the fader, resulting in aborting playback of the file. Short of redesigning the interface, a software option to disable the scrub wheel would greatly improve this situation.

JL Cooper has announced its intention to provide control of the CS-10 via MIDI, which would eliminate any Mac port problems such as the ones I encountered. (At press time, JL Cooper was said to be shipping its CS-10 MIDI Adapter.) It should also be noted that the CS-10 transport controls, zoom keys and scrub wheel also work in connection with Sound Tools. The CS-10 is a great idea for anyone who needs to do extensive track automation in the ProDeck environment. Unfortunately, due to the combination of Digidesign, Opcode and JL Cooper software and hardware I was using, the overall system promised more than it delivered. The CS-10 has a list price of \$1,295. If you just want transport control and a scrub wheel, the CS-1 is a very good deal at \$499.95.

—Paul Potyten

lector and a voice or MIDI channel selector. As in ProDeck, the audio tracks are prioritized. In this case, tracks at the top of the screen have the highest priority; those at the bottom have the lowest. Tracks may be assigned to the same voice, but only the

two adjacent audio regions. Crossfade duration, position and shape are all user-selectable and editable. When you use this command, the program computes the crossfade in RAM and writes it to disk. The crossfade document appears in a separate folder

Introducing Bryston's 4B NPB Professional Stereo Amplifier



Bryston's Model 4B, at 250 watts per channel has long been considered something of a legend in professional applications such as studio monitoring, theater and soundstage amplification, even arena and nightclub installations. Although there had been many improvements in the design over time, the basis of the 4B had remained relatively stable. Recently, however, our research showed we could make a substantial step forward in amplifier design. The result is the 4B NPB.

The power supplies employ multiple smaller filter capacitors per channel, rather than the single pairs of large filter cans as has been traditional practice. This allows better high frequency response and reduces overall losses in the supply. The wiring harness has been eliminated, and the channels plug directly onto the power supply PCB, further reducing resistance for improved current flow and better filtering.

The inputs feature a special, proprietary buffer circuit which establishes the inverting input for bridging the amplifier, and also is used for the balanced inputs, which are standard. This buffer can actually help the performance of source preamps because its input impedance is perfectly linear at high frequencies, a situation which is not always the case with power amplifiers.

Even such simple areas as the clipping indicators have been improved for more meaningful operation. The LEDs now indicate whenever there is any deviation from linearity, including shorted outputs, or strong out-of-band information, like RF or DC. They turn red during the actual presence of any distorted or inappropriate signal, however brief in duration, down to the millisecond level.

As may be seen, these differences amount to virtually a total re-design, with the purpose of further strengthening the traditional Bryston values of reliability and sonic accuracy. The performance improvement is what is really meaningful to the user, of course, and here we feel the results are most obvious, and most worthwhile. Bryston has always felt that intermodulation distortion is the main source of grain and pain in reproduced music, so we are pleased that this numerical specification has improved by about a factor of four in our new designs. The fact that this is accomplished without large amounts of feedback is testimony to the new circuitry's remarkable linearity.

If your professional requirements are sonic excellence, ultimate reliability and superb value then Bryston professional power amplifiers will surpass your every performance criterion.

Bryston Ltd., Tel: (416) 746-1800 Fax: (416) 746-0308

Brystonvermont, Tel: 1-800-673-7899 Fax: (215) 628-2970

USE READER SERVICE CARD FOR MORE INFO

World Radio History

BRYSTON

20

Year

Warranty

- A

Generation

of

Music



within the Session folder and is used when playing back that portion of the audio file. The manual explains that about one available megabyte of RAM is required for a 12-second crossfade.

If your session doesn't already have tempo information (derived from imported MIDI data), you can use the "Identify Beat..." command to create a grid of bars and beats. From that grid you can then "snap" regions to your grid and even quantize audio regions. This latter feature is great when used with the "Strip Silence" command in

that it allows you to easily and precisely adjust, for example, a less than perfectly played percussion or bass track.

ProEdit's transport control is similar to that of ProDeck, without the ability to record audio or MIDI. However, files may be imported into ProDeck, just as they are in ProEdit.

Mixing and Mastering

Once you have edited your tracks in ProEdit, you can switch back to ProDeck to mix. Here's where the system really gets deep. External effects units with digital ports, such as the

Lexicon 300, can be routed to the mixer module using the two send and return buses in ProDeck. Each module in the mixer offers two sets of internal effects as well, including a wide range of delay, chorus, stereoizing, and bandpass, peak/notch and shelf filtering.

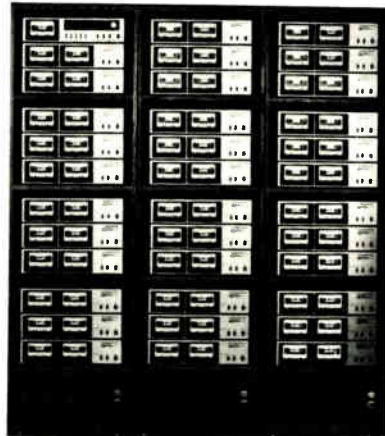
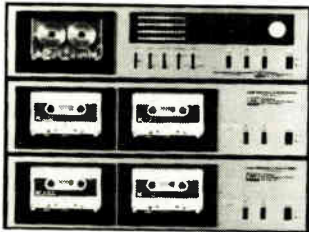
If you have a 4-channel system and have created a lot more than four tracks of audio, you may want to use the "Bounce to Disk" command. Premixed tracks, with or without automation (see below), may be combined into either a new stereo or mono track. This process leaves the original tracks unchanged and creates new audio data as well. The two main disadvantages to Bouncing to Disk are (1) it takes longer than real time to complete the command, and (2) it uses more disk space.

It is possible to build an unlimited number of automated mixes using the tools available in ProDeck. Mix data takes up insignificant disk space compared to the audio files themselves. Using the mouse to record real-time fader automation is a bit tricky, mostly due to the fact that with the mouse you can have independent control of only one parameter at a time. With that in mind, Digidesign contracted JL Cooper to design the CS-10 Control Station to make the mix-automation process easier (see sidebar, "Mix Automation with the CS-10"). However, the software lets you map any MIDI controller to any fader, knob or group as well. ProDeck also lets you capture snapshots of your entire mixing setup and "pop" or move smoothly from one mixer state to another. You can even combine snapshots and real-time automation during the same automation pass. Automations can also be edited in ProDeck in the same way that editing of audio and MIDI tracks is possible via the playlist architecture. The automation part of the program was the least intuitive for me and the most difficult to get a handle on.

Completed mixes can be played to DAT, 1630 or recordable CD directly from the Audio Interface or through your console. Better yet, using the "Master to Disk" command, you can create a digital mix in stereo or mono Sound Designer II format. Since computer hard disks do not use any error-correction schemes to cope with bad data as do DAT recorders, you are guaranteed a perfect copy when you master to hard disk. However, if you

—CONTINUED ON PAGE 181

Project Studio or Production House



Whether you want to make 50 cassettes a day or 50,000 a month, KABA makes the best real time audio duplication systems around. Thanks to our modular design, you can stack the decks to meet your needs affordably.

- Real time or double time for superior sound and efficiency
- Most flexible system available; accepts audio from any master source, 2-track or 4-track to cut duplication time in half
- Incredible 10,000 + hour transport life improves cost effectiveness
- Specialists in Turnkey Systems: loaders, cassette imprinters, labelers, packaging equipment, accessories

WE'VE MASTERED AUDIO DUPLICATION.

Try for 15 days — risk free. Phone, FAX or write to



KABA
Research & Development

24 Commercial Blvd., Novato, CA 94949 (415) 883-5041
1-800-231-TAPE FAX (415) 883-5222

USE READER SERVICE CARD FOR MORE INFO.



MORE POWER AND MORE PERFORMANCE

THE NEW DYAXIS. Now providing automated real-time EQ and Level Control for our 2 and 4 output virtual multitrack systems. Other advanced features include support of a 1 gigabyte hard drive for up to 10 hours of stereo recording, new full magneto optical capability and full sample frequency conversion.

SYNCHRONIZATION IS EASY. With the System Synchronizer and time code option, Dyaxis is a master of sample accurate time code based slave applications. Just a click of the mouse enables Dyaxis to lock to SMPTE, EBU, VITC, video, and film tach.

SUPERB AUDIO QUALITY. Through Studer Editech Corporation's own proprietary A-D/D-A converter implementation, anti-aliasing filter and analog

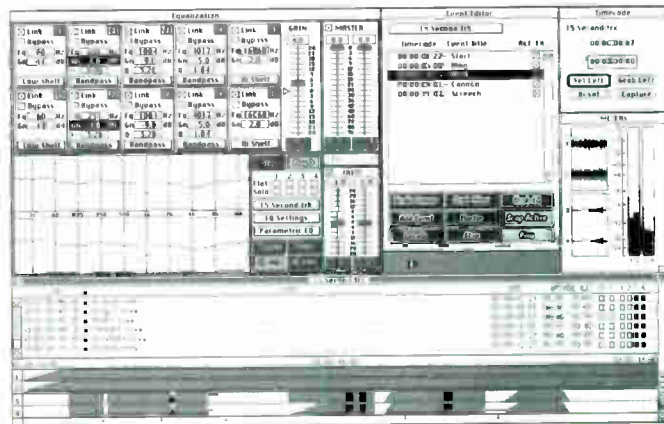
circuit designs, Dyaxis has achieved a worldwide reputation for outstanding sound quality.

RDAT. Dyaxis' integrated RDAT subsystem allows you to reliably back up 1.2 gigabytes of information on a DAT data cassette. Using our custom Studer-Backer II software, you can retrieve an entire job or a single sound effect quickly and easily.

DIGITAL COMPATIBILITY.

Dyaxis communicates with and transcodes between all major digital formats such as DASH, AES-EBU, SPDIF, PD, SDIF, 601 and more.

STUDER DYAXIS — DESIGNED FOR YOU. With Dyaxis, you not only get the most up to date digital technology available you also get free on-line service and support from professionals who care. To find out more about the right Dyaxis system to fit your specific needs, call your Studer representative for complete details.





**When the little door opens,
a world opens with it.**

Imagine.

You can give your studio clients a CD reference of the day's work. You can compile commercial spots on compact disc. You can build your own CD-quality sound effects library.

The YPDR601 makes it all possible. It is the Yamaha Professional Compact Disc Recorder. And it lets you record onto compact disc with the ease and flexibility of recording onto cassette.

The YPDR601 lets you interrupt recording whenever you want. It's the only CD recorder that allows you to play an unfinished disc, as is, on any standard compact disc player. And the YPDR601 allows you

to go back and add to a partially recorded disc. Just load the disc and continue recording.

The YPDR601 can accept multiple analog and digital formats. It provides control ports that enable hands-free recording from professional R-DATs and audio sources with timecode. And you'll be pleased to learn that the YPDR601 is as affordable as it is flexible.

Call Yamaha at 1-800-395-1313, ext. 300, for more information about the exciting YPDR601 and the entire line of Yamaha Digital To Digital products.

Isn't it amazing what one little door can do.

YAMAHA®

© 1992 Yamaha Corporation of America, Professional Digital Products, P.O. Box 6601, Bloomington, California 90622-6600. C14-522-9011



T H E Y A M A H A C O M P A C T D I S C R E C O R D E R

USE READER SERVICE CARD FOR MORE INFO

FULL SAIL CENTER ^{FOR} THE RECORDING ARTS

TEC
TECHNICAL EXCELLENCE & INNOVATION
1991
WINNER



"I wish there would have been a school of Full Sail's quality when I started in this business..."

BRUCE SWEDIEN

ENGINEER AND/OR CO-PRODUCER OF
MICHAEL JACKSON'S ALBUMS DANGEROUS,
BAD, AND THRILLER.

CAREER EDUCATION IN
AUDIO, VIDEO AND FILM
800-CAN-ROCK

3300 UNIVERSITY BOULEVARD,
WINTER PARK (ORLANDO),
FLORIDA. 32792-7429

"It's a new price point for us and the industry," says Jim Lucas, Tascam's product support manager. "It finally brings synchronization to the level that a musician working with inexpensive decks can handle."

TimeLine followed suit with its Micro Lynx, a Mac-interfaceable synchronizer with a third machine expansion card for \$2,495. "The Micro Lynx is designed to run in a single-room facility," says company president Gerry Block. "We tried to figure out the right numbers for a system of this type, given what the [project studio] market needs and what it wants to do."

Other synchronizer manufacturers, including major player Cipher Digital, are watching the market carefully and considering similar moves. As Bob Tulloh of Cipher indicates, "Everyone is trying to expand their market, and we're seeing more and more people getting into lockup, and digital equipment is making it cheaper and thus easier to get into."

MIDI Makes The Difference

The MIDI interface seems to be a critical function of sync, more so than it is for larger commercial facilities. This figures, since MIDI is much more central and fundamental to project studio operations, and always has been.

At Ruggieri Music in Manhattan, chief engineer Brett Rader uses an Adams-Smith Zeta 3 to lock both the 24-track deck and Performer sequencing software on the Mac to a 3/4-inch video deck. "With the Zeta we get instant lockup, and it converts the 30-drop SMPTE time code we stripe with to MIDI time code for the computer," Rader says. "We use the computer for virtually all the music done here, so a MIDI interface is absolutely necessary."

Rader, who used to engineer at a more traditional type of commercial post-production house in Manhattan, says the basic sync skills he acquired there working on a more sophisticated (and more expensive) Adams-Smith 2600 unit migrated with no problem to the project studio environment. And the relatively stripped down sync box he now relies on has plenty of power for the commercials Ruggieri does for a living. "The auto-punch feature is a little more cumbersome on the Zeta 3 than on the 2600," he says. "But overall, the Zeta 3 is perfect for this type of

studio and these types of productions. And it's definitely worth the difference in price."

Gary Sutcliffe, owner of Sutcliffe Music Inc., in New York, chose the TimeLine Lynx synchronizer for his project studio, justifying its higher cost by focusing on its expandability. "A lot of project studios tend to gravitate toward entry-level-type gear in that department," he says. "But I wanted something that would let my initial investment be longer term. With the Lynx, I can add modules when I need to add more machines to the lockup."

Sutcliffe doesn't use MIDI time code

for the Performer and Vision software on his Mac IIci computer, preferring to let them chase SMPTE. One recent change in the system involved buying a Sony VO9800 3/4-inch video deck and implementing house sync as his synchronization standard. "We do a lot of scoring to picture here, and I found that I really wanted to have the audio control the video," he explains. "A common practice for project studios is to have the video deck as the controller for the overall system. But by using the 24-track deck as the controller, instead of having to go offline at different points in editing, you can stay

Your New Stage Monitors



C:MAX™ Wireless Monitors

- ▼ Designed for Live Performance
- ▼ Small and Light Weight
- ▼ Enjoy Studio Quality Monitoring and Protect Your Ears
- ▼ Virtually Eliminate Feedback
- ▼ Control Your Monitor Volume and Stereo Environment
- ▼ Wired Versions of This System Also Available

The CMCI™ System, designed by RF experts, live mixing professionals, and leading audiologists, uses the patent pending C:MAX™ psychoacoustic stereo environment. This system is FCC licensed.

Leading the Way in RF Technology™



™ Circuits Maximus Company, Inc.

214 N. Park Drive
Arlington, VA 22203
703-276-0125

© CMCI 1991. C:MAX, CMCI, and Circuits Maximus Company, Inc. are service marks of Circuits Maximus Company, Inc.

USE READER SERVICE CARD FOR MORE INFO

STUDIO VIEW

constantly online and locked up. The new video deck uses an external crystal, and that way I can have house sync rather than having my synchronization be specific to SMPTE. It's a lot more convenient to have the audio driving the video. It's more expensive, but it's a more reliable system, and the client appreciates the benefits of its faster operation."

In Sutcliffe's new room, which is expected to open later this year, he plans to have the Vision-loaded sequencers and Pro Tools simply read SMPTE off the 3/4-inch videocassettes, bypassing a dedicated synchronizer. And he's also considering Vertical Interval Time Code (VITC), which is recorded in the blank space between video frames and is readable even in freeze-frame mode. (Longitudinal Time Code, or LTC, is the primary format for SMPTE in audio applications.) "The good thing is that there are a lot of options out there when it comes to synchronization and time code," he says.

In San Francisco, Eric Jensen of Jensen Sound has been working with sync for some time, originally off an EC

101 chase sync card for his Otari MTR-90 and MTR-12 decks and a JVC 3/4-inch machine. He recently added a Shadow II synchronizer and Softouch controller to the system to provide a more comprehensive lockup. "This was good for me in that the Softouch addresses the EC 101 card, and I only

wasn't something I could get away with renting on an as-needed basis."

Like most of his colleagues, Jensen's MIDI implementation is relatively extensive, but he opted to avoid MIDI as a mode of time code as a result of some negative experiences early on. "My experience has been that MIDI manufacturers are in a bit over their heads in terms of synchronization," he explains. "They come at it from an MI perspective, and that's not enough when it comes to syncing." On the other hand, he finds that he's not using a lot of the features on his dedicated synchronizer presently, simply because they're extraneous to his needs.

Overall, synchronizer manufacturers have responded to the new market but are still feeling their way, waiting for more input from a hard-to-pinpoint, growing group of project studios that increasingly are adding sync to their repertoire. Project studio owners, on the other hand, need to carefully examine the marketplace and their own client needs to best determine which sync format works best for them. The good news is that, as confusing as it might be sometimes, they now have a plethora of choices and will soon have a few more. ■

"The good thing is that there are a lot of options out there when it comes to synchronization and time code."

—Gary Sutcliffe

had to buy one synchronizer," he says.

Jensen found out early on that synchronization was a necessary part of his project studio. "Clients for jingles and industrials just expected it as part of the service package I was offering along with my talents," he says. "It

AUDIO DIPLOMA
STUDIO CERTIFICATE
PRODUCER
TONMEISTER

Our 11 Neve "VR" consoles are dedicated to "Hands-On" training World-wide!

15 COLLEGES WORLDWIDE

SAE
School of Audio Engineering

Simply the best!
INTERNATIONAL AUDIO EDUCATION

PICTURE: SAE FRANKFURT

LONDON, United House, North Rd. N7 9DP Tel. (071) 609 2653 Fax. (071) 609 6944
15 colleges world-wide, major colleges in:
AMSTERDAM (020) 689 4189 **SYDNEY** (02) 211 3711 **FRANKFURT** (069) 543 262
MELBOURNE (03) 534 4403 **VIENNA** (01) 330 4133 **BERLIN** (030) 456 5137
PARIS (SEP '92) **SINGAPORE** (65) 334 2523 **AUCKLAND** (09) 734 712
PERTH (09) 325 4533 **MUNICH** (089) 48 71 45 **GLASGOW** (0236) 31585

USE READER SERVICE CARD FOR MORE INFO

by Blair Jackson



ANDRE FISCHER'S UNFORGETTABLE YEAR

One of the biggest surprises in the world of music in 1991 was the astounding success of *Unforgettable*, Natalie Cole's tribute album to her father, Nat King Cole.

This record, which made it to the top of the pop charts in the middle of 1991—and is still selling well—was a family affair in more ways than one: Eleven of the disc's tracks were produced by Natalie's husband, Andre Fischer. (David Foster and Tommy LiPuma, a longtime friend and associ-



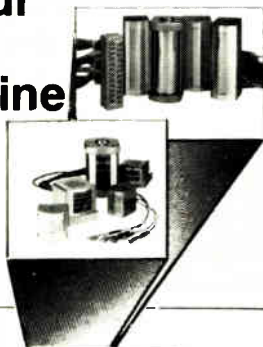
ate of Fischer's, produced the others.)

Fischer has been quietly building production credits since the early '70s, when he was a co-founder and member of the band Ask Rufus (later called Rufus; it gave Chaka Khan her start). From that base of working closely with an extraordinary singer, Fischer has become renowned for his production work with a wide range of great vocalists, including Anita Baker, Brenda Russell, Diane Schuur, Lalah Hathaway and Carl Anderson. He's also produced records for Janet Jackson, Michael Franks and Melissa Manchester, among others.

Fischer hails from a musical family.

The very heart of your tape machine

Can you
trust it
to just
anyone?



JRF maintains a complete laboratory consisting of state of the art magnetic head refurbishing and optical alignment equipment. In most cases worn, unserviceable magnetic heads for RECORDING STUDIOS, TAPE DUPLICATING, MASTERING, AND BROADCASTING can be restored to original performance specifications for a fraction the cost of replacement. If our FREE EVALUATION indicates that heads cannot be repaired, we offer premium quality replacement heads as well as heads for custom applications.

JRF
MAGNETIC SCIENCES

JRF/Magnetic Sciences, Inc.

249 Kennedy Road • P.O. Box 121
Greendell, New Jersey 07839

Tel.: (201) 579-5773
Fax: (201) 579-6021



USE READER SERVICE CARD FOR MORE INFO

You Can Hear The Difference

For More Info on Our
Music Library and
Audiophile
Sound Effects Series

800-227-1954 212-333-5766

FAX 212-262-0814



MANHATTAN
PRODUCTION MUSIC

311 West 43rd St., Suite 702; NY NY 10036

PRODUCER'S DESK

His mother, Frances, was a popular singer, his father, Stewart, a well-known horn player/arranger in big bands, and his uncle Claire is a gifted musician and composer. As a teenager, Fischer developed into an accomplished drummer, backing the likes of Curtis Mayfield and Jerry Butler, while honing other musical skills. From '72 through '78 he poured his energy into writing, arranging, producing and playing with Rufus, and the hard work paid off—Rufus was one of the most popular R&B bands of that decade.

For much of his career since 1978, though, Fischer has been behind the board. And while the unexpected commercial triumph of *Unforgettable* thrust him into the limelight more than at any time since Rufus (even netting him a Grammy nomination in the producer category; engineers Al Schmitt, Woody Woodruff and Armin Steiner received a Grammy for their work on the project), one senses this supremely confident man is taking it all in stride. We hooked up on his car phone a few months ago to talk about his life as a producer.

Is there a particular mind-set you need to work well with a vocalist? What do you bring to the project as a producer? Care. Protection. Basically, most vocalists are scared of being judged before they think it's perfect, but there is no such thing as perfection. What we're doing on a record is creating an illusion; it's not real. It's capturing something that may have been spontaneous, maybe not. To me the truest art form in music is playing live, whether that's recorded or not. If you like to perform and express yourself, the studio should just be another place to play. But a lot of people are intimidated by studios. So my job is to make it conducive and be a catalyst to make things click. The care I give is letting the singers know I'm there to bring the best out of them and be objective, and not make judgments.

I never tell a vocalist how to sing. I may make some suggestions: "You're singing from your nose; you're not singing from your diaphragm; don't sing while sitting on a stool"—common sense things that don't get into judgments of someone's character or ability. As a producer I might not always get the performance that I want—the discrepancies might come

in intonation or in timing or the emotional interpretation of the line—but you have to know how to pull back a little in dealing with that to get what you want in the long run.

When you work with an artist for the first time—Anita Baker, Janet Jackson, Diane Schuur—to what degree do you look at their past work as a way to judge the direction you'll take with a project? Or do you let the material itself guide you?

I let the material and the style of the vocalist direct that. If you go too much by the past, you tend to just make a reasonable facsimile of something that already took place. That's why some vocalists' work has such a sameness to it. I think playing it safe like that is stupid, because then you've done nothing new. It's bad for the artist, because you get locked in, and then people will expect the same thing from you forever. I hate to repeat myself.

Are you ever surprised at what singers do after you've worked with them? Like are you surprised at where Janet Jackson has gone?

No, I'm not, because I know what that package has always been about. It's just like Hammer. I don't take him seriously as a true musician, but at the same time I enjoy him because it's entertainment. For what it is, I have no problem with it. Same with Janet. She's fine at what she does, but growing up hearing Sarah Vaughan, and even my own mother, there's no comparison. Janet's current music is not my particular taste. But it's not something I have to make a judgment about. I don't see any of that kind of stuff in the time capsule in 2050. I see [Ellington arranger Billy] Strayhorn and Stravinsky in there. Maybe some Horowitz and Stan Getz. But that's just my slightly condescending ex-jazzier/classical music/longhair bag.

Well, you and Wynton Marsalis can debate it in downbeat someday.

Wynton's cool, but he needs a few more years on this Earth, just to see what life is all about. To see that it shouldn't be taken quite so seriously. My wife showed me this book last night, *The Meaning of Life*, put out by *Life* magazine, and they had this comment from [jazz great] Dexter Gordon where he was asked to decide what the meaning of life is. He said he'd leave it

—CONTINUED ON PAGE 182

You Can Take It With You.

Full of Features and Convenience.

The Shure VP88 MS Stereo Condenser Microphone marks a new age of convenience in the art of live and recorded stereo.

While reducing the setup complications normally associated with producing quality stereo, the VP88 offers a variety of stereo signals - from a single source - that never degrade if combined into mono.

The portable and rugged VP88 utilizes two condenser cartridges - a forward-facing cardioid (Mid) and a perpendicular bi-directional (Side) - with a switchable built-in matrix to convert Mid and Side signals into discrete left and right outputs. The VP88 lets you choose from three selectable degrees of stereo spread, or provides a classic MS signal for complete control of width and ambience.

VP88 shown actual size.

Excels In Every Environment.

Wherever your successes take you - from the studio to the stage to the great outdoors - you will never want to be without your VP88.

The VP88 faithfully reproduces the spaciousness and subtleties of orchestras and ensembles. It handles the most demanding percussion and the softest strings. It adds ambience to live house tapes and expands recording capability.

The VP88 makes it easier than ever to produce stereo DAT recordings so realistic you'll swear you are there.

With both phantom and battery power capability, there's no place your VP88 can't go.

And the VP88 is a remarkable value. No other stereo microphone gives you so much versatility and quality at such an affordable price.

Audition Shure's VP88 MS Stereo Condenser Microphone. Hear how much life can be brought to your productions through two ears rather than one.

For the VP88 dealer nearest you call **1-800-25-SHURE**.

SHURE®

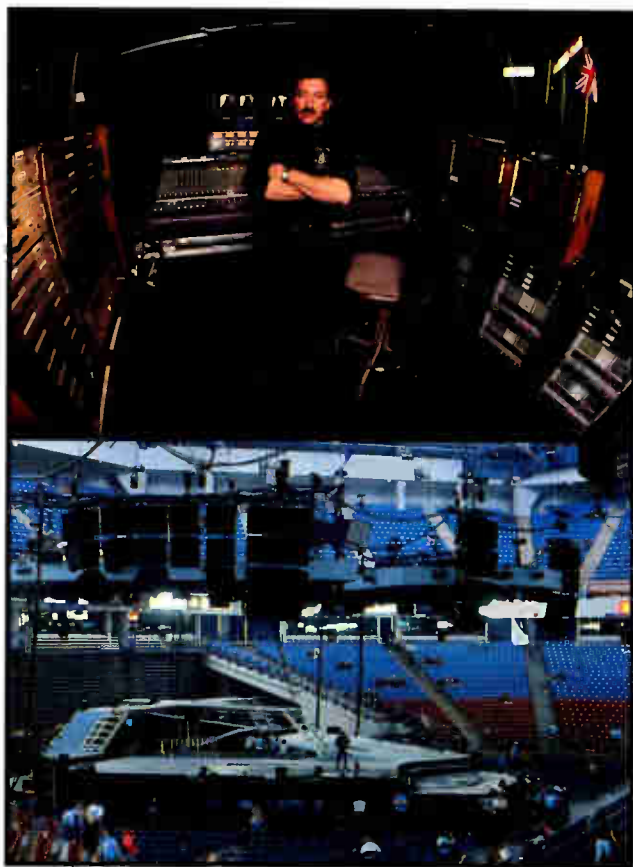
The Sound Of The Professionals®... Worldwide.

USE READER SERVICE CARD FOR MORE INFO

World Radio History

by David (Rudy) Trubitt

SOUND CHECK



Above: Paul Owen at the monitor position. The TV screens behind him are his only view of the stage. Below: Metallica/dB Sound stage with EV MT-4 cabinets.

Metallica Contemplates Ultimate Blame

Metallica is out on an international tour in the round. SSE Hire and dB Sound are supplying equipment, including a 42-input TAC SR9000 with two 24-channel extenders, a Midas XL-3 monitor desk and 100 kW of EV MT-4 cabinets. Mick Hughes is mixing FOH with Paul Owen handling monitor duties. Due to the unusual stage shape, Owen cannot see the stage from his monitor mix position, watching the band via closed-circuit video.

"If I had a choice, I'd do it all the time," Owen says. "With eight cameras I can see every part of the stage without turning my head, and I can take a cue off each band member at once." Each

onstage camera has a small light, which Owen can flash to acknowledge the player's cues, since they can't see him either. The band is not using any back-line gear, but instead relies entirely on the monitor system. This allows maximum control as well as what Owen cheerfully refers to as the potential for "ultimate blame."

Concert Sound Workshop

Those of you who attended the pre-NAMM, SYN-AUD-CON/PSN Concert Sound Workshop don't need me to tell you how valuable it was. For the unfortunates who missed it, the three-day event provided the opportunity to rub elbows with top representatives from the country's major sound companies. Discussions on business and technical aspects of live sound were moderated by Will Parry, formerly of MSI's fixed-install group. Panelists included Albert Lecesse of Audio Analysts, Ron Borthwick of Clair Bros., David Scheirman of Concert Sound Consultants (who made it all happen as the facilities coordinator), Mick Whelan of Electrotec and M.L. Procise of Showco (the last two being responsible for some of the event's most entertaining repartee).

"As a group we were extremely pleased with the '92 seminar, and felt it was the best so far," says workshop chair Will Parry. "This being our third time, each of us was more comfortable with our presentations and did a better job. Most importantly, we had an audience that was truly interested in the information that we were presenting. The audience's willingness to learn was the biggest contribution to the success of the workshop." No firm plans have been set for a repeat of the event, but it seems likely. I had a great time meeting the participants and hope to see you there next time!

Acoustic Reinforcement

Rosewood Sound (Syracuse, N.Y.) is a sound company with a niche—high-fidelity acoustic music re-

production. The company's clients include Michael Hedges, Richard Thompson, Branford, Wynton and Ellis Marsalis, and the Windham Hill label. Other clients include Christy Moore and more traditional Irish bands, as well as Indian and other ethnic groups.

"We don't have a modular sound system, which is shocking to some production managers," notes Rosewood's Mark Fitzgerald. Instead, Rosewood Sound has gone for a five-way component approach, with a folded-horn bass and exponential horns for the three midrange devices. "We're not trying to get more than two octaves out of each driver," Fitzgerald adds, "except for the sub bass, which is about an octave and a third."

Following its hi-fi approach, plenty of ribbon or soft-dome tweeters (JVC and Panasonic, respectively) are used on the high end. "Coverage is the prime advantage of a component system over a modular one," Fitzgerald explains. "We can shape the array. We splay the line array in order to get constant coverage. It takes a real good engineer to walk the room and say, 'It's a little lacking in the balcony at 1.6 kHz,' and then be able to make the correct manipulation to the stack to correct that. Fortunately we've got a couple of guys who can do that, with a couple more in training."

To keep an ear on exactly what its monitor system is doing, both pre- and post-crossover, Rosewood uses an Ashly stereo line mixer. "We can listen to any point in the entire monitor signal chain," Fitzgerald says, "by pushing a button and throwing a switch." When listening post-crossover, the high and low bands are brought into a L/R pair. This extra control has provided insight into crossover performance during the development of the company's own crossovers, including a new four-way, stereo plus mono, sub linear-phase device.

The company provides its own monitor enclosures as well, the

—CONTINUED ON PAGE 136

Live Sounds

Engineer Bruce Gasber on the Vinnie Moore Trio

If variety is the spice of life, Vinnie Moore's house engineer Bruce Gasber must be pretty well-seasoned. Over the last few months, he's mixed the trio everywhere, from 300-seat clubs to Madison Square Garden, with two days at Fender's NAMM demo room sprinkled in for good measure. "I was recommended by a guy named Tom Abraham, who had worked with Vinnie before, but he was off doing monitors for Queensryche," Gasber explains.

"When I got the gig," he confides, "I thought, 'Oh, easy—three-piece band—all instrumental! It's not as easy as it sounds, because you have to make sure you are very precise with the instruments, because they are the only things speaking. It is not like the vocals are on top with the instruments underneath. I follow the basic rules: Do I hear everything? When the bass player is snapping or playing a fast figure, can I hear his articulation or do I just hear a roar? The same with Vinnie's lines and with the drums. I think you have to be a musician yourself, even if you are not an accomplished player. You have to have a feel for the way music should go. The feel thing, for me, is the most important."

The tour carries band gear only—no console, no processing, not even a monitor engineer. Gasber enjoys the challenge and says he's used to dealing with whatever comes his way: "Over the course of my career I've dealt with practically everything—from a Peavey Mark III or a little Studiomaster club board, up to a Gamble." In such situations, getting up to speed quickly on unfamiliar gear is something the band will certainly appreciate. "That's what is good about working with this



Bruce Gasber behind the club's Peavey MkVIII console.

guy," volunteers guitarist Moore. "He can get a mix fast if we don't have much time on a particular night—he's quick."

How did Gasber build up his chops? "I worked with a club act that played six nights a week every week," he says, "all one-nighters, carrying a full production. I took that P.A. in and out, maintained it, put it up and trouble-shot it." Longer tours at home and in Europe helped, too.

He also credits a stint as house engineer and assistant production manager at a venue as a great learning experience. "I worked in a place called Break Away in Akron, Ohio," he explains, "which was like a Las Vegas-style show house. We would do acts like Bob Hope, Tom Jones and David Copperfield—a cabaret sort of thing."

There he had the opportunity to work with high-end touring sound companies. "As I started to work with the major sound companies," he adds, "I quickly realized that it's not any different—the concepts remain the same. In fact, it's easier because the gear is better."

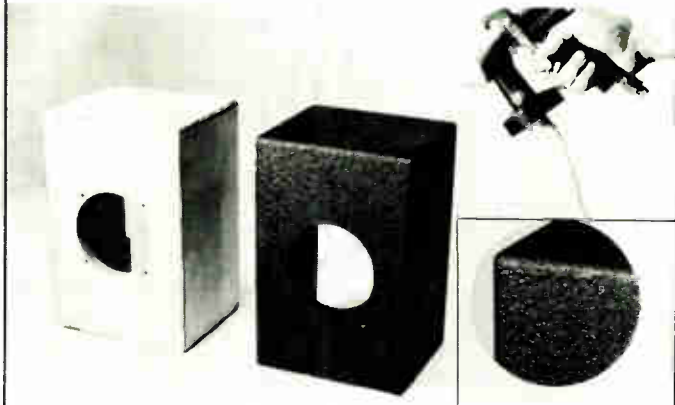
One recent opportunity to work with better gear came during January's NAMM show. Tasco provided an EAW rig for Fender's demo room. Two different consoles on successive days presented an opportunity to hear the differences between boards. "The first day we had a PM3000," Gasber says, "and we had a Midas XL-3 the second day, so I got to do the perfect comparison taste test. Many people have said, and I agree with them, the PM3000 has a brittle EQ section. The Midas sounded smoother, sweeter, and was a lot cleaner."

Finally, what about the arena slots opening for Rush with Electrotec? "It was a great experience," Gasber answers. "I have known Robert Scovill's reputation for a long time, and I can see why he well deserves it. It was a total pleasure to sit and listen to him work every night. He and the whole Rush crew treated all of us very well. It was excellent."

"The first night this guy did an arena was Madison Square Garden," quips Moore, returning to the bus with his pre-show plate of pasta. "It wasn't any different," Gasber insists. "I had a console. I had processing. I had the band. I had the front end. Just make it go—the same as any other day. Some guy came up to me and Robert after the show and said 'How do you get to this?' Robert passed the question to me. I told him I've done years and years of clubs, working with every gradient of system imaginable, hauling it in and out, mixing in every situation—I've done my homework. I came in here and just kind of banged it out."

A Quality Leather Look

Designed For Use On Speaker Cabinets



RESTORES OLD, WORN-OUT SURFACES

TEXTURELAC Spray finish produces a three-dimensional look that resembles a pebble, stucco or leather texture. It can be handled within 15 minutes of spraying and eliminates most sanding, spackling or extra paint operations. Dries to a hard mar-resistant and washable finish.

— Can reduce production spray room material and labor costs by 70 percent or more —

TEXTURELAC is formulated for use on all wood, and composition woods, plastics and metal casings. It is available in most opaque colors.

For a trial order or swatch panel of **TEXTURELAC** with descriptive literature, call or write:



Abilene Research and Development Corp.
P.O. Box 294, Hewlett, NY 11557 • (516) 791-6943

USE READER SERVICE CARD FOR MORE INFO.

THE ULTIMATE IN SOUND TECHNOLOGY!

Hear what all the top touring acts
are listening through...

EAR MONITORS™

- Customizable
- Consistent monitor quality anywhere on stage
- Stereo monitoring
- Cosmetically appealing
- Increased sound quality to both performer and audience
- Lower stage volumes

F U T U R E
SONICS
INC.

EAR MONITORS...HEAR WHAT YOU'VE BEEN MISSING

655 DANBURY COURT, NEWTOWN, PA 18940
TEL. (215) 579 4414 FAX (215) 579 0769

Please see Nov. 1991 Mix, p. 125, "Live Sounds".



**For those
who take it
seriously...**

Now
providing advanced
training in
conjunction with
Solid State Logic

It's not enough to study the "art" of recording. You simply must learn the *technology* of recording. That's the only way to insure your career for today *and* tomorrow!

"IAR grads are the most highly motivated and best trained of anyone entering the engineering field. I give IAR my highest endorsement."

Dan Healy, Chief Engineer
The Grateful Dead

800-544-2501

NY, NJ, CT 212-777-8550

Lic. by NYS Ed Dept / HS Diploma or GED Required
App for Veterans Training / Financial Aid if Eligible



Institute of Audio Research

64 University Place, Greenwich Village, New York, New York 10003

USE READER SERVICE CARD FOR MORE INFO.

Two Good Reasons To Send Your Next Order To QCA.



CASSETTE CD & RECORD MANUFACTURING & PACKAGING
2832 SPRING GROVE AVENUE • CINCINNATI, OH 45225 (513) 681-8400

—FROM PAGE 133, SOUND/CHECK

most hi-fi being a three-way box with a ribbon tweeter, soft-dome midrange and a high-compliance, polypropylene cone driver. Amplifiers? "We started with Hafler amps and loved them," Fitzgerald says, "and when Ashly came out with their MOSFETs, we settled on them. The only advantage to the Haflers is that they have no fan at all, but the Ashly fans are so quiet that it doesn't really matter."

Rosewood gets plenty of festivals, one-offs and segments of tours, but they're looking for more clients like Michael Hedges, who travels only with their system. "For us, he's a miracle," Fitzgerald gloats, "because even though he's at a smaller level, doing 1,000- or 1,500-seaters, he's carrying sound. We're looking for more people like him who know it's harder to do acoustic music accurately and feel it's worth the extra money they spend."

Chili Peppers and Nirvana say RATs!

RAT Sound Systems (Sun Valley, Calif.) was out with the Red Hot Chili Peppers for a nine-week fall tour with support acts Smashing Pumpkins and Pearl Jam. After a Christmas break, the Peppers and Pearl Jam were joined by Nirvana for five final West Coast dates. The tour carried a 32-box system, but added an additional 45-box Sound Image rig for the final Nirvana dates, where the venue sizes increased from 3,000- to 5,000-seaters to a 16,000-seat, in-the-round gig at the L.A. Sports Arena.

I asked Dave Rat how he integrates other company's rigs with his own custom-designed system. "We pick up augments from companies that have similar configurations," Rat says. "If we can't find a similar one, we'll just use the extra stuff for the wrap. We use a double 15-inch, double 10-inch, 2-inch, 1-inch high-pack.

“LOOK NO FURTHER”

Our extensive line of equalizers is a pretty impressive sight. But let's face it: all equalizers are pretty similar in appearance. It's what's **BEHIND** a product that makes the real difference. Rane offers many unique qualities that you should be aware of when considering your next equalizer purchase.

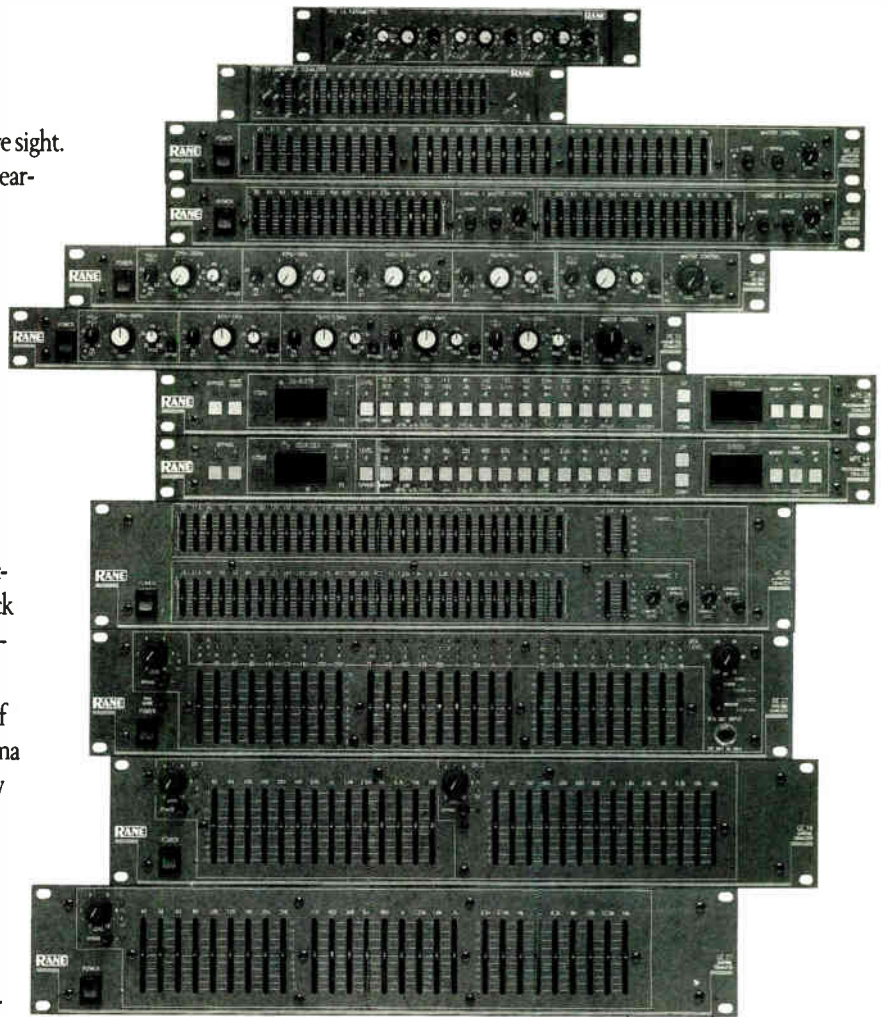
REPUTATION. Rane is synonymous with technological leadership in EQ filter designs: Constant Q, Interpolating, State Variable, Accelerated Slope, and programmable curve combining to name a few.

AN EXTENSIVE VARIETY of formats lets you choose just the right configuration for your particular need. Instrument or voice, sweetening or feedback elimination, analog or digital control—all with studio-grade performance quality.

RELIABILITY proven by flawless operation of thousands of Rane equalizers world-wide, from cinema sound to summit conferences, guitar racks to grammy recordings. All backed by factory support that is second to none.

VALUE: Superlative quality at affordable prices, the unique combination that makes Rane the best investment for your hard-earned dollar.

Stage or studio, fixed or mobile: we've got just the equalizer you're looking for. Professionals deserve the best: Rane. It's worth it.



RANE CORPORATION 10802-47th Ave. W., Mukilteo, WA 98275. (206) 355-6000

USE READER SERVICE CARD FOR MORE INFO

RECORDING EQUIPMENT

—All Major Brands—



FOR STUDIOS/HOMES CHURCHES/CLUBS

- Reel to Reel Decks (2-4-8-16 Track)
- Cassette Decks • Mixing Boards
- Mikes • Studio Monitor Speakers
- Special Effects Units Accessories

TASCAM
TEAC Production Products



- **VOLUME DEALER**
- **NEW & USED**
- **E-Z TERMS**
- **ALL MAJOR CREDIT CARDS**
- **PROFESSIONAL ADVICE**

Call for pricing information.

RHYTHM CITY

287 East Paces Ferry Road N.E.
Atlanta, Georgia 30305

1-404-237-9552 • 1-404-237-8526

Special Pricing for Package Systems.

USE READER SERVICE CARD FOR MORE INFO.

IMPROVE YOUR IMAGE



USCO AUDIO DFW-3

Imaging, depth of field, and response previously unheard-of in small console top monitors. A unique three-way design with an exclusive **down-firing** woofer ensures true low frequency response and makes imaging deep and powerful. Specifically designed to be fatigue free, portable, and accurate. It is a world class reference for the real world.

"...simply mesmerizing imaging and depth of field in addition to very clean and well-formed transients." — *Home & Studio Recording*

"...excellent imaging and sound stage." — *Music Connection*

For more information contact:

USCO AUDIO

2623 Canyon Drive, Hollywood, CA 90068-2417. Voice/Fax (213) 465-4370
(800) 932-6456

LIVE SOUND

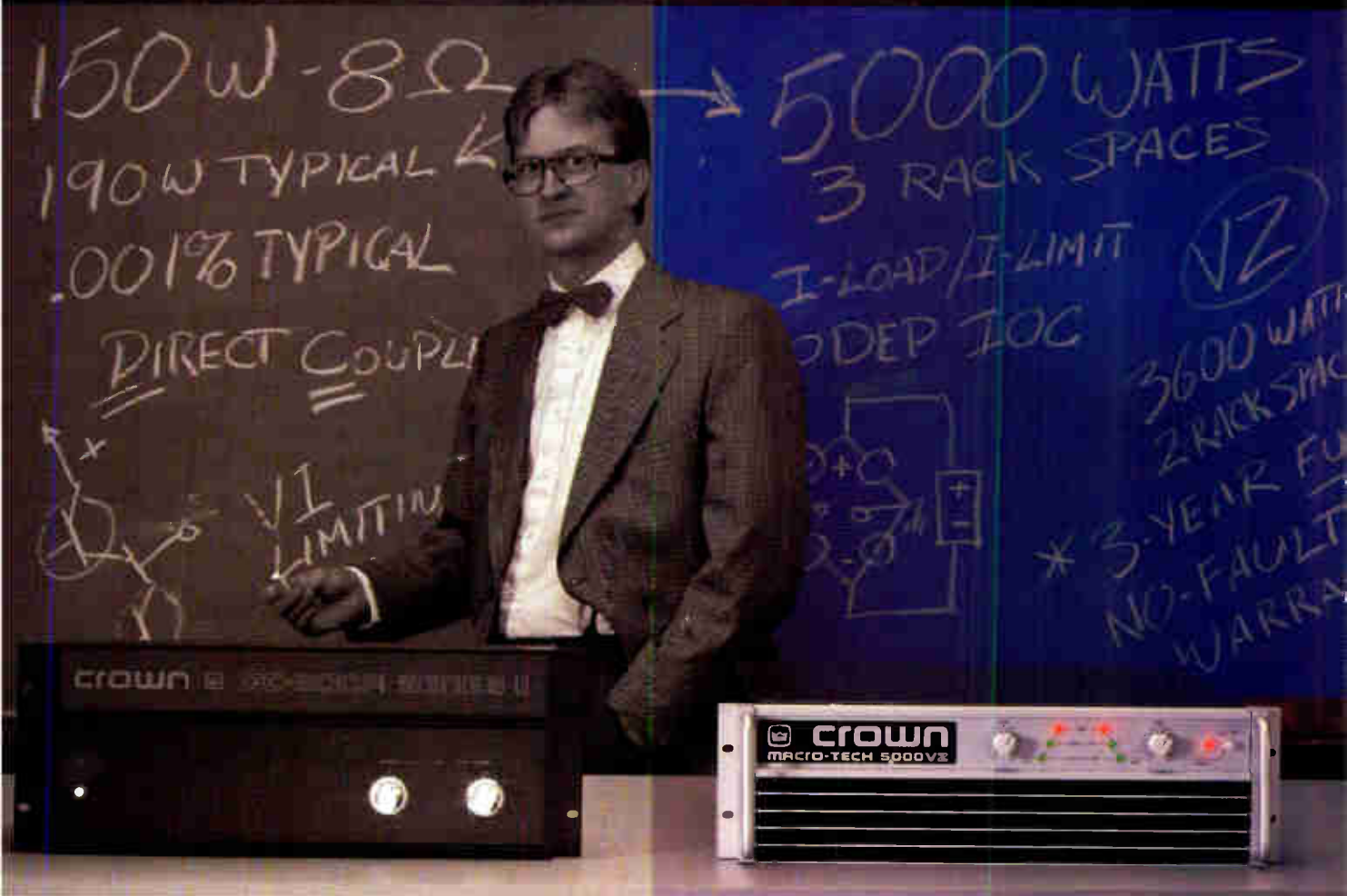
Sound Image stuff sounds similar to ours, especially their double 15-inch, double 12-inch, double 2-inch quad-tweeter system. We EQ'd their rig, EQ'd our rig and had a master EQ that controlled everything."

The master EQ was two TC Electronic 1128s with a 14-inch video monitor, allowing each band to store their own house curve. "We had a 1:1 mix between double 18s and high boxes," Rat notes, "which is pretty unusual—most tours take a 2:1 high-pack-to-sub ratio. We had all 16 subs on an aux send between 30 and 65 cycles, and ran the high-packs down to about 50-60, depending on the venue. The only thing we ran into the subs was kick and bass guitar DI, and we had about 8,000 watts for that octave. It was more of a funk-oriented rather than a punk-oriented mix."

RAT Sound builds its own cabinets, using drivers from a variety of sources. "We're not loyal to any one manufacturer," Rat comments. "The subs are EV X180s and TAD 1801s in a 50-50 mix. The EV is real good for the real low frequencies—28-30 cycles—but not very punchy. The TADs have a real thin light cone, and are real punchy, but if you have too many of them they tend to get low-midly around 80 or 100 Hz. Together, you get a real punchy sound that goes down real deep, and they both seem to handle approximately the same amount of power. For 15s, we have a 50-50 mix of JBL 2205 magnets with 2225 cones—we use all the old magnet structures for weight. The other half is EV X150s, which we're gradually switching over to. For 10s, we're using JBL K110 frame with a 2123 cone kit, again for weight. We use a JBL 2-inch with a Radian diaphragm on an EV HP94 horn. Finally, we use a TAD 2001 tweeter with an adapter on an EV HPT94 tweeter horn."

**IN '67, WE SHATTERED
EVERY EXISTING STANDARD
FOR AMPLIFIER DESIGN.**

**HERE WE
GO AGAIN.**



DC-300A II. Current version of the DC-300 introduced in 1967.

5000VZ. VZ technology packs 5000 watts into three rack spaces.

Back in 1967, we rocked the audio world with the introduction of the DC-300. With 150 watts per channel, signal-to-noise ratio of 100 dB, and <.05% THD, the DC-300 radically changed the future of amplifier design. Today, 25 years later, that same basic design continues to impress buyers around the world. In fact, you'll find our original DC-300's *still* in active service.

Now, this doesn't mean that all Crown amplifiers will be as equally impressive in another 25 years. But we're working on it.

Take our new Macro-Tech 5000VZ for example. This touring workhorse packs 5000 watts into just 5" of rack space. Patented VZ™ (Variable Impedance) technology allows the amp to dynamically adapt itself to both signal and load requirements, providing the best power matching to the widest range of loads possible. Combine ultra-low distortion with revolutionary features such as I-Load/I-Limit and Speaker Offset Integration, and

you've got an amp that redefines again every existing standard for amplifier design.

Of course, all the technical achievements are only as good as the support. At Crown, that starts with a 3-Year No-Fault Warranty that's extendable up to a full six years. And an experienced technical staff that's readily available with toll-free telephone support — the best in the industry.

When all is said and done, owning a Crown amplifier is a proven *investment* in long-term reliability and performance. And isn't that what you're really looking for?

For more information on any Crown product, call us toll-free: 1-800-535-6289.



 **crown**
Guaranteed Excellence

USE READER SERVICE CARD FOR MORE INFO

World Radio History

© 1992 Crown International, Inc.

NEWS FLASHES

All Pro Sound (Pensacola, FL) installed sound systems in over 50 churches in 1991. One recent install by the company is the 5,000-seat Word of Faith Family Church in Dallas. Designed in cooperation with Craig Jansen of Joiner and Company and church staff, the system uses a central cluster of QSC-powered EAW KF-600s. "The EAWs are more expensive," says All Pro's Chuck Walthall Jr., "but you get what you pay for—power and quality." A Techtron TEF-12+ and Bose CAD software were used to ensure maximum vocal intelligibility. ...Audio Services Corporation (Orlando, FL) recently supplied 24 Vega UHF wireless mics to Walt Disney World, the first to be used by Disney's convention services. However, they were not the first wireless mics in the facility—there were 370 wireless units on the property. "Vega worked very closely with Disney technicians to coordinate the frequencies," says Joe Guzzi of Audio Services. "With all the different sources of RF in the area, this was of the utmost importance." ...Chicago's Goodman Theater recently installed a Bag End ELF subwoofer system. "None of our sound effects sounded real in the house," says resident audio engineer Dave Nauton, "because we couldn't get enough of the real low end present on the recordings." Resident sound designer Bob Milburn says, "We placed the Bag End ELF in the same position as our existing system, and the ELF was far superior to our ears." The Goodman system consists of four S18-C, single, 18-inch cabinets and an ELF-1 integrator. ...Eighth Day Sound (Cleveland, OH) is keeping busy this winter doing industrials. Recent corporate clients included Packard-Bell, BF Goodrich, LDI Computers, Primerica, Health-More and *The Cleveland Plain Dealer*. ■



**RUSS
BERGER
DESIGN
GROUP
INC**

4004
BELTLINE
SUITE 110
DALLAS
TEXAS
75244
214/661-5222
FAX
214/934-3935

INDEPENDENT CONSULTANTS SPECIALIZING IN:

- RECORDING AND BROADCAST FACILITY DESIGN AND PLANNING
- ARCHITECTURAL ACOUSTICS
- NOISE AND VIBRATION CONTROL
- TECHNICAL SYSTEMS DESIGN

USE READER SERVICE CARD FOR MORE INFO.

THE DIGITAL COMPANY

Experience The Industry's
WIDEST SELECTION
of Digital Audio Workstations
and Multitracks.

Why waste time and money canvassing the country when one call to EAR will do it all? Whether you need complete digital audio workstation systems or computers and peripherals, you can count on EAR for:

- Most Extensive Selection in the U.S.
- Complete Technical Support
- Leasing Specialists
- Buy/Sell/Trade

• • • • •

APPLE
APOGEE
AKAI
DIGIDESIGN
FOSTEX
JVC
LEXICON
MARANTZ
MARK OF THE UNICORN
OPCODE SYSTEMS, INC.
OTARI CORP
PANASONIC
ROLAND
TASCAM
YAMAHA



EAR Digital Audio Workstation/Multitrack Specialists.
PROFESSIONAL AUDIO/VIDEO 2641 E. McDowell Phoenix, AZ 85008 602.267.0600

by David (Rudy) Trubitt

COMPUTER CONTROL

WHAT DO I CARE?



Who says computer control is just for installations? Stanley R. Miller's FOH setup for Neil Diamond uses three computers.

As regular readers of this space know, there's an AES working group out there developing a standard to interconnect and control audio equipment of all types from different manufacturers. Unfortunately, the process is a slow one, partly because suppliers don't have a clear idea of what their customers might do with the technology. This article describes what some people are doing with computer control, which will hopefully encourage further thinking on the subject.

Amplifiers are the most familiar and obvious targets for computer control. Most simply, connecting a computer to an amplifier allows the remote monitoring of the amp's status (heat, clip indicators, etc.) and lets you change things that would otherwise require a hike to the amp rack, like input level and channel polarity. The

amp control system that most people are familiar with is Crown's proprietary IQ system. One company that's been using IQ for two years is Eighth Day Sound of Cleveland, Ohio.

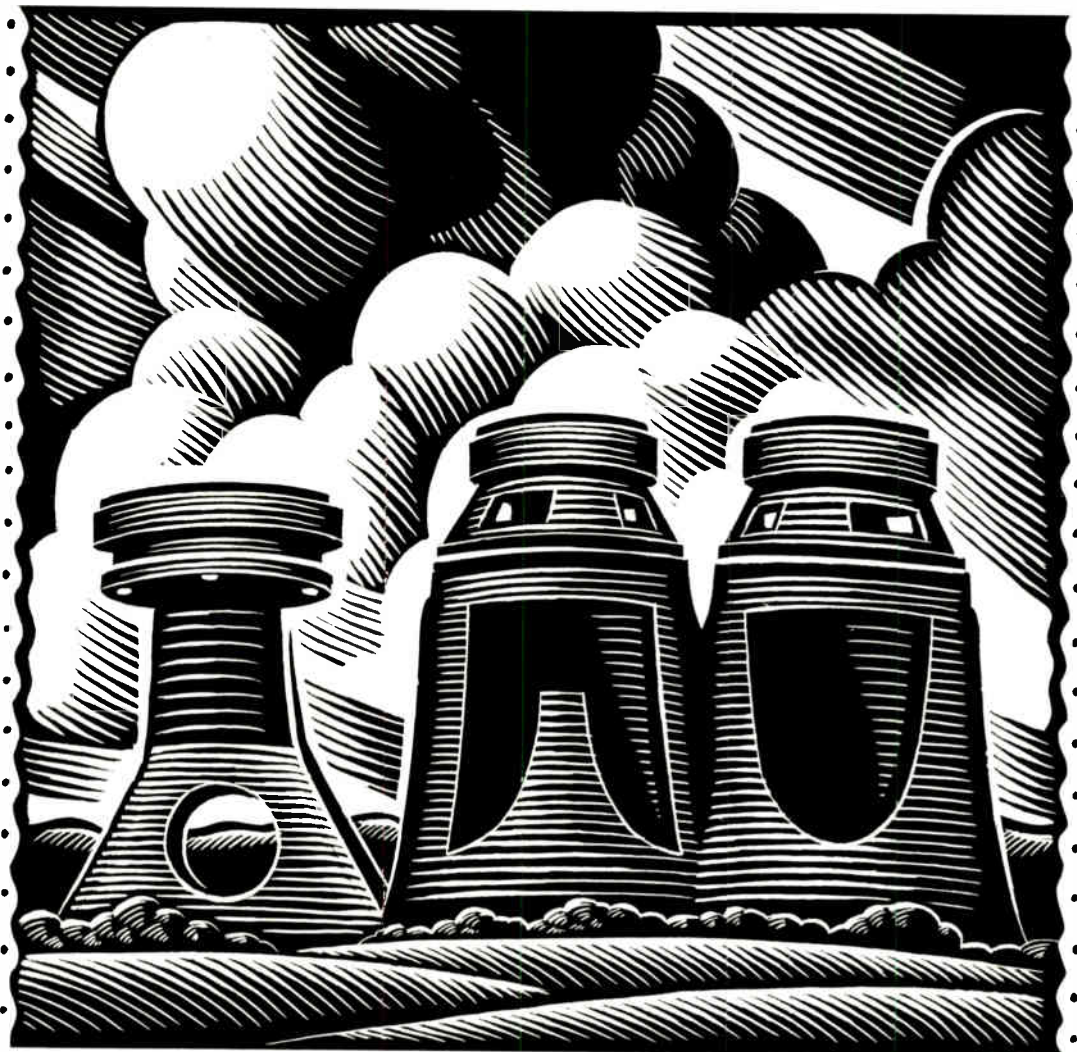
"The thing with computer control," says Eighth Day's Jack Boessneck, "is that if people use it

as a tool instead of a video game, it works real well. We use it on Sinatra a lot. It's a 360-degree show, and we'll use the IQ to set the level of each fly ring from top to bottom. We did the same thing with Jethro Tull. It also came in real handy when we did the Special Olympics. There were

things going on all over the place, and they would switch stages on us. I had a podium right in front of the speakers, and I could turn those speakers off when that podium was live. It also works real well in industrials where you have multimatrixed outputs. You can treat the matrices as zones, and turn them on and off and control levels. What else could you do? Have eight people out there turning amp racks down on cue? How many times have you sat there on the intercom trying to get hold of the stage engineer to find out what's going on up there? Now I can do it with a click of the old mouse."

Existing systems like IQ, PA-422 and MIDI are capable of connecting more than simply amplifiers, although it should be noted that IQ-compatible equip-

—CONTINUED ON PAGE 145



Sound Architecture.

You are looking at the distinctive profile of superior sound; the innovative engineering inside the Community RS Loudspeaker. A unique Wavefront Coherent™ design that delivers ultimate audio in low, mid and high frequencies, simultaneously, to every seat in the house. It begins with a solid foundation of hand laminated fiberglass horn moldings. The shape is mathematically correct, perfectly rigid and computer optimized to provide extraordinary sound projection. The RS Series replaces traditional direct radiators with full horn loading for uniform high sensitivity, and matched directivity. The result is a fully seamless illusion. Talk with our Community sales representative and begin to explore the shape of pure sound.

Community

333 EAST 5TH STREET, CHESTER, PA 19013 • TEL (215) 876-3400 • FAX (215) 874-0190

SOUND REINFORCEMENT NEW PRODUCTS

**AKG TRI-POWER MICS**

Intended to bring the standard of AKG studio mics to live sound is AKG's (San Leandro, CA) Tri-Power™ Series, with four hypercardioid handheld vocal, and three cardioid, instrument mics. All are dynamic, featuring high-output neodymium/iron-boron capsules with dual-protective baskets and a shock absorber system that protects the mic from drops or other rough handling. Handheld models have a unique, triangular, tapered body that is comfortable to hold, and a Vocal Contoured™ response for clear highs and a tight low end. The instrument mics have built-in stand mounts and flatter frequency response with reduced proximity effect.

Circle #243 on Reader Service Card

CROWN 5000VZ

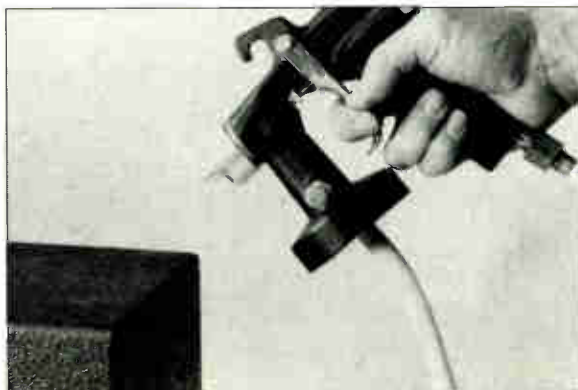
Said to deliver 5,000 watts (bridged mono @ 4 ohms) from a three-rackspace, 75-pound chassis is the 5000VZ from Crown of Elkhart, IN. Stereo power specs include: 2,500w @ 2 ohms, 2,000w @ 4 ohms and 1,300w @ 8 ohms. Retailing at \$3,295, this latest entry in Crown's Macro-Tech line also features ODEP protection, SPI/IOC indicators, P.I.P. capability and a three-year, unconditional warranty.

Circle #244 on Reader Service Card

BGW GTC AMP

The GTC from BGW Systems (Hawthorne, CA) offers the performance of BGW's GTA, but in a 45-pound, two-rackspace package with over 2 kW of dynamic power output. GTC features looping XLR inputs, Neutrik Speakon outputs, dual-channel and bridged mono modes, variable-speed cooling, LF over-excursion filter, thermal protection and space for two internal crossover cards.

Circle #246 on Reader Service Card

**TEXTURELAC**

Designed to produce a three-dimensional, leather-texture look on speaker enclosures, cases and racks, is Texturelac from Abilene Research & Development of Hewlett, NY. Available in most opaque colors, Texturelac is formulated for use on wood, plastic and metal-casing surfaces and can be handled 15 minutes after application.

Circle #247 on Reader Service Card

ATI LOUDSPEAKER MEASUREMENT SYSTEM

Audio Teknology's (Portland, OR) LMS (\$995) is a PC-based, gated, swept-sine wave test instrument for measuring SPL, impedance and distortion on loudspeakers. LMS includes a calibrated mic, preamp, software and hardware card for any PC 286/386/486. The card contains a low-distortion (<0.01%) oscillator, filters (programmable for LP, HP, bandpass or band-reject functions) and an autoranging peak/averaging input meter that can be gated for semi-anechoic measurements from 0 to 6 seconds in 0.1ms increments.

Circle #245 on Reader Service Card

PAS TARGET SERIES

Professional Audio Services of San Marcos, CA, is debuting Target, a line of cost-effective speaker systems for club, touring and contractor applications. The series features trapezoidal cabinets of 3/4-inch ply, with handles, carpet covering and steel grilles; permanent-install versions have a sanded-birch finish and three-ring fly points. Retailing from \$398 to \$1,078, the line includes two-way systems with compression-driver HF and 12- or 15-inch woofers, or dual 15-inch woofers; also available is a wedge monitor and 18-inch subwoofer.

Circle #248 on Reader Service Card

—FROM PAGE 142. COMPUTER CONTROL
ment is offered only by Crown.
What benefits come from control-
ling equipment beyond amplifi-
ers? One big advantage is simpli-
fying the operation of a complex
sound system. Tom Roseberry of
IED (who also happens to be
chairman of the AES working
group on the subject) offers an
example:

"It took a whole system that
was very complex and required a
lot of people to operate, and
brought it to the level where it
could be handled easily," he says.
"For instance, you might be able
to operate a huge convention
complex with three or four guys,
where it used to take 14 or 15. It
becomes an easier thing to get
your hands on the system and
keep it working smoothly." Gary
Hardesty, of JBL Professional,
concur, adding, "Computer con-
trol allows us to protect the sys-
tem by allowing the user to use
only the parameters they are
capable of dealing with."

Computer control also offers
benefits as a troubleshooting tool.
"A computer-controlled customer
of ours had a problem with an
amp," Hardesty says. "All they had
to do was call us and say, 'We're
showing this symptom on this
amplifier.' We identified the prob-
lem and had them send the unit
back for repair. It makes trouble-
shooting much easier."

Roseberry agrees. "[Without it]
you had to manually go around
and test," he notes. "Now with our
system, you can sit at the com-
puter and test everything from the
very front end all the way to each
individual speaker. If you've got a
fault at a major event with 50,000
people sitting out there and
something goes wrong, you get
an instantaneous report of where
the problem is so you can re-
spond to it."

Remote troubleshooting also
becomes an option. "The user
could call up with a problem,"
Hardesty says, "and the installer
or manufacturer could dial into
their system with a modem. Then

we could help diagnose the sys-
tem online. Manufacturers could
even download code to upgrade
their machines by phone line.
This easier access to the system
by the manufacturer means better
support for the customer. It also
gives them a feeling of security
that the system is monitored and
controlled by people who know
what they're doing."

For the industrious, there are
enough existing pieces to put to-
gether really large systems. The
most ambitious to date is Neil Di-
amond's current touring system
assembled by Stanley R. Miller,
Diamond's longtime FOH mixer
and chief audio engineer (see
photo). Putting it together was not
always easy. "I have the Crown IQ
system controlling all 96 amplifi-
ers," Miller explains. "That's
worked exceptionally well so far.
But I've had problems getting cer-
tain programs to run together on
the same computer—I've now got
three Macintosh computers to run
it all!" Opcode's Cue Sheet, which
changes mute configurations on

THE NEW LIGHT HEAVYWEIGHTS

CARVER
PROFESSIONAL
P.O. BOX 1237, LYNNWOOD, WA 98046 · TOLL-FREE 1-800-443-CAVR, FAX (206) 778-9453

PM-120 (2x60 watts)
PM-300 (2x150 watts)
PM-600 (2x300 watts)
PM-900 (2x450 watts)
PM-1200 (2x600 watts)

USE READER SERVICE CARD FOR MORE INFO.

INTRODUCING A NEW GENERATION

MXa SERIES



Our engineers took the very best features from our successful MX Series and improved them to create the new MXa Series Power Amplifiers from QSC. The results are dramatic. . .

More Power. Output power has increased as much as 20% on some models.

More Models. A model was added to make it easier to meet your exact power needs.

Additional Features. We added indicators, automatic fan speed control, and an input slot that accepts additional connectors, active and passive input accessories.

Increased Performance. Everything we did was aimed at one goal. . .delivering a higher level of audio performance.

Greater Reliability. The MXa Series has been subjected to the most rigorous development testing yet.

Lower Weight. As new technology was being added, we were able to remove some things – like weight.

With all of the improvements and engineering advances introduced with this new generation, you might assume that the price would zoom. Wrong.

The MXa Series from QSC. All new, except the price.

QSC[®]

A U D I O

© QSC is a Registered Trademark of QSC Audio Products, Inc., 1926 Placentia Ave., Costa Mesa, CA 92626 (714)645-2540

USE [REPAIR SERVICE CARD](#) FOR MORE INFO

his two Ramsa consoles, and Crown's IQ software had problems coexisting peacefully, and both are now happily running separately.

MIDI plays a significant role in Miller's design. "I'm receiving program changes from the musicians onstage to set up the console for the next song," he says. "I'm also using TC Electronic MIDI-controlled equalizers. I'm triggering a Forat drum sampler with the MIDI outputs of a BSS noise gate. All this stuff is interconnected."

Anyone planning such an extensive system should expect to write (or have written) custom software. "I'm running a special program to run my two Panasonic SV-3900 DAT machines," Miller adds. "Before the show starts, it opens the machines and tells me which tape to put in which unit." The opening of the show starts with DAT playback, and during the show the software prompts Miller to change tapes, automatically recording the show in the process. MIDI program changes also cause the DATs to write index marks during the show at the start of each song for easy cueing later.

There are as many other applications as there are system designs, but hopefully this modest overview has provided a little food for thought. Computer control isn't a panacea, and it's certainly not required or even desirable for many situations. However, you should expect to see more of it in the future, and any effort spent thinking about our needs today will return better products tomorrow. If you have any thoughts on how you might want to use computer control, share them with manufacturers at NSCA and elsewhere—they'd like to hear from you. ■

Sound Reinforcement editor David (Rudy) Trubitt writes a monthly column on computer applications for Electronic Musician, Mix's sister publication.

MAKERS • DISC MAKERS • DISC

Complete Cassettes in 7 Days!

WITH BLACK & WHITE INSERTS

Club Series:

300 C-12
Cassettes
\$499

Complete with design, typesetting, film and printing, Dolby HXPro duplication, clear shell and box, and cellophane wrap.

- Includes FREE Graphic Design
- Dolby HX PRO Duplication
- HI-TECH Clear Shell
- Major Label Quality

Syrice D. Adams,
Cleveland, OH
"Thanks for the
great design!"

Chuck Block,
Washington, DC
"More affordable
than I thought."

Greg Disotell,
New Orleans, LA
"Your excellent service
is much appreciated."

Some happy
clients who
got their
cassettes
FAST:

Also Available: Complete
CD and LP Manufacturing

Call Today For Our FREE Full
Color Catalog 1-800-468-9353



1328 N. 4th Street, Philadelphia, PA 19122, TEL: 215-232-4140, FAX: 215-236-7763

USE READER SERVICE CARD FOR MORE INFO.

Asia's Largest Professional Sound & Lighting Event

Pro Audio & Light Asia '92

The 4th Annual International Trade Exhibition for Professional Recording,
Sound Reinforcement, Duplication, Lighting, Lasers, Special Effects and Associated
Equipments for the Leisure, Presentation, Entertainment and
Related Industries for the Entire Asian Region

JULY 8 - 10, 1992 **Singapore**

Following the tremendous success of the 1991 event, space reservations for 1992 are already up by 33%. Apart from leading individual international manufacturers many of whom are past exhibitors, official group participation will come once again from the UK and Italy.

If you wish to be part of the largest event ever staged in Asia, and meet the entire Regional users, then you must let us know immediately.

To exhibit/visit, please contact Alan Suen:
BUSINESS & INDUSTRIAL TRADE FAIRS LTD.
18/F First Pacific Bank Centre, 51-57 Gloucester Road, Wanchai, Hong Kong
Tel: (852) 865 2633 Telex: 84882 ASIEX HX Cable: BIFCCAB
FAX HOTLINE: (852) 865 5513, (852) 866 1770

A
B&I
EXHIBITION

(PAA 12-92/MIX)

by Phil De Lancie

PHILIPS FORMATS IN FORE AT CES

DCC MODELS UNVEILED IN VEGAS

Digital Compact Cassette was the brightest star in Las Vegas at this year's Winter Consumer Electronics Show. But it wasn't simply DCC's attributes that kept it in the limelight. Competing leading-edge formats like Mini Disc and Dolby S-type were hardly to be found. That left DCC co-developers Philips and Matsushita (Technics, Panasonic) ample opportunity to catch the attention of CES attendees and clarify their DCC plans.

So far, Philips (along with its upscale Marantz division) is the only company to commit to a specific introduction timetable. The company plans to ship training/demonstration machines to dealers in the spring. A "pre-launch campaign" will follow over the summer, with the company's home hi-fi model, the DCC-900, to be sold through selected dealers in limited markets. Software duplication will be getting underway over this period as well.

On September 1, the official full-scale launch of the DCC-900, at a suggested list of \$699, will begin in Europe, the U.S. and Japan. Philips claims that over 500 prerecorded titles will be ready for sale at that time. The company plans to follow the DCC-900 with a Walkman-style portable (\$500-\$600 list) in February 1993. Additional models, including an automotive version, are slated to be on the market by fall of that year.

Matsushita, which until mid-1991 had been very quiet about its DCC involvement, was definitely on the bandwagon at CES. The company's presentation room at the Technics/Panasonic booth drew crowds with a demonstration that included DCC. DCC components and players were also on display, including some inno-



ILLUSTRATION: HOLLY C. KIM

Network



ScreenSound
Digital Audio-for-Video Editor/Mixer

SoundNet
Digital Audio Network

The Future of Audio Post-Production

SSL's **SoundNet™** is the world's only multi-user digital audio network. It adds major operational efficiencies to the ease of use and effectiveness already provided by individual **ScreenSound™** editing and mixing systems. Projects can be transferred from system to system, without downloading. Off-line back-up and restoration make every hour of operator time productive – *working for clients.*

Find out why Fox TV, Los Angeles; GTN, Detroit; Soundcastle / Post Modern, Los Angeles and Musifex, Arlington, VA., are already committed to networked systems for their future post-production needs.



Solid State Logic

International Headquarters: Begbroke, Oxford, England OX5 1RU - Tel: (0)465 842300

Paris (1) 34 60 46 66 - Milan (2) 612 17 20 - Tokyo (3) 54 74 11 43 - New York (212) 315 1111 - Los Angeles (213) 463 4444 - Toronto (416) 363 0101

SSL DIGITAL

CD-I, CDTV Vie for Interactive Spotlight

With Sony bypassing the winter CES, Philips was left an open stage for DCC. But Philips wasn't as lucky with its other "new" format, CD-Interactive. Years after winning industry agreement on the Green Book standard for CD-I, Philips finally launched the format last October through roughly 900 U.S. retailers. Hardware and software for CD-I were prominently featured at Philips' booth on the main CES floor and in a demo room at the Sahara hotel.

Unfortunately for Philips, it isn't the only hardware manufacturer intrigued by the idea of a CD-ROM drive that hooks to a TV and provides interactive "info-tainment" using audio, text, graphics and video (sort of). Commodore Business Machines, maker of the Amiga line of personal computers, has launched its own version of the concept, CDTV. The two formats are, of course, non-compatible. And while they appear at first glance to be quite similar, the marketing strategies of their developers are not at all the same.

Philips' initial campaign for CD-I, which it dubbed "The Imagination Machine," stressed the multitude of wonderful and fascinating experiences available to consumers through CD-I. Learn photography, take golf lessons, tour the Smithsonian or teach your kids to spell—all in the comfort of your living room. The word at the show, however, was that this basic strategy has been re-evaluated and a shift in emphasis is underway. The new approach will be to stress that CD-I players are, at their core, CD-Audio players, with the added benefit of interactive multimedia capabilities. Whatever the strategy, Philips sees CD-I as a component in a home audio/video entertainment system.

Commodore, on the other hand, is pushing CDTV as a PC (Amiga 500) and ISO-9660-standard ROM

drive in one convenient box. The company's comparison of CDTV and CD-I attributes, well-distributed at the show, portrayed CD-I as a closed system, while touting CDTV's openness to the addition of such computer appendages as a keyboard, printer and modem. Commodore argues that its approach gives consumers greater value by allowing them to expand their uses for the device wherever their interests lead them. Such flexibility also might help CDTV gain a greater foothold in industrial and educational markets, where customization for specific applications could be important.

It's too early to say whether the Philips or Commodore approach will ultimately prove more successful. Assuming that the consumer appetite for interactivity can be developed, the quality of software available on the two systems may prove more important than their relative expandability. Both companies are actively developing new titles along with outside developers. Commodore claims that CDTV has the edge in software development, because Amiga development tools have long been available, developers are experienced in their use and the CD-I operating system is not popular among developers.

Commodore acknowledges, however, that Philips, through CD-I software arm PIMA (Philips Interactive Media of America), has more to spend on software development. Philips Interactive Media Systems' executives, on the other hand, are reluctant to make any comment on comparisons between CDTV and CD-I. With Philips's greater marketing muscle in the consumer electronics arena, the company appears to be hoping that the best way to make CDTV go away is to simply ignore it.

—Phil De Lancie

vative and futuristic designs under the Technics name.

However, Matsushita had no introduction timetable for any of its DCC products. Nor did early DCC supporters Tandy or Sharp, which showed its solidarity by displaying a relabeled Philips machine. Brands like Sanyo, Carver and others have also voiced support, but it looks as if Philips will be ahead of the pack when it comes to product introduction.

How Does DCC Sound?

Not surprisingly, Philips had the most prominent display of DCC hardware on the main floor. A giant rotating DCC cassette attracted visitors to a display that allowed them to listen to a pre-recorded DCC (Dire Straits) on headphones. Both the DCC-900 and a personal portable prototype were on display. Given the ambient noise level on the floor, however, it was hard to reach any solid conclusions about DCC fidelity.

A better opportunity for auditioning the new format was provided by Philips in a demonstration room set up for small groups at the Sahara hotel. The roughly 300-square-foot room was outfitted with a nice hi-fi system fed from a switching device used to select either a CD player or DCC player for monitoring. After some introductory remarks, Philips' Robert Gatton synched up CD and DCC versions of Dire Straits' "Calling Elvis" from the album *On Every Street*. He switched back and forth between the two and invited his small audience to identify which was which. To his apparent surprise, more than two thirds of us did so correctly.

The fact that a slight difference seemed audible in that particular situation doesn't diminish the achievement of the Philips engineers who developed DCC. The CD seemed slightly more brilliant in the high end, but the sound of the DCC was excellent. Still, a demo using one rock song is far from conclusive, which left open to question whether the PASC algorithm, Philips' data compression scheme for squeezing digital audio onto a cassette tape (see "Insider Audio," March and April '92, for more on PASC), would be more noticeable in music with rich orchestral textures and rapid changes in dynamics.



"THE SAM ASH PROFESSIONALS"

Who are the Sam Ash Professionals?
 Chances are you'll recognize a few of us.
 The name Sam Ash has been trusted since
 1924, and in two years we have
 assembled the finest pro audio staff in
 the business with over 100 years of col-
 lective pro audio
 experience.

What makes us tick? It's simple. We
 derive great satisfaction from giving you
 the professional service you expect.

As leaders in disk-based recording and
 complete audio systems integration we
 are determined to keep you tuned into top

quality technical
 excellence.



723 SEVENTH AVENUE • THIRD FLOOR • NYC, 10019

2 1 2 • 7 1 9 • 2 6 4 0

AKAI • AMEK • APPLE • CROWN MACRO-REFERENCE • DAR • DIGIDESIGN PRO-TOOLS • GENELEC • LEXICON
 MASELEC • OTARI • SANKEN • SUMMIT AUDIO • SOUNDTRACS • TASCAM • TIMELINE • & MUCH MORE ...

Another Day, Another Deadline.

Its almost dawn. Again. And every nerve ending in your body is on fire. The phone keeps ringing. Like you need to be reminded of your deadline one more time. One hand reaches for your tenth cup of coffee, the other hits rewind. By now, both movements are involuntary reactions. You think to yourself, "I'm at the end of my rope."

We know, we've been there a hundred times that we can remember, hundreds more we choose to forget. And that's precisely why we've engineered all Akai Digital products to be compromise free.

If you're tired of being tied up, night after night, project after project, its time you took a closer look at our DD1000 V2.0 Optical Disk Editor/Recorder, S1100 Digital Sampler, and ADAM Digital Multitrack.

Each, in its own right, is a formidable little problem solver. And, we're proud to add, all three have been recognized by a leading recording publication's annual reader poll for their technical superiority.

Each was conceived and manufactured with features and performance designed to make your life in the studio easier. A lot easier. Plus, their remarkably modest pricetags will make it a lot easier on your new equipment budget, too.

So, next time you get a break in the action, give us a call to set up your own personal demonstration.

AKAI
DIGITAL

P.O. Box 2344 • Fort Worth, TX 76113
(817) 336-5114

USE READER SERVICE CARD FOR MORE INFO



DD1000 V2.0

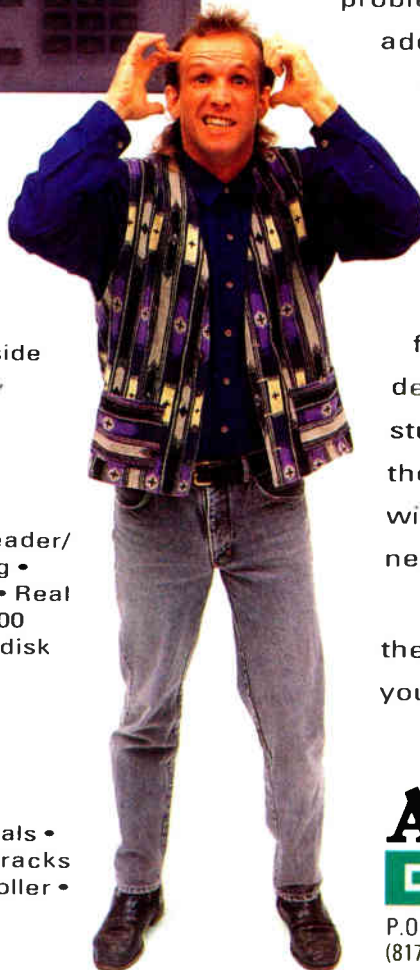
Optical Disk Editor/Recorder
1991 Tech Award Nominee
1 bit Σ Δ A/D conversion • 64X oversampling • 48, 44.1 and 32 kHz sampling rates • Time compression/expansion • 40 minutes of stereo audio (double for mono) on a single optical disk, per side • Standard interfaces include: MIDI, RS-422 and SCSI.

S1100

Digital Sampler
1991 Tech Award Nominee
2 to 32 MB RAM • Built-in SMPTE reader/generator with cue list programming • AES/EBU Digital Output • SCSI port • Real time DSP • Reads all S1000/S950/S900 sound libraries • Optional V2.0 hard disk recording.

ADAM

Digital Multitrack
1990 Tech Award Winner
12 track digital multitrack modules • Analog auxilliary track for sync signals • 3 modules can be interfaced for 36 tracks and controlled by one DL1200 Controller • 44.1 and 48 kHz sampling rates.



I was never really able to fully answer that question at the show. Ironically, I was able to get closer to an answer with BASF than with Philips. BASF had a room in the Convention Center but away from the noise of the main floor. The company is a DCC supporter—as a tape supplier, its motivations are obvious. BASF's Terry O'Kelly showed me to the DCC demonstration setup, which featured ultra high-end audiophile amps and headphones, driven, once again, from a switcher fed by DCC and CD players.

BASF's DCC demo tape, and the comparison CD, had several 90-second excerpts, including the obligatory Dire Straits tune, electronic and classical music. I was able to operate the switcher myself this time, and the monitoring situation was certainly better than at the Philips demo. Oddly enough, it seemed harder to hear differences between the two formats. Both sounded very good for the various genres of music.

When O'Kelly put the switcher into its auto mode for a double-blind test, I was given the opportunity to identify which source was which. I chose correctly, but not without some doubt. In fact, it was hard to put into words why one source sounded like it was probably DCC and the other CD. One possible explanation for this came from O'Kelly, who pointed out that it may take some experience listening to a new format before one learns what subtle identifying characteristics to listen for.

DCC's Prospects

So now that Philips has shown its first production machine, what are DCC's prospects in the market? On the plus side, it scores high in the fidelity department. The vast majority of consumers will find its sound equivalent to CD. Those who don't should probably take a double-blind listening test to see if they are responding to what they hear or to what they've read about the format's use of data compression.

The packaging has an attractive, modern look that makes an important visual distinction between DCC and the analog cassette, while avoiding a change in outside dimensions which might alienate both retailers and consumers. It also provides a place for insertion of a CD-style booklet, which is a nice touch. And the format has text-

display capabilities for table of contents, lyrics, program notes etc., though Philips' implementation of this feature on the Dire Straits tape was extraordinarily unimaginative.

On the downside, one has to question Philips' strategy of starting its roll-out with home hi-fi recorders before "mobile" (automotive and personal portable) players are available. Why would anyone pay \$500 (\$699 less discount) for a DCC machine when a decent CD player can be had for less than \$200? Not because they want to play their existing cassette collection, since they could throw a cassette deck in with the CD player and still come in under the DCC price. And certainly not for the privilege of paying CD-equivalent prices for prerecorded software that won't deliver CD-equivalent durability or track access.

For most consumers, then, the interest in buying DCC would be to digitally record, probably from CDs. And why tape CDs only to play back the tapes on a home stereo that already includes a CD player? Unless one plans to tape someone else's CDs (which Philips can't very well be seen as encouraging), there's not much reason to own the home DCC recorder until one has something outside the home to record for, namely a car stereo or portable player. At that point, DCC's backward compatibility comes into play, allowing one to listen to an existing collection of analog cassettes while building up a new collection of better-sounding prerecorded or home-recorded DCCs.

So where are the mobile DCC players? Maybe Philips thinks it can get the format off the ground with the DCC-900 alone by selling to the "first-on-the-block" audiophile-types. Unlikely, because in this case, the new toy offers no dazzling performance advance over existing toys like CD and DAT. More plausible is the possibility that Philips would have preferred to wait until more machine types are ready, but felt pressured by Sony's Mini Disc to bring some DCC product to market ASAP.

Will the lack of auto and portable players slow DCC's acceptance? That's a crucial question for those who will be called on to sell DCC to the public: the hardware retailers. At CES, Jeff Salgado, an audio product trainer for the Good Guys audio/video chain, responded positively to both the sound and the looks of the champagne-colored DCC model (complete with 18-bit A/D con-

verters) in Marantz's display room. But he agreed that the key to DCC's success will be to get it into cars, a setting in which consumers are particularly comfortable with tape.

So far, Philips counts nine auto stereo manufacturers among its DCC supporters. But at the show, Clarion appeared to be the only one ready to discuss its plans. Company executives told convention daily *Twice•Today* that they were "likely" to market car-DCC by spring 1993.

DCC's Rivals

By spring 1993, DCC won't be the only new auto/portable format in the market. Sony's Mini Disc debut is still set for late 1992, according to Marc Finer, whose Communication Research firm counts Sony among its clients. Finer explained the absence of a Sony booth in Las Vegas by noting that the company commonly exhibits at only one of the two CES events annually. Having hit the winter show in 1991, Sony decided that the summer show in Chicago would better suit its needs this year. That means that Mini Disc and DCC will be competing head to head for attention in Chicago as their proponents position themselves for the roll-outs later in the year.

As for Dolby S, the new consumer noise reduction system was scarcely in evidence at the show, especially in the mainstream audio area. A few manufacturers had Dolby S on high-end cassette decks in the "esoteric" audio area. Dolby had a demonstration room, but the company appeared mostly interested in pushing its surround systems.

What's become of the system that was to breathe new life into the analog cassette? Apparently it took too long to come up with an affordable single-chip version of the S-type circuitry. By the time the chip was ready, DCC had grabbed the attention of both the hardware and software sides of the industry. And the subsequent announcement of Mini Disc further clouded the picture.

At CES, Dolby had on hand some cassettes—Windham Hill's *Sampler '92*—that will be commercially distributed with S-type encoding. So S-type hasn't been abandoned. But the format appears to be on the back burner for now, as Dolby waits to see whether DCC flies or flops in the market. ■

Phil De Lancie is a mastering engineer at Fantasy Studios, Berkeley, Calif.

S.R.S.

Sound Reinforcement Services

Power... Projection... Performance...

- Concert sound
- Houses of worship
- Sports stadiums
- Conference centres
- Theatres
- High power monitor systems

*The finest sound systems
available for every
application*

**WHEN ONLY THE BEST
IS GOOD ENOUGH!**

S.R.S.

857 New Newton Bridge Rd.
Athens, GA 30607
Tel: 404-549-6023
Fax: 404-549-0574

USE READER SERVICE CARD FOR MORE INFO.

Digital Bin Cassette Tape Duplication

With revolutionary
Duplitratics DHS® Technology
From Your DAT Master

COMPLETE PACKAGE
300 C-12's 300 C-45's
\$395 \$495

Type II Tape, Clear 5-Screw Shell,
Clear Norelco, Direct-on-Cassette
Printing, Black & White Insert, and
all setup charges.

Complete Graphic Services



SAS INDUSTRIES
INCORPORATED

800-955-7271
804-582-6139
FAX 582-6144
147 Mill Ridge Rd.
Lynchburg, VA
24502

Tape & Disc News

CES Lively Despite Economy

The Electronics Industries Association reported a fairly robust turnout for the Winter Consumer Electronics Show in Las Vegas, despite overall sluggish economic conditions. (See page 148 for CES coverage on DCC and interactive CDs.) A total of 1,570 exhibitors, including most consumer audio manufacturers, covered a record 875,409 square feet at the Convention Center and the Hilton, Sahara and Mirage Hotels. Attendance, at 79,094, also set a record. Of particular interest as a possible economic indicator was the fact that the number of buyers, 24,716, was up 4.3% over the 1991 show. The EIA released a "Consensus Forecast," which predicts a 2% rise in consumer electronics factory sales in 1992.

ITA "How & Why" Adds Video

The ITA plans to add presentations on video duplication to its "How & Why" Seminar, an event previously focused only on issues related to analog-cassette duplication. This year's seminar, the seventh annual, is scheduled for May 11-14 at the Nikko Hotel in Buckhead, a suburb of Atlanta. The first two full days of meetings (May 12 and 13) will be split, with half the sessions devoted to audio and half to video. May 14 will begin with a combined session in the morning, followed by an afternoon tour of the Sony Music plant in nearby Carrollton, Ga. For further information, contact the ITA at (212) 643-0620.

BASF Debuts Four C-90 Tapes

BASF has introduced four new C-90 pancakes for high-speed duplication. The company's C-90 Superchrome is now available in a 10,800-foot length, while its C-90 chrome is being offered in a 17,300-foot configuration. BASF has also introduced 17,300-foot pancakes for its C-90 919-i voice-quality ferric and C-90 LNS low-noise ferric tapes. The company also debuted its first blank DCC cassettes at the WCES (see page 148).

DCR Teams Up with Tower

The digital music programming now being provided to some cable TV subscribers has been viewed by many in the record industry, especially retailers, as a potential threat to prerecorded music sales (see "Tape & Disc," April 1991). But one of the three networks offering the service, Digital Cable Radio, has found a way to allay some of the fears. The company is teaming up with retailer Tower Records to provide an 800 number that DCR subscribers may call to order music they hear on the network. The CDs and tapes, priced the same as in-store merchandise, will be delivered to callers' homes.

To further boost its argument that digital cable audio is good for the music industry, DCR released a study showing that 32% of subscribers listen to music they've never before been exposed to, and 60% spend more time listening than before they subscribed. The service currently has 1.6 million subscribers on 24 U.S. cable systems.

SPICES

Gauss (Sun Valley, CA) announced the sale of high-speed cassette-duplicating equipment to Sony Music. The gear will be used to expand Sony's operations in Naucalpan, Mexico. Yamaha Corporation (Buena Park, CA) has dropped the price of its YPDR-601 compact disc recorder from \$20,000 to \$13,980. The unit, which includes a full-function remote controller, allows partially recorded discs to be played in any CD player. Optical Disc Manufacturing Equipment has moved its operations to new facilities in Eindhoven, The Netherlands. The company may now be reached at (011) 31 40 465555. Recent mastering work at CMS Digital in Pasadena, CA, includes sessions by engineer Robert Vosgien with Fourplay on Warner Bros., Dave Grusin on GRP, Les Paul & Mary Ford on Laserlight and a five-volume Nat King Cole set. Rocket Lab in San Francisco reports singles mastering work for rap acts Digital Underground and Mod Squad by engineer Ken Lee, while Paul Stubblebine mastered Mickey Finn for Big Money Records. ■

Roland introduces the Digital Audio Workstation for everyone.

Expandable from 4 to 32 tracks; simultaneous recording or playback on any combination of tracks; Macintosh®

WITH EVERY NEW TECHNOLOGY, THERE COMES A DAY WHEN PRICES DROP, PERFORMANCE JUMPS, AND A MANUFACTURER'S STABILITY IS NO LONGER AN ISSUE.

or hardware control; "virtual" tracks; accepts SCSI-compatible drives; real-time sample rate conversion; video compatibility; built-in digital mixer with EQ and dynamic automation; full-featured random access editing; MIDI tempo mapping; external trigger mode . . . and the list goes on.

TODAY IS THAT DAY.

Finally! A professional multitrack disk recorder starting at \$6995. Roland's new DM-80 not only offers more features and performance for your investment than any other digital audio workstation, but it's easily upgraded as your needs change. And because it all comes from Roland you'll get great service, too!



Roland's custom VLSI chips give the DM-80 amazing power at a price that will astound you!

So if you're looking for the highest quality sound, expansion capabilities for the future, and a wide variety of features and options to choose from, all at a price you can afford, you owe yourself a demo on Roland's new DM-80. The wait is over!

For a brochure and dealer information, call Roland Pro Audio/Video Group at (213) 685-5141, ext. 337.

Roland®

Pro Audio Video

Roland Corporation US, 7200 Dominion Circle, Los Angeles, CA 90040-3696

©Roland Corporation US 1992 Macintosh is a registered trademark of Apple Corporation Specifications subject to change without notice.

World Radio READER SERVICE CARD FOR MORE INFO

by Jeff Forlenza

ALLIGATOR RECORDS TURNS 20

BRUCE IGLAUER REFLECTS ON THE BLUES

A

lligator Records out of Chicago turned 20 last year, and they have a lot to celebrate: a bevy of big-name blues artists, 26 Grammy nominations from the NARAS bigwigs, ten Indie Awards from NAIRD—the independent littlewigs—and 45 W.C. Handy Awards from the blues community.

To commemorate the occasion, Alligator put out their *20th Anniversary Collection*, a two-CD compilation that lets blues fans (and zydeco and New Orleans music fans) celebrate as well. And this year Alligator launched a 15-city 20th Anniversary tour featuring Koko Taylor, Elvin Bishop, Lonnie Brooks, Katie Webster, and Lil' Ed and the Blues Imperials.

The founder and guiding force behind Alligator Records is Bruce Iglauer.

As a college student at Lawrence University in Appleton, Wis., Iglauer would spend his Sunday afternoons at Florence's Lounge on Chicago's South Side listening to Hound Dog Taylor. "It was raw," the self-described slide guitar freak recalls. "It was very high energy. There was so much joy on the bandstand." Iglauer fell in love with

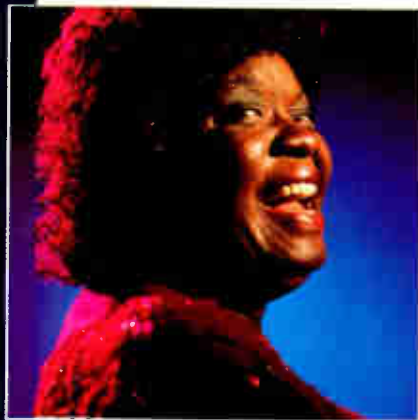
the Hound Dog's sound and wanted to bring that Sunday-afternoon-at-Florence's feeling to the world.

So, with a \$2,500 inheritance, Iglauer left his job at Delmark Records and started his own record label in order to



"I'm intending to do basically what I've been doing for the next 20 years—I love producing and working in the studio."

—Bruce Iglauer



Koko Taylor

manage and promote Hound Dog Taylor & the Houserockers. At a cost of \$900, Iglauer went into Chicago's Sound Studios with engineer Stu Black, and after two nights of recording to 2-track, they came away with 40 tunes that were boiled down to *Hound Dog Taylor & The Houserockers*. With the remainder of his bankroll, Iglauer pressed 1,000 copies of the album. Then he loaded the albums into the back of his Chevy Vega and hit the promotional road. Alligator Records was born.

Actually, Iglauer got his start in "the biz" with Delmark Records' Bob Koester in Chicago. "Bob was like a father figure to me," Iglauer recalls. "When I first came to Chicago to visit, he was the only person I knew of who knew anything about the blues scene—I had read about him in a magazine. I went to his store, and he was, and is, kind of a wild man. He was wildly enthusiastic about music. He was one of the few white people who was regularly going to the clubs on the South Side. So he

Above photo: Bruce Iglauer with Hound Dog Taylor's guitar.



PHOTO: KIRK WESSI

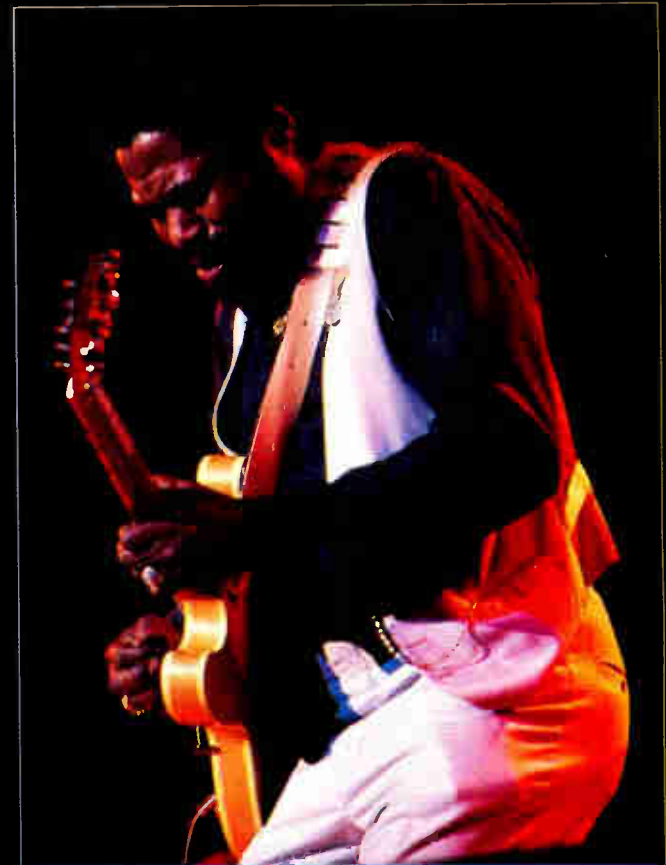


PHOTO: MARC POKEMPNER

'Gator artists
and guitarists
(clockwise from
top): Charlie
Musselwhite;
Lonnie Brooks;
Son Seals; the
late Roy
Buchanan; and
Kenny Neal.





dbx

NO SLEEP.
NO TIME.

THE REWARDS
ARE OBVIOUS.

PART OF THE EXPERIENCE

INDUSTRY STANDARD COMPRESSOR/LIMITERS, EQUALIZERS, MODULAR PROCESSORS AND NOISE REDUCTION SYSTEMS

1525 Alvarado Street, San Leandro, CA 94577 Tel: 510/351-3500 Fax: 510/351-0500

1992 AKG Acoustics, Inc. dbx is a registered trademark of Carillon Electronics Corporation

USE READER SERVICE CARD FOR MORE INFO

World Radio History

became like a hero to me. He took me on as the shipping clerk for his label, and also I worked behind the counter in the record store.

"A lot of what I learned from Bob is that the job of a producer is very often not the job of influencing music so much as inspiring the musicians—making them excited, and making the studio loose and fun enough so that they can let loose like they do on the bandstand. My style of production is actually rather different from Bob's because I do intensive rehearsals, whereas Bob was always what I call the 'four hours and a bucket of beers' school of production, which meant that when the band was on and the leader was on and the material was well-chosen—like the Magic Sam records and J.B. Hunter records and Junior Wells records—there were great records made."

In the early days, Iglauer wanted to be faithful to blues traditions while also refining the blues sound. "I tried to find a way to have the charm of those [early Chess] records," he notes, "but also have records that sounded as exciting and full and big as other things on the radio. So, I've wanted to sound contemporary but also very live and real. And I've wanted the studio technology to never overwhelm the music, but enhance it. If I do my job right as a producer and work with the engineer correctly, you should never be aware of the studio as its own force. It should always feel like they just stuck up a couple of mics and did it."

As well as being the main producer for Alligator, Iglauer also doubles as talent scout. "I get bombarded with tapes," he says. "And the worst part is that I listen to at least part of every tape I get. I hear a lot of good tapes, but I hear very few really special tapes. Every once in a while I find something: I found Little Charlie & the Nightcats that way. But I suspect that I'm more likely to find the artists I want by keeping my ear to the ground and just walking into some tiny little bar some night and hearing somebody, like when I first heard Son Seals.

"I look for things that are rooted in blues but aren't repeating what's already been done. I look for people who are really good storytellers. I look for lyrics and emotion first. Then I look for people who have very well-defined rhythm senses. And finally I look for hot soloists. People seem to think that Alligator is a label about guitar players, and that's not really true. Gui-

tar just happens to be the instrument they choose to speak through. The question is what they're saying, not what instrument they're speaking through."

Once he believes in and thinks he can work with an act, Iglauer strives to know more than his artists' repertoire. "I try to be intimately familiar with what my artists do on the bandstand every night," he comments, "and to establish personal relationships. For me, producing is not a job where you have no contact with the musician until you get into the pre-production. I hang around with the musicians. I listen to them. I try to understand what it is they're doing already and what it is they want to do. I try to hear what's in their musical imaginations."

Maybe this hands-on (or in-bar) care is the reason famous blues artists push their achievements to another level on Alligator: Koko Taylor, Albert Collins and Johnny Winter all had Grammy nominations for their debut efforts on Alligator, and Clifton Chenier's first release on the label (*I'm Here!*) won the label its first Grammy Award in 1982. Harmonicman Charlie Musselwhite's Alligator debut, *Ace of Harps*, garnered a W.C. Handy Award, and this year his follow-up on the label, *Signature*, was nominated for a Grammy.

When it came time to select the best of 20 years, Iglauer had a little trouble. "It was like being asked to select your favorite children," he moans. "First of all, I wanted to represent the artists who had done multiple recordings for us. Then I wanted to include cuts that spoke emotionally to me, like 'Trouble in Mind' by Big Walter Horton, and the Professor Longhair cuts. I didn't want to duplicate cuts that were on other samplers. [Alligator has four volumes of compilations known as *Genuine Houserockin' Music*.] I wanted everything to be fresh. With the artists like Lonnie Brooks, I tended to pick songs from the earlier part of their Alligator career, because I felt they deserve more exposure. And then we had to get it to flow right. We spent days programming different orders of songs—how they flowed into one another—and the right mixture of fast and slow. Because I don't believe that people spend a lot of time programming their CDs. I wanted it to be an overall listening experience, an emotional one that people would respond to and be entertained by, whether or not they read the booklet, whether it

was in the foreground or the background."

So far, it seems, listeners are responding to the collection: As we went to press, sales on the *Alligator 20th Anniversary Collection* were pushing 150,000 units in the U.S. Not bad for a guy who started a record label in his apartment in 1971.

Looking back on 20 years of blues, Iglauer concludes, "I've been extraordinarily lucky that I've been able to work with and help so many people in this style of music. I've had the best job in the world." ■



Jonnie "Most" Davis REMIXER ON THE RISE by Dan Daley

Mixing engineers, especially those working with dance music, have become sophisticated by virtue of the simple fact that they have more opportunity to use the technology to its fullest. A sonic perusal of some of the better recordings out there shows an amazing array of panning, effects usage, sampling and editing techniques. While rock, R&B and other mainstream genres still give the song paramount importance, the concentration on production values in pop/dance music makes the mixing engineer's performance as critical as that of the vocalist's or the producer's. In the mix stage, they become, in effect, post-producers, taking tracks either they or another engineer have recorded and doing the digital equivalent of musical rearrangements. It's more than just mixing; it has become a hyper-stage in the recording sequence, in and of itself.

One of the more interesting specimens is Jonnie "Most" Davis. Still in his mid-20s, he has tracked and post-produced for a range of pop, rock, fusion and dance music artists, including Tiffany (*New Inside*), Keith Sweat (the chart-topping "Make You Sweat"), Evelyn "Champagne" King, Lisa Lisa & Cult Jam, Full Force, Stacey Lattisaw and Pieces of a Dream, among others. Recently he's been in the studio with



HEAD RELAPPING

The contour and performance of your heads are restored to factory specifications before a precise optical/digital assembly alignment is performed. Original replacement heads also in stock.



MOTOR REBUILDING

Your Capstan, Reel, and Tachometer motors are rebuilt to quiet, flutter free perfection.



— Become an AMP SERVICES customer and enjoy a level of quality workmanship and individual attention rare in today's business environment. Call:

Audio Magnetic Professionals

AMP SERVICES INC

224 Datura Street, Suite 614
West Palm Beach, FL 33401

1 (800) 826-0601 In Florida (407) 659-4805

Authorized OTARI, SONY, TEAC Parts Dealers

USE READER SERVICE CARD FOR MORE INFO

TDK's NEW SM CASSETTES: "IT'S ABOUT TIME"



- Now available in 10, 20, 30, and 60 minute lengths.
- Superior high bias cassette for studio and demo recordings.
- Uses top-quality SA tape pancake for low noise and wide dynamic range.
- Ask for our new A/V catalog.

SONOCRAFT

575 Eighth Avenue
New York, NY 10018
TEL. 800-274-7666
FAX 212-564-9488

ex-Who singer Roger Daltrey.

A native of Kingston, N.Y., Davis studied music production and engineering at the Berklee College of Music in Boston, where his addiction to recording overcame an intense involvement with guitar playing in local funk bands. In New York a few years later, he connected with a few people who helped boost his career, including Eddie and Troy Germano at The Hit Factory, where Davis does much of his East Coast work; engineer Tony Maserati, who gave Davis his first break with Full Force; producer Phillip Damien, whom Davis credits as a decisive influence on his style; and Bert Padell, business manager, whom Davis says has been "incredibly supportive" of his career.

Highly controlled use of autopanning is a big part of the Davis repertoire, used not only to keep a mix interesting but to prevent it from becoming cluttered. As we listen to an Imana track, Davis points out where a guitar is moved to the right just as a vocal comes in from the left, a sort of sonic ballet. "[Autopanning] adds texture and movement to a sound-picture," he says. Other techniques he employs include sampling with AMS delays and triggering them from drum and bass parts.

The most recent Tiffany release, *New Inside*, illustrates Davis' m.o. as a post-producer. Producer Phillip Damien allowed him considerable freedom to work with the tracks before the two of them combined their ideas in the final mix. "People tend to leave me alone at this stage of a project," Davis says. "Given the technology, you have a lot of opportunities to do arranging in the mix. For instance, I rearranged the guitars using a sampler. On the track 'Our Love,' there were no guitars except in the solo. I went into the guitar solo and sampled selected phrases and flew them in at a couple of key points in the song. One guitar sample was made into a continuous loop and split onto two faders, then manually cross-panned left and right. This helped me create the depth and texture I was looking for in the intro and outro. I was able to create a tunnel of color, and I achieved it easier than trying to get a guitar player to do the same thing, especially at this stage of the project. It's very distracting to record a new part when the console is completely maxed out during a mix.

"Balance and equalization are the important aspects of a mix," he contin-

ues, "especially when you have so much going on. Once that's happening, it becomes a just-add-water mix. You can't let listeners get bored. Every time they hear a song, I want something else to come out at them, something they haven't heard before."

In terms of equipment, Davis has a particular ardor for the Neve VR console. "Aside from the sound of the board, which is amazing, it's the Flying Faders automation that I love," he explains. "The level of automation in the industry today allows engineers to use consoles in the same way that musicians use instruments. It's got a sound of its own. For instance, I can overload a preamp to get an edge on guitars or even vocals. I can't get that sound on other consoles. It's gotten to where I want a Neve when I work. It's like a guitar player who has to use his own guitar."

As might be expected, effects are a big part of Davis' tool kit. His personal favorites are AMS delays (which he uses as samplers), Lexicon PCM42 delays and Eventide H3000 Harmonizers. "I like flange delays," he says. "They can add a lot of texture and color to certain instruments and give you a lot of contrast. You can use delays and reverbs in conjunction with each other to create rooms within rooms, to achieve unique ambience effects on all sorts of instruments."

On "Our Love," he employed three reverbs: a wide gated setting, a long flanged one and another long room, all triggered at separate times on a handclap part. Given the large amount of effects and their stereo returns, he uses every inch of the console. "I use the automated cut function on the small faders of the Neve VR for additional effects sends during the mix," he explains. "With that many effects coming back—all automated for muting, level and panning—the console becomes a very real part of the effects processing. You always have to remember that effects can manipulate you, if you don't know what you want."

Jonnie "Most" Davis could be an archetype for the next generation of engineers. His audio training is formal, yet he moved directly into the hot seat right from school; his command of the technology puts him in a de facto production capacity on records that he engineers; and he is representative of an industry trend that views mixing engineers as celebrities in their own right. ■

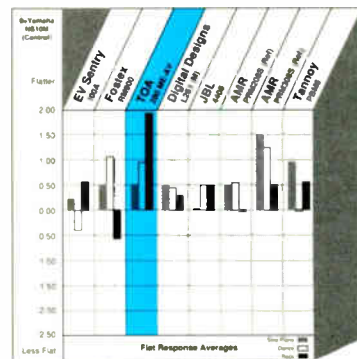
THE JUDGES WERE BLIND, NOT DEAF.

BLINDFOLDED. TEN OF THE BEST EARS IN THE BUSINESS – PRODUCERS AND ENGINEERS – GATHERED FOR AN UNBIASED, COMPREHENSIVE KNOCK-DOWN DRAG-OUT AUDITION OF THE FOURTEEN BEST STUDIO REFERENCE MONITORS UNDER \$1,000. TOA FINISHED AT THE TOP – AHEAD OF BOTH TANNOY AND YAMAHA. SURPRISED? YOU WON'T BE ONCE YOU'VE HEARD WHAT ARE FAST BECOMING AN ESSENTIAL PART OF BETTER

"TOA monitors are nothing short of amazing... and if you're looking for a wonderful reference monitor give these a listen"

— George Petersen, MIX

STUDIOS EVERYWHERE. TOA ME-AV MONITORS. THE STANDARD AMONG STANDARD-MAKERS AT OPCODE AND EMU.



"TOA is a clean winner in freedom from monitor induced frequency coloration."

FOUR TOA MODELS THAT ARE EQUALLY CRISP, CLEAN, BRIGHT.

"TOA came through with flying colors... best liked in the rock category with the highest scores in the stereo image area."

— EQ Magazine



EMINENTLY TRANSLATABLE. AN OPTIMIZED FREQUENCY RESPONSE AND LOW DISTORTION DESIGNED EXPRESSLY FOR DIGITAL MIXING. A HUGE 120° SWEET SPOT ESSENTIALLY ELIMINATES OFF-AXIS COLORATION – SO EVERYONE IN THE ROOM RECEIVES THE SAME UNIFORM SONIC IMAGE.



"The right size and sound for every application — each is magnetically shielded for AV use."

LISTEN TO THE EXPERTS. LISTEN FOR YOURSELF.

BECAUSE YOU DON'T HAVE TO SEE TO BELIEVE.

These guys are just simulated judges. For complete test results right from the mouths of the ears that know, call or write for the EQ Magazine test reprint: TOA Electronics, Inc., 601 Gateway Blvd., South San Francisco, CA 94080 • 415/588-2538 • 800/733-7088



C O A S T

L.A. GRAPEVINE

by Amy Ziffer

In February's pages you read about Lion Share's closure, but the studio had hardly shut its doors before operations were taken over by a nearby facility. The new owners have requested anonymity until all the paperwork is finalized, but in the meantime Lion Share is up and running. Next month you'll get all the details.

At One on One, chief engineer Joel Soifer gave me the rundown on changes to the Blue Room, where the most recent Metallica album was recorded.

—CONTINUED ON PAGE 165

NASHVILLE SKYLINE

by Dan Daley

Locally based, nationally recognized designer Steven Durr opened his own studio at the beginning of February. Imagine Sound, at the corner of Church and 17th, is an analog room with an emphasis on acoustics over technology, according to Durr. It's loaded with a Studer A827, tube amps and mics and the original RCA Studios API 44-input console. "There are 270 studios in Nashville, and you can count the truly great acoustic spaces on one hand," Durr notes. "That's what we went after with this [one]." Durr, who has done rooms at Treasure Island, Emerald and Castle during his 15 years in Nashville, mentions that by not trying to keep up

acts including Marty Robbins, Slim Whitman and Merle Haggard, noted that business had been adequate, and that he simply wanted to "get out of the studio-owning business."

MasterMix is getting out of the mixing business and expanding its mastering capabilities, according to studio manager Hank Williams. "Our growth in mastering is strong, and there's a lot of product coming out of Nashville these days," Williams explains. "There's no growth in our mixing business." MasterMix will now have two mastering suites, which Williams says will be marketed beyond just the Nashville market. The studio's Calrec console is being sold to Keith Thomas for installation at Bennett House. Thomas' production coordinator, Todd Moore, notes that the plan is to tear down the existing B room and build a new building adjacent to Studio A to house Studio B, which will be Thomas' production suite. Studio A will be the main rental room.

At Recording Arts, Carl Tatz added OptiFile automation to his new Soundcraft 3200 console, as well as buying Nashville's first Sony 7010 time code DAT. Those purchases, along with new outboard gear including an Eventide H3000 SE, a Klark-Teknik DN780 reverberator and a Lexicon 480L, are part of his plan to upgrade the facility to "an affordable, A-level automated mix room," he says. "It's not necessarily a trend toward specialization in Nashville studios; it's more that I saw a niche which I could fill. The technology's getting a lot less expensive, and that makes it a lot easier to do."

Producer Scott Hendricks (Alan Jackson, Brooks & Dunn, Steve Wariner) observes that the concept of the dedicated overdub room is slowly catching on in Nashville, but he's surprised that it hasn't happened sooner or faster. "It's the way I keep the costs

—CONTINUED ON PAGE 165



The legendary Les Paul stopped in at Royal Sound Studio (Hollywood) while in L.A. promoting his new boxed set. (LtoR) Les, with Terry Michael Scott (director of operations at Royal) and president of Gibson Guitars, Henry Juskiewicz.

with the Joneses technologically, he could keep rates low and compete as a tracking room.

Bob Montgomery, longtime owner of Bennett House Studios, acknowledged the sale of the facility to local pop maven Keith Thomas, producer of Amy Grant, among others. No price for the two-room facility was disclosed. Montgomery, producer of a long list of

C O A S T

SESSIONS

by Jeff Forlenza

SOUTHWEST

Multiplatinum producer/engineer Geoff Workman (Queen, Toto, The Cars) stopped in at Houston's Sound Arts to record Houston-based rockers Logan. The six songs for the project were recorded live by Logan, then "massive guitar overdubs using various multitrack tricks were added later," according to studio owner Jeff Wells. . . At Longhorn Sound Studio in Clyde, TX, a mammoth project entitled *Making Texas Music* was recently mixed down for Coxe of the West Records. D.J. Fontana, Elvis Presley's drummer, produced the project with the help of Tom Perryman, the former manager of Jim Reeves. The 37-song project features talented Nashville pros: Fontana on drums, Bunky Keels on keyboards, Duke Dumas on bass and Jim Baker (no, not *that* Jim Baker) on steel guitar. Nashville fiddler Deanie Richardson was brought in to do overdubs...

SOUTHERN CALIFORNIA

Bobby Brown was at Encore Studios (Burbank) doing overdubs on his latest MCA effort. Joining him for a duet was Whitney Houston. Teddy Riley produced the soulful sessions with Jean-Marie Horvat engineering and Milton Chan assisting. . . Nick Cave and The Bad Seeds were at Sound City (Van Nuys) tracking with producer David Briggs for Mute Records. Bret Newman and Chuck Johnson shared engineering duties. . . Michael Pinera (of Iron Butterfly and Alice Cooper fame) was at Valley Center Studios (Van Nuys) mixing his new solo album with executive producer Stet Blancett, co-producer/engineer Dave Jenkins and assistant Eric Vaas...

NORTHEAST

Steven Tyler of Aerosmith was at Sound Techniques (Boston) working on vocals with Sony engineer Vic Anesini and producer Don DeVito for the group's upcoming boxed set. . . Russian



Geoff Workman (L) at Sound Arts (Houston) with owner Jeff Wells at work on a project for Logan.

rockers Pantera mixed music recorded at the Moscow Monsters of Rock show at Giant Recording (Manhattan) with producer Mark Ross. The mix was engineered by Vinnie Paul and assistant

—CONTINUED ON PAGE 166

N.Y. METRO REPORT

by Dan Daley

Marathon Recording installed a new Neve VR 60 with Flying Faders in its A room in January, looking to accommodate its growing music client base, according to studio manager Susan Tobocman. "Music recording accounts for about 80 percent of the business now," she says, with an emphasis on urban and jazz, the balance going to commercial business.

The six-year relationship between producer Nile Rodgers and Skyline Studios is winding down

—CONTINUED ON PAGE 166

A custom Neve VRP 60 with Flying Faders automation was installed at the Power Station (NYC) Studio C. Recent projects on the new console included Eric Clapton "Unplugged" for MTV and the B-52's. Clockwise from left, Bob Walters, Barry Bongiovi, Tony Bongiovi and Bob Pargament.



PORTABLE ONE

Plus

The newest member of the Audio Precision family of test instruments... the Portable One Plus
...A comprehensive, high performance instrument combining sweep test and graphics capability with 12 audio measurement functions.

SWEEPS



GRAPHS



PRINTOUTS



- Press a button to sweep
- Acquired data shown numerically and graphically
- Makes both single & dual channel swept measurements
- 3 to 150 steps per sweep or sweep ISO standard 1/3 octave frequencies
- External sweep mode for test tapes, CDs or incoming signal sweep

- User selected end points for both axes of graph
- Automatic dynamic redraw for graph rescaling
- User selectable measurement units
- Graphic cursor provides numeric reading for any point

- Drives external printer through standard parallel port
- Prints graph or numeric sweep data table
- Also prints key analyzer/generator settings or bargraphs
- Printout menu allows combined tabular, bargraph & sweep printouts on one page

PORTABLE ONE PLUS...AUDIO PRECISION QUALITY IN A PORTABLE PACKAGE



Audio
precision

PO Box 2208, Beaverton, OR 97075-3070
503/627-0532 1-800/231-7350
FAX: 503/641-6906, TELEX: 283857 AUDIO UR

Australia: ST Electronics Pty. Ltd. Tel: (61) 2 459 9744 Austria: ELSINCO GmbH, Tel: (43) 222 812 1751 Belgium: Tronic & Precision Music, NV, Tel: (32) 2-660-5872 Bulgaria: ELINCO s.p.a. Bratislava Tel: (359) 82 581 698 Canada: GERRAUDIO D. Inc. Toronto, Tel: (416) 996-8178 China: Hong Kong: A.C. Systems Co. Ltd., Tel: (852) 424-0387 Czechoslovakia: ELSINCO GmbH, Tel: (42) 222 812 1751 Denmark: Tost, Sorenson A/S, Tel: (45) 46 27 11 11 Finland: Selenic OY, Tel: (358) 77 13911 France: ETI S. A., Tel: (33) 21 45 88 02 41 Germany: ROTH GmbH, Tel: (49) 221 75 21 33 Hungary: ELSINCO KFT, Tel: (36) 112 4854 Israel: Carat Electronics Ltd., Tel: (972) 3-444 1446 Italy: Audio 5171, Tel: (39) 2-660-5872 Japan: TOYO Corporation, Tel: (81) 3 (3) 530 0000 Korea: Myung Corporation, Tel: (82) 2-704 9842 Malaysia: Test Measurement & Engineering Sdn. Bhd., Tel: (60) 3 734 1017 Netherlands: Franx Europe Music, NV, Tel: (31) 20 4 01 07 17 New Zealand: Audio & Video Wholesalers, Tel: (64) 7 847-3414 Norway: Lydco, Tel: (47) 5 18 08 81 Portugal: Audio-Engenharia LDA, Tel: (351) 1 841 4087 / 945 862 Poland: P.H.U. INTERLAB, Tel: (48) 22 335 454 Singapore: YMS Systems Pte Ltd, Tel: (65) 596 2628 South Africa: SOUNDVISION, Tel: (27) 11 477 1315 Spain: Teoco Electronics S.A., Tel: (34) 3 620 7121 Sweden: Tel & Ton Electronics AB, Tel: (46) 81 80 33 80 Switzerland: SH S.A. Gummer AG, Tel: (41) 1 910 41 41 Taiwan: Liu Tech Systems Ltd, Tel: (886) 2 738 5200 United Kingdom: STS (Woking) Ltd., Tel: (44) 71 367 1622

USE READER SERVICE CARD FOR MORE INFO

World Radio History

—FROM PAGE 162, L.A. GRAPEVINE

and mixed. New acoustics in the studio make it much more live, and a set of 22 Neve 8078 mic preamps and equalizers were rack-mounted as a companion to an SSL.

The new studio sound is due to hinged hard/soft panels on the walls that can be adjusted to make the room "as live or as dead as anybody wants it," according to Soifer. "Tracking rooms have gone to being much more live. We had a lot of success with the room the way it was, and there are still clients who want it just that way. We can make it that way, but it's also capable of being totally controlled or totally live in all areas.

"When Bob Rock was in doing Metallica, he wanted the room to be more live," Soifer continues, "and we did something temporary for him. Rather than have to throw stuff together for certain people, we decided to design a system that was more flexible."

Having an SSL console *and* a rack of Neve preamps and EQs available in one room is One on One's solution to the perennial problem of clients who want to record on a Neve and mix on an SSL. "We did it to give those people the ability to do their whole project in one room," Soifer says.

Currently taking advantage of the additions are Testament (produced by Tony Platt for Atlantic), tracking and overdubbing in the Blue Room, and The Boys (produced by David Way for Motown), mixing their album in the Grey Room.

Silvery Moon Studios (a.k.a., Big Time) is relocating from West Hollywood to Topanga Canyon, and was set to reopen in March. Owner Gary Stern says the new facility will "sound good and be comfortable." More specifically, the new Silvery Moon will be similar to the old one, based around 24-track analog equipment, but the equipment inventory will be completely new and the relocation will enable Stern to own the property on which his studio is situated. After ten years at the old site, both the lease and the parking situation got "pretty unworkable."

The old Silvery Moon was sold part and parcel to engineers James Bailey and Brian Carney, and is now called Granite Recording. "Most of the equipment is either custom-built or vintage," Bailey notes. "We're restoring it with technician Don Petty to exceed the original specs. We're also bringing in additional outboard gear and mics and

rebuilding the monitors. They're going to be 200 percent better than they were." The pair plan to focus on bands and live music, and they're remodeling to bring the studio's sound in-line with that goal. They should be open again by the time you read this. Silvery Moon's number, as of March, is (310) 455-2014. Granite can be reached at (310) 659-8565.

Grand plans are being laid for Grandmaster Recorders Ltd. (formerly known as Bijoux). Studio manager and part-owner Alan Dixon says, "We are in a major diversification year at Grandmaster." Dixon hopes to make it an entertainment complex (L.A.'s answer to Planet Hollywood?), with a nightclub, video stage, restaurant and studio. The project is in the inspection stage, and Dixon says that it's still too early to set a tentative opening date.

On Sunday, April 5, the Los Angeles AES will present an all-day workshop covering everything needed to understand how sound systems work. The presenter will be Drew Daniels, AES L.A. section chairman and principal electroacoustic engineer at Walt Disney Imagineering. The workshop will be open to the public on a first-come, first-served basis. The session, which begins at 9:00 a.m., will take place in physics lecture hall 112 on the Ambassador College campus, near the corner of Green St. and Orange Grove Blvd. in Pasadena. For further information, contact the AES L.A. section at (818) 357-1289.

Miscellaneous equipment upgrades: Post-production facility Weddington Studios welcomed an SSL ScreenSound workstation, and plans are to use it on the upcoming flick *Batman II*. Warner Bros. in-house post studio, The Idea Place, installed a Soundmaster integrated audio editing system, citing its video editor-like interface as one reason for their choice.

Errata: *Family Matters* is not posted at Sony Studios, as reported in February.

Send studio news to Amy Ziffer, c/o Mix, 19725 Sherman Way, Ste. 380, Canoga Park, CA 91306; or call (818) 567-1429 or fax (818) 709-6773. ■

—FROM PAGE 162, NASHVILLE SKYLINE

of my productions manageable," he says. "I don't need to spend \$1,200 a day to do vocals or guitar overdubs when I can spend \$350 to \$450 and not pay for the frills I don't need for overdubs." Hendricks is part-owner of

—CONTINUED ON NEXT PAGE

ROCKET



L A B

**MASTERING
DIGITAL EDITING
COMPLETE CD
SERVICES**

**51 Federal St. #100
San Francisco, CA 94107
(415)495-2297
Fax: (415)495-2684**

USE READER SERVICE CARD FOR MORE INFO

Career Opportunities

In a few short years, Sweetwater Sound has become one of the leading retailers of professional music and recording equipment.

Due to our significant growth, a few key positions are available in our professional sales division.

We are seeking talented individuals who are:

- | | |
|-------------|--------------|
| Ethical | Ambitious |
| Honest | Trustworthy |
| Patient | Helpful |
| Polite | Courteous |
| Considerate | Kind |
| Genuine | Enthusiastic |
| Competent | |

If you value these characteristics and are interested in pursuing a sales career in which you can fully realize your potential, Sweetwater Sound may have an opportunity for you.

We offer the best compensation and benefits package in the industry and exciting opportunities for growth and creativity.

Please send resume including salary history to Personnel Department. No phone calls please.



SWEETWATER SOUND, INC.
5335 Bass Road Fort Wayne, IN 46808

—FROM PAGE 165, NASHVILLE SKYLINE

Omni, which, like Recording Arts, began in the mid-'80s primarily as an overdub room. "Now there are three or four legitimate overdub-intensive rooms in town," he says.

Nashville recently had its first predominantly black-owned professional recording studio open up late last year: A Cut Above is a single-room facility in a house on Edmonson Pike near Brentwood. The studio is equipped with a Studer A827 multitrack and a Harrison 2824 console. It operates along project studio lines, according to co-owner and studio manager/chief engi-

neer Dan Wilburn. "We're looking to keep the client base small," he notes. "We now have about three, including ourselves." All of the co-owners regard themselves as a single client, and include producer Sanchez Harley, former *Night Train* TV show singer Jimmy Church, and commercial writer/producer Lloyd Barry. Wilburn designed A Cut Above in consultation with Steven Durr.

Harley, who spent four years at Motown as a writer and performer, won two Grammys for gospel music and was nominated this year as well. According to Harley, even though black

gospel has been a big part of the region's music for years, it's only recently that blacks have moved into production and management positions in that category. "Blacks are involved in A&R and production, and now studio ownership," he says. "It's a natural part of the evolution." ■

—FROM PAGE 163, NY METRO

but isn't over. As reported here last year, Rodgers has moved the operations base of his Ear Candy Records to a studio/office complex near Madison Square Garden. However, according to Skyline co-owner Lloyd Donnelly, Rodgers will continue to book the studio for records, though not as intensely as he did over the last six years, when he essentially locked out Studio 3 five days a week. Rodgers recently completed work on David Bowie's new record there. Rodgers' lock-outs helped Skyline expand with additional rooms, and his departure was prepared for by revamping Studio 3, adding two Studer 800 multitracks and a 64-input SSLG Series console. "That and redoing the studio for variable acoustics was part of the room's evolution back to a for-hire situation," Donnelly explains.

New York is still the jazz capital of the world—a fact easily overlooked amid the commercials, dance records and soundtracks that have come to define the city, at least on the surface. And jazz likes to stay downtown when it can, according to Lou O'Neill, co-owner of East Side Sound, where the city's only Harrison Series Ten B sits a few yards in from the streets of the Lower East Side.

O'Neill says that his jazz recording business has picked up substantially due to the board, at least in the case of decent-sized jazz budgets. Recently, Hal Wilner mixed the Charles Mingus tribute record *Weird Nightmare* there, and downtown producer John Zorn has also been recording there. "They love being able to recall the mixes," O'Neill adds, referring to the console's automation. "This level of technology is pretty new to traditional jazz, which more often than not gets shunted into older technology." ■

—FROM PAGE 163, SESSIONS

Steve Neat...New York zydeco mavens Loup Garou were at Quad Studios (NYC) recording a project with producer George Ricelli, engineer Robbie Norris and assistant Steve

—CONTINUED ON PAGE 183

THE MUSIC STORE FOR MUSICIANS WHO MAKE HISTORY.



MOSE ALLISON



MICK JONES

Mose Allison's bluesy jazz piano and wry lyrics have made him an American musical institution. A gifted producer and musician, Mick Jones is responsible for Foreigner's unbroken string of platinum discs and a host of successful solo projects.

Musical legends like Mose and Mick always choose Manny's for their instruments and recording equipment. Because they know *why* we've been making history of our own for over 50 years.

Manny's keyboard and computer departments always has the hottest new instruments, software, comput-

ers, peripherals and outboard gear on display, and in stock.

Our comprehensive Pro Audio division features an impressive array of the latest mics, consoles, recorders, speakers, processors and more.

Musicians, producers and engineers can trust our staff for the best *professional* advice. We have the widest selection in town. Just call for prices.

Stop by Manny's. Everything you need to make some musical history of your own is just a visit or phone call away.



Manny's Music

Dept. C, 156 W. 48th Street, New York City, N.Y. 10036 (212) 819-0576 Fax: (212) 391-9250
To receive our new mail order catalog, please write us at the above address.

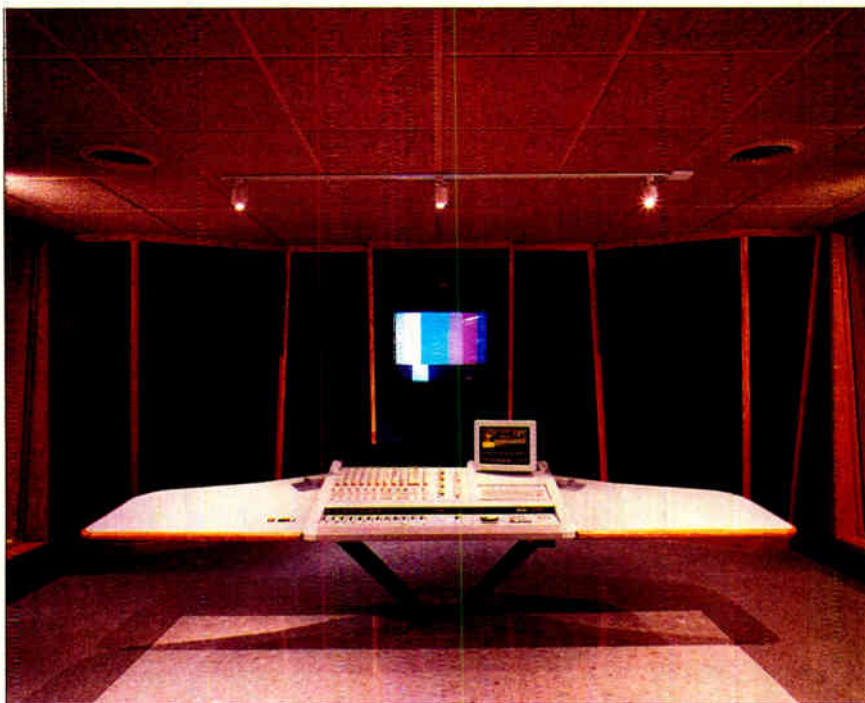
USE READER SERVICE CARD FOR MORE INFO

VIDEO PRODUCTION & POST PRODUCTION



Information in the following directory section is based on listing applications mailed earlier this year and was supplied by those facilities listed. *Mix* claims no responsibility for the accuracy of this information.

Personnel, equipment, locations and rates may change, so please verify critical information with the companies directly.



At the heart of the control room at SoundTrek's Kansas City, Mo., audio-for-video recording facility is an 8-track Lexicon Opus digital audio production system. The Opus has a capacity of 460 minutes of recording time with full mix automation. The control room, two adjacent recording areas and a separate machine room were designed by Steven Durr and built by Dan Petersen. SoundTrek's facilities are shared by Paddock Plaza, a video editing service that handles the video portion of much of the broadcast commercial work. Photo: Jim Goss.

CONTENTS

169	NORTHEAST U.S. FACILITIES
173	SOUTHEAST U.S. FACILITIES
174	NORTH CENTRAL U.S. FACILITIES
175	SO. CALIFORNIA/HAWAII/SOUTHWEST FACILITIES
178	NORTHWEST U.S. FACILITIES
180	OUTSIDE U.S. FACILITIES

Legend

APPV: Audio Post-Production for Video
VPF: Video Production Facility
VPP/E: Video Post-Production Editing
OLVP: On-Location Video Production

Upcoming Directory Deadlines:
Independent Engineers & Producers: **April 10, 1992**
Facility Designers & Suppliers: **May 11, 1992**
Southern California, Southwest & Hawaiian Studios: **June 10, 1992**

Mix listings procedure: Every month, *Mix* mails listing applications to recording studios and/or other vital facilities and services for the recording, sound and video production industries. There is a nominal charge to list a Boldface Listing (name, address, contact) and an Extended Listing (equipment, credits, specialization and photo or logo). If you would like to be listed in a *Mix* Directory, write or call the *Mix* Directories Department, 6430 Hillside Street #12, Emeryville, CA 94608; toll free 800-344-LIST.

MIX

SUBSCRIBE NOW AND SAVE 50% OFF THE COVER PRICE!

MIX

SPECIAL OFFER

YES! Send me 12 issues of MIX for just \$29.95.*

MAXIMIZE MY SAVINGS! Send me 24 issues (2 full years) of MIX for just \$52.95.*

Payment enclosed Bill me later (US only)

Charge my: MasterCard VISA

Card # _____ Exp. date _____

Name _____

Company _____

Address _____

City _____ State _____

ZIP _____ Postal code _____

Country _____

Signature Required _____ Date _____

Phone _____

*Add appropriate state sales tax where required. Offer good in the U.S. only. Foreign subscriptions must be prepaid with U.S. funds. Canada and Mexico add \$20/year. All other foreign countries add \$40/year. Basic annual subscription rate is \$46.

Please complete the information below to qualify for this special rate.

1. Please check the business' activities (all that apply)

RECORDING STUDIO

- A01 2-4 Tracks
- A02 8-16 Tracks
- A03 24 + Tracks
- A04 Digital Recording
- A05 Remote Truck
- A06 MIDI/Music Production

SOUND REINFORCEMENT

- B08 Sound Reinforcement

VIDEO/FILM

- C10 Production Company
- C11 Post-Production Company
- C12 Remote Truck
- C13 Multi-Image Production
- C14 Videotape Duplication

EQUIPMENT MANUFACTURING

- D17 Audio
- D18 Music
- D19 Video

DUPLICATION/DISC MFG.

- E20 CD Manufacturing
- E21 Tape Duplication
- E22 Mastering Only
- E23 Other (please specify)

ACOUSTICS/DESIGN CONSULTANT

- F26 Acoustics/Design Consultant

SOUND/VIDEO CONTRACTOR

- F27 Sound/Video Contractor

BROADCAST PRODUCTION

- G30 Radio Station
- G31 TV Station
- G32 Other (please specify)

MEDIA

- H35 Ad Agency/PR Firm
- H36 Magazines/Newspapers/Books

RECORD COMPANY

- J39 Record Company

INDEPENDENTS

- K42 Audio Producer
- K43 Audio Engineer/Technician
- K44 Video Producer/Director
- K45 Video Editor/Technician

EDUCATIONAL/ INSTITUTIONAL

- L47 Corporate Facility
- L48 Music/Recording/School/Program
- L49 Trade Association
- L50 Government

RETAIL/RENTAL/MFRS.REP

- M51 Audio/Music
- M52 Video/Film
- M53 Rep/Sales

MUSICIAN/ARTIST/ COMPOSER

- N55 Musician/Artist/Composer

INDUSTRY-RELATED

- N56 Artist Management/Booking
- N57 Music Publisher
- N58 Student
- N59 Other (please specify)

3. Please check ONE category that best describes your JOB TITLE:

- A. Corporate Management- President, owner, other manager, etc.
- B. Technical & Engineering- Engineer, editor, design engineer, etc.
- C. Production & Direction- Producer, director, etc.
- D. Sales & Administration- Sales representative, account executive, etc.
- E. Other (please specify)

2. Please enter ONE number code from above that best indicates your MAIN business activity:

SAVE \$29⁴⁵
Off the annual newsstand rate.

B20402

MIX

SPECIAL OFFER

YES! Send me 12 issues of MIX for just \$29.95.*

MAXIMIZE MY SAVINGS! Send me 24 issues (2 full years) of MIX for just \$52.95.*

Payment enclosed Bill me later (US only)

Charge my: MasterCard VISA

Card # _____ Exp. date _____

Name _____

Company _____

Address _____

City _____ State _____

ZIP _____ Postal code _____

Country _____

Signature Required _____ Date _____

Phone _____

*Add appropriate state sales tax where required. Offer good in the U.S. only. Foreign subscriptions must be prepaid with U.S. funds. Canada and Mexico add \$20/year. All other foreign countries add \$40/year. Basic annual subscription rate is \$46.

Please complete the information below to qualify for this special rate.

1. Please check the business' activities (all that apply)

RECORDING STUDIO

- A01 2-4 Tracks
- A02 8-16 Tracks
- A03 24 + Tracks
- A04 Digital Recording
- A05 Remote Truck
- A06 MIDI/Music Production

SOUND REINFORCEMENT

- B08 Sound Reinforcement

VIDEO/FILM

- C10 Production Company
- C11 Post-Production Company
- C12 Remote Truck
- C13 Multi-Image Production
- C14 Videotape Duplication

EQUIPMENT MANUFACTURING

- D17 Audio
- D18 Music
- D19 Video

DUPLICATION/DISC MFG.

- E20 CD Manufacturing
- E21 Tape Duplication
- E22 Mastering Only
- E23 Other (please specify)

ACOUSTICS/DESIGN CONSULTANT

- F26 Acoustics/Design Consultant

SOUND/VIDEO CONTRACTOR

- F27 Sound/Video Contractor

BROADCAST PRODUCTION

- G30 Radio Station
- G31 TV Station
- G32 Other (please specify)

MEDIA

- H35 Ad Agency/PR Firm
- H36 Magazines/Newspapers/Books

RECORD COMPANY

- J39 Record Company

INDEPENDENTS

- K42 Audio Producer
- K43 Audio Engineer/Technician
- K44 Video Producer/Director
- K45 Video Editor/Technician

EDUCATIONAL/ INSTITUTIONAL

- L47 Corporate Facility
- L48 Music/Recording/School/Program
- L49 Trade Association
- L50 Government

RETAIL/RENTAL/MFRS.REP

- M51 Audio/Music
- M52 Video/Film
- M53 Rep/Sales

MUSICIAN/ARTIST/ COMPOSER

- N55 Musician/Artist/Composer

INDUSTRY-RELATED

- N56 Artist Management/Booking
- N57 Music Publisher
- N58 Student
- N59 Other (please specify)

3. Please check ONE category that best describes your JOB TITLE:

- A. Corporate Management- President, owner, other manager, etc.
- B. Technical & Engineering- Engineer, editor, design engineer, etc.
- C. Production & Direction- Producer, director, etc.
- D. Sales & Administration- Sales representative, account executive, etc.
- E. Other (please specify)

2. Please enter ONE number code from above that best indicates your MAIN business activity:

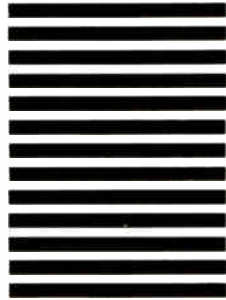
SAVE \$29⁴⁵
Off the annual newsstand rate.

PRINTED ON RECYCLED PAPER

B20402



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO 7231 NASHVILLE, TN

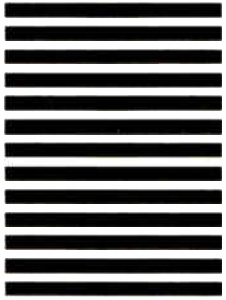
POSTAGE WILL BE PAID BY ADDRESSEE

MIX

P.O. BOX 41525
NASHVILLE, TN 37204-9830



NO POSTAGE
NECESSARY
IF MAILED
IN THE
UNITED STATES



BUSINESS REPLY MAIL
FIRST CLASS MAIL PERMIT NO 7231 NASHVILLE, TN

POSTAGE WILL BE PAID BY ADDRESSEE

MIX

P.O. BOX 41525
NASHVILLE, TN 37204-9830

VIDEO PRODUCTION & POST PRODUCTION



Northeast

Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, Vermont, Washington, D.C.

ADVANCED AUDIO PRODUCTIONS; VPF, VPP/E, OLVP, APPV; 6751 Michael Rd.; Orchard Park, NY 14127; (716) 675-3955. Owner: David Pruski. Manager: David Pruski.

AMERICAN SOUND & VIDEO CORPORATION; VPP/E; 3 Fairfield Crescent; W. Caldwell, NJ 07006; (201) 575-8484. Manager: Michael Pugliese.

CAPITOL VIDEO; VPP/E, APPV; 2121 Wisconsin Ave. NW; Washington, DC 20007; (202) 965-7800. Manager: Kelly Buccini.

satisfied clients. An added benefit is our SMPTE interlock multitrack audio sweetening with original music scored to picture and a digital library of over 150 SFX and music CDs. If "quality" and "commitment" top your list of production needs, call the professional

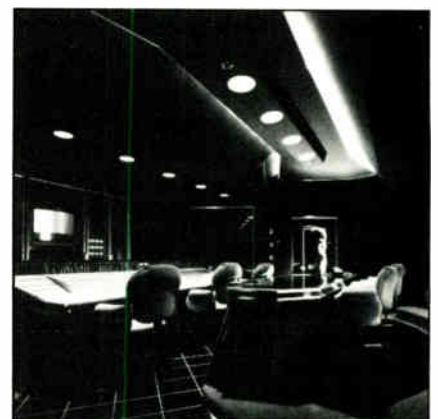
D-V-X INTERNATIONAL® DIVISION OF DEMO-VOX® SOUND STUDIO; VPF, VPP/E, OLVP, APPV; 1038 Bay Ridge Ave.; Brooklyn, NY 11219-6009; (718) 680-7234. Owner: Demo-Vox® Sound Studio Inc. Manager: Frank Grassi, pres.; Laura Grassi, VP production.



DC POST INC.
Washington, DC

DC POST INC.; VPP/E, APPV; 1155 21st St. NW; Washington, DC 20036; (202) 466-7678. Owner: Tom Angell. Manager: Adam Hurst. **Video Tape Recorders:** (9) Ampex VPR-3 1" Type C, Ampex VFR-300 D-2, (4) Sony BVW-75 Beta SP, (3) Sony BVW-950 U-matic SP. **Video Monitors:** (36) Sony/Ikegami. **Switchers/editors:** (2) Ampex AVC-330 switcher, (2) Grass Valley GVG 51 EM editor, (4) Ampex ADO w/concentrator. **Video Cameras:** (2) Sony DXC-3000 color camera in suites. **Synchronizers:** Alpha Audio Boss system w/TimeLine Lynx. **Video Effects Devices:** (4) ADO-3000 w/concentrator and Infinity software, Abekas A-62. **Audio Recorders:** Studer A820 24-track, Studer A820 2-track, NED Post Pro 8-track direct-to-disk. **Audio Mixers:** DCA DCM-232 2x32 input, Yamaha MR142. **Soundstages:** 15'x30' w/25' hard cyc. **Other Major Equipment:** Synclavier w/32MB, 32 poly, 32 FM, 16 outs; Studer A721, Studer A727, Dolby SR on all tracks, Quantel Paintbox and Wave front 3-D software, Roland D-550, Yamaha TX802. **Optical disk. Rates:** Call. **Specialization & Credits:** On-air programming for The Learning Channel; music composition and SFX editing for ABC's/NHK Pearl Harbor; *Two Hours That Changed the World*; Washington Post's production *The Secret Files*; Washington, Israel and the Gulf; local and national commercials.

DIGIPIX EDITORIAL; VPP/E; 220 E. 42nd St.; New York, NY 10017; (212) 972-6225. Owner: Leslie Levy, Don Levy. Manager: Robyn Alpert.



EDITEL/NEW YORK
New York, NY

EDITEL/NEW YORK; VPP/E, APPV; 222 E. 44th St.; New York, NY 10017; (212) 867-4600. Manager: Jill Debin Cohen, VP operations. **Switchers/editors:** Editing: (5) online, (2) multiformat and (2) offline editing suites, D-1 and D-2 recorders. Abekas A-60 and A-62 digital disk recorders. Grass Valley 300 and 200 switchers. Digital effects with three ADO's and three Kaleidoscopes. Chyron 4100 and Laird character generators. Non-linear editing. **Video Effects Devices:** Two digital suites with Paintbox, Harry, Harry Tracks, Kaleidoscope and D-1 recorders. Wavefront and Alias 3-D animation systems. Sony Mavigraph Printer and Matrix color slide camera for output to film. Full service design storyboard and production. **Soundstages:** URSA with Renaissance, (2) Rank III C with Sunburst color correctors, X-Y-Zoom, Ultimatte 6, electronic and mechanical pin registration, KeyCode, Sync-Smart, TLC, Kinesis and Abeka A-42 and Accom frame store. **Other Major Equipment:** Suite #1 features an SSL 600 system—a fully automated recording and mixing console with 32 inputs, a Sony 3324 digital, 24-track machine and Studer A827 analog, 24-track machine. Digital sound effects libraries. Sony PCM-1630. 35mm dubbers online with mix-to-picture capability. Dolby on all machines. Voice record-to-picture. Suite #2 features a Synclavier/PostPro SD digital audio system for sound design, editing and mixing. Music composition and production. Sony PCM-1630. Digital sound effects libraries. Voice record-to-picture.

GWSC POST; VPE, VPP/E; 250 Harbor Dr.; Stamford, CT 06904; (203) 965-6060. Owner: Group W Satellite Communications. Manager: James R. Crowe.

HBO STUDIO PRODUCTIONS; VPP/E, APPV; 120A E. 23rd St.; New York, NY 10010; (212) 512-7800. Owner: Home Box Office Inc. Manager: Ralph Fumante, VP studio operations. **Video Tape Recorders:** (12) Ampex VPR-3000 1", (25) Ampex

—LISTING CONTINUED ON NEXT PAGE

CLARK
PRODUCTION
ASSOCIATES
215-434-6363

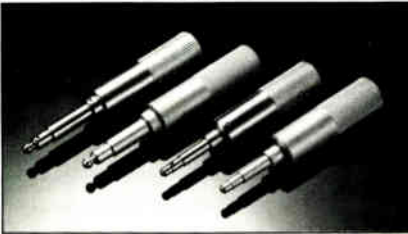
CLARK PRODUCTION ASSOCIATES INC.
Allentown, PA

CLARK PRODUCTION ASSOCIATES INC.; VPF, VPP/E, OLVP, APPV; 601 N. 6th St.; Allentown, PA 18102; (215) 434-6363. Owner: Gary C. Snyder. Manager: Amy Koenig, Jim Seccrest. **Video Tape Recorders:** (3) Sony BVW-75, (2) Sony BVW-65, Sony BVU-950, (4) Sony VO-7600. **Video Monitors:** (6) Ikegami TM-20-9 20". **Switchers/editors:** Grass Valley 200, Grass Valley 100, Sony SEG-2550, Sony BVE-9000 editor w/switcher interface, Sony BVE-900 editor. **Video Cameras:** (2) Sony BVP-7 ACCD, Sony BVW-300A CCD. **Synchronizers:** Cipher Digital Shadow. **Video Effects Devices:** Ampex ADO-100 w/Warp. **Audio Recorders:** Otari 5050 MkIII. **Audio Mixers:** Sony MPX-29, Yamaha 8x2. **Other Major Equipment:** Abekas A-42 still store, Abekas A-72 Character Generator. **Rates:** Call for rate sheet. **Specialization & Credits:** Clark Production Associates specializes in providing location and post-production support services to producers. Our complete location packages and online editing will guarantee a "no excuses" production. Our Betacam packages are personally owned and maintained by an owner/engineer with over ten years of broadcast experience. High-production-value packages include Sachtler tripods, Arriflex lighting, film-style matte boxes and Trum and Schoeps microphones. Our field engineers and tape operators exhibit a "can do" attitude that will ensure your production's success. Commitment to quality continues throughout the editing process. The flexibility of two online Betacam suites draws both rave reviews and return visits from

LEGEND

APPV: Audio Post Production for Video. VPF: Video Production Facility. VPP/E: Video Post Production Editing. OLVP: On Location Video Production.

CLEAN PATCH BAYS NO DOWN TIME



VERTIGO BURNISHERS AND INJECTORS RESTORE ORIGINAL PERFORMANCE TO YOUR PATCH BAYS

VERTIGO 1/4" TRS AND TT BURNISHERS:
Each used to eliminate noise caused by contamination of main contacts in normal patching situations.

VERTIGO 1/4" TRS AND TT INJECTORS:
Each allows injection of cleaning solvent in breaking contacts (normals), to eliminate intermittency that occurs when patch cord has been removed.

ONLY \$34.95 Ea. (Cont. USA) Please write for additional information and order form. Used by Professionals Worldwide. US Patent No. 4,733,678

VERTIGO RECORDING SERVICES
12115 Magnolia Blvd. # 116
North Hollywood, CA 91607
Telephone: (818) 907-5161
Fax: (818) 784-3763

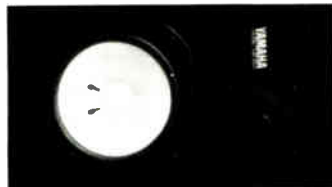
USE READER SERVICE CARD FOR MORE INFO.

THRIFTY ELECTRONICS THE SOUND SHACK



Speaker Components

NS-10M · Visonik · David · JBL



YAMAHA Nakamichi Hafler

JBL Professional Products Repair delivery and much more

13643 Burbank Blvd
Van Nuys, CA 91401
(818) 786-1610 (213) 873-2976
Since 1953

VIDEO PRODUCTION & POST PRODUCTION



—LISTING CONTINUED FROM PREVIOUS PAGE

VPR-2B 1", (4) Sony DVR-1000 D-1, (25) Ampex VPR-300 D-2, (10) Sony BWV-75 Beta SP, (30) JVC 1/2" VHS, (30) Sony 5600 3/4". **Video Monitors:** Barco HR-51, Shima Seiku in graphic environments. **Switchers/editors:** Grass Valley 200 and 300 in analog environment, CMX 3600 systems in all environments, Grass Valley Kadenza video processor in component digital suite, GVG composite digital switcher in D-2 edit suite. **Video Cameras:** (3) Ikegami 323 in Studio A, Sony BVP-7 Betacam in Studio B. **Synchronizers:** Adams-Smith 2600. **Video Effects Devices:** (4) Ampex ADO 3000, Ampex ADO 100, Grass Valley Kaleidoscope with Kurl, Ampex A53D with Warp. **Audio Recorders:** Otari MTR-10024-track, Otari MTR-12 2-1/4-track, AMS Audiofile. **Audio Mixers:** Solid State Logic 6000 in post-audio suite, Neve 12-input consoles in video editing suite and Studio A. **Soundstages:** Studio A: 36'x42'x16' with hard cyc and control room. Studio B: 20'x20'x10' insert stage. **Other Major Equipment:** (2) Quantel Paintboxes, Quantel Harry with Kaleidoscope, Abekas A60 and A64 digital disk recorder, Abekas A42 still store, Chyron 4100 character generators, Interactive Motion Control camera stand, videotape standards conversion, satellite transmission. **Rates:** Send for rate card.

HELIOTROPE STUDIOS LTD.; VPF, VPP/E, OLVP, APPV; 21 Erie St.; Cambridge, MA 02139; (617) 868-0171. Owner: Boyd Estus, James Griebisch.

HIP POCKET RECORDING STUDIOS; APPV; 37 W. 20th St.; New York, NY 10011; (212) 255-5313; FAX: (212) 645-1787. Owner: Bob Merrill. Manager: Jim Doherty.



INTERFACE VIDEO SYSTEMS INC.
Washington, DC

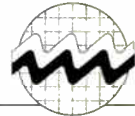
INTERFACE VIDEO SYSTEMS INC.; VPF, VPP/E, OLVP, APPV; 1233 20th St. NW; Washington, DC 20036; (202) 861-0500. Owner: Tom Angell. Manager: Elise Reeder. **Video Tape Recorders:** (4) Ampex UPR-3 1", Ampex UPR-300 D-2, (7) Ampex UPR-60/UPR-75 Betacam SP. **Video Monitors:** Mitsubishi 32", Ikegami 19". **Switchers/editors:** (2) Ampex ACE-200, Ampex ACE-25, AVC-22 Century, (2) CDL 4860, Ampex Disk Series, Abekas A-62 recorder/player. **Video Cameras:** (3) Ampex 50 CCD, Mitchell 35mm film camera. **Video Effects Devices:** (2) Ampex 3000 ADO Series, Ampex 1000 Series ADO w/digital. **Audio Mixers:** Lexicon Opus digital audio system. **Soundstages:** 50' x 30' stage w/3-wall cyc and Interactive Motion control w/35mm Mitchell camera. 35'x42' stages w/75' hard cyc. **Other Major Equipment:** V-Series Paintbox, Classic Paintbox w/Harry and Encore, interactive motion control with video camera, Interactive motion control with 35mm camera, Wavefront 3-D animation computer, Avid & Mediacomposer digital offline. **Rates:** Call. **Specialization & Credits:** Studio production: The Monitor Channel, *Congress This Week*; Hospital Satellite Network Teleconference: VA Medical Center Teleconference. Post production: Seagram Company Overview, MCI Corporate Communication, Marian Anderson, WETA Documentary, Time-Life Books spots. Computer graphics, animation/optical effects. Film & video: National Education Association National Spots; Alaska National Geographic Special, Time-Life Books spots; Virginia Film Festival Title. Audio Post: *Montserrat* documen-

tary, Smithsonian Institution; *In the Potter's Hand* documentary, National Museum of African Art; Time-Life Book spots.

LIMELITE VIDEO; VPP/E, APPV; 219 E. 44th St.; New York, NY 10017; (212) 983-2686. Owner: Limelite Video. Manager: Bob Corti.

LION AND FOX RECORDING INC.; APPV; 1905 Fairview Ave. NE; Washington, DC 20002; (202) 832-7883. Owner: Hal Lion, Jim Fox, Sally Lion. Manager: Rob Buhman.

MASTER SOUND ASTORIA; APPV; 34-12 36th St.; Astoria, NY 11106; (718) 786-3400. Owner: Maxine Chrein, Ben Rizzi.



THE MIX PLACE

A Sound Organization

SPECIALIZING IN SOUND MIXING FOR

- TV COMMERCIALS
- DOCUMENTARIES
- VOICE OVERS
- TRANSFERS
- ANALOG/DIGITAL
- TV PROGRAMS
- RADIO COMMERCIALS
- AUDIO RELAYS
- VIDEO CASSETTES
- SATELLITE RECORDING

663 FIFTH AVENUE, NEW YORK, N.Y. 10022
212/759-8311 ■ FAX 212/7836-6952

THE MIX PLACE INC.
New York, NY

THE MIX PLACE INC.; APPV; 663 5th Ave.; New York, NY 10022; (212) 759-8311. Owner: John M. Quinn, President.

MICHAEL MOSER/MEDIA; VPP/E, OLVP; 2000 P St. NW, Ste. 500; Washington, DC 20036; (202) 293-1780; FAX: (202) 775-2443. Owner: Michael Moser. **Video Tape Recorders:** Ampex CVR-35 Betacam, Sony BW-5 Betacam, Sony 5800-5850 U-matic editing system, Sony BVU-110 U-matic, JVC CR5000U. **Video Monitors:** (3) Sony 5'7/8" high-pitch, Hitachi BW, Hitachi portable waveform (w/battery). **Switchers/editors:** RM-440 system (listed above). **Video Cameras:** Sony BVP-70A, Ikegami HL-79EAL, JVC KY-2000. **Video Effects Devices:** Laird Telemedia character generator (in edit system). **Audio Recorders:** B&O cassette play/recorder (in edit system), TEAC 1/4" stereo reel-to-reel. **Audio Mixers:** Shure M267, TEAC mixer w/equalization (in edit system). **Other Major Equipment:** Full set of location lighting including Mole & Pepper Fresnels, lanero open-faced qmcs, softlights, booms, flags and stands, lavaliers and shotgun mics by Tram, Sony, Electro-Voice and Sennheiser. **Rates:** Field production \$800/day; offline editing \$55/hr w/operator; \$35 w/o operator.



NATIONAL SOUND
New York, NY

NATIONAL SOUND; 460 W. 42nd St.; New York, NY 10036; (212) 279-2000. Owner: National Video Center/Recording Studios Inc. Manager: Jennifer Corton. **Specialization & Credits:** Four mix-to-picture suites, including full MIDI capability, NED PostPro S/D with Synclavier 6400 and 3200, 24- and 48-track music studios and PCM-1630 digital audio transfers. Complete stock music and SFX libraries. Original music scoring for TV, radio, film, commercial and corporate productions, with an experienced, award-winning staff. National Sound focuses on the creative, with composers and engineers who perform mix-to-picture, sweetening and ADR in digital and analog formats. Their backgrounds include numerous television themes and commercials, Emmy-nominated children's songs, #1 singles and compositions for the Olympic Games. Our cli-

ents include the major networks, corporations, ad agencies and production companies, who rely on National Sound for complete audio post at the same location as a state-of-the-art video production/post facility. This connection allows a project to be posted from start-to-finish with a unique, creative continuity.

NBC TELESALES; VPF, VPP/E; 30 Rockefeller Plaza; New York, NY 10112; (212) 664-4754. Manager: Amy Kaminski, director-production planning.

NEW YORK AUDIO PRODUCTIONS; APPV; 140 W. 22nd St.; New York, NY 10011; (212) 243-6826. Owner: NYAP. Manager: NYAP.

P&P STUDIOS INC.; VPP/E, OLVP, APPV; 109 Forest St.; Stamford, CT 06901; (203) 359-9292. Owner: John R. Fishback. Manager: Aldena Leonard.

PHOTOMAGNETIC SOUND STUDIOS; APPV; 222 E. 44th St.; New York, NY 10017; (212) 687-9030. Manager: Beverly Dichter-Jacobs. Specialization & Credits: Five mix suites including four automated Neve V Series and one Neve 8058 console. New this year at Photomag is an NED Synclavier with Direct-to-Disk and a Sony 3324 digital multitrack machine. We are able to bring our clients through every stage of the audio post-production process. From transfers in any format, to sound design, electronic & automatic sound assembly (via our AMS AudioFile), to the mix (in mono, stereo or Dolby Surround) and layback (to our 1", 3/4", Beta SP or D-2 recorders). With our centrally located machine room, we can provide all of our rooms with the tools necessary for any job. A wide variety of audio and video gear is accessible via our Adams-Smith synchronization system and serial patch bay. Complete stock music and sound effects libraries along with our highly creative staff assist our clients in production of commercials, documentaries, trailers, music videos and long-form television programming. Photomag is dedicated to bringing the latest in post-production technology to our clients. Call for rates and information.

POST PERFECT; VPP/E; 220 E. 42nd St., 2nd Fl. South; New York, NY 10017; (212) 972-3400. Owner: Carlton Communications. Manager: Keith Gordon, dir. of operations. Video Tape Recorders: (18) NTSC 1" w/Dolby, (2) Pal 1", NTSC 1" w/PCM Audio (digital), Pal 3/4", (23) NTSC 3/4", (6) NTSC Betacam SP, (10) SP 3/4", NTSC Betacam, (7) NTSC D-2, (2) PAL/NTSC VHS, (2) PAL D-2, PAL/NTSC D-1. **Switchers/editors:** (3) online edit suite each w/Grass Valley 300 (customized), Abekas A-62, CMX 3600, Chyron Superscribe and 4100. Online serial D-1 edit suite w/Sony 8000-C switcher, Sony 9100 editor, NTSC/PAL Scribe Infinite! and 4100-character generator. **Video Cameras:** Ikegami HL-79 EA motion control, (4) Ikegami ITC-550 B&W high-resolution title, Sony XC-007P PAL color title camera, (7) Sony CCD-X77 NTSC B&W title camera, Sony CCD-X77 PAL B&W title camera. **Synchronizers:** (4) Tektronix 110S frame. **Video Effects Devices:** Grass Valley Kaleidoscope w/Kurl 4 channels (3 channels NTSC, 1 channel NTSC/PAL). **Audio Recorders:** (3) Studer ATR 1/4", Otari 24-track, Nagra T, (5) Nakamichi cassette desks. **Audio Mixers:** (3) Neve custom 16x4, (4) Neve custom 8x2, GVG AMX 170S. **Other Major Equipment:** Digital production suite w/Quantel PaintBox/Harry/Kaleidoscope, PaintBox suite w/Quantel PaintBox, (3) Wavefront 3-D graphic system, (2) color correction suite w/dA Vinci color corrector and Rank Cintel telecine, IMC motion-control animation stand. **Rates:** Call for rates.

RBV RECORDING AND VIDEO; 920 N. Main St.; Southbury, CT 06488; (203) 264-3666. Owner: Jack Jones, Evan Jones. Manager: Marjorie Jones.

RODEL AUDIO SERVICES; APPV; 1028 33rd St. NW; Washington, DC 20007; (202) 338-0770. Owner: Rodel Productions. Manager: Renee Funk.

HOWARD SCHWARTZ RECORDING INC.; 420 Lexington Ave.; New York, NY 10170; (212) 687-4180. Owner: Howard M. Schwartz. Manager: Lorna Levine. Video Tape Recorders: Sony DVR-10D-2, Sony BVW-70 Betacam, (12) Sony JVC BVU-950, CR850 3/4" VCR, (5) Sony BVH-3100, BVH-2000 1". **Video Monitors:** (16) Sony, Videotek PVM-2530, PVM-2030, 1380, Mitsubishi projection monitor, (4) Ikegami, Tektronix TM-14 14". **Synchronizers:** (4) Adams-Smith AV-2600 motionworker compact controller, Zeta-3; (3) ECCO MQS-100A. **Audio Recorders:** (6) Sony 3348/PLM-3324, (8) Studer, Otari, Sony 24-track analog recorders, (20) Otari, Sony, MCI 4-1/2-track. **Audio Mixers:** (3) SSL 6048, 4040; (4) Sony MXP-3036. **Other Major Equipment:** (6) Magnatech 6-1/4-1/3-1/1-track film dubbers, (2) SSL ScreenSound workstation, (2) Nagra IV-STC, 4.1, (7) Dolby SR/A multitrack noisereduction, (9) Sony, Panasonic R-DAT (w/time code).

SHEFFIELD AUDIO-VIDEO PRODUCTIONS; VPF, VPP/E, OLVP, APPV; 13816 Sunnybrook Road; Phoenix, MD 21131; (410) 628-7260. Manager: Nancy Riskin, Richard Van Horn.

SIGMA SOUND SERVICES; VPF, VPP/E, OLVP, APPV; 212 N. 12th St.; Philadelphia, PA 19107-1689; (215) 561-3660; FAX: (215) 496-9321. Owner: Joe Tarsia. Manager: Frank McNulty.

SNOW SOUND; OLVP; 441 Baileyville Rd.; Middlefield, CT 06455; (203) 349-8211. Owner: Bradford Snow. Manager: Robert Neumann.

SOUND ON SOUND RECORDING INC.; APPV; 322 W. 45th St.; New York, NY 10036; (212) 757-5300. Owner: David Armlen. Manager: David Armlen.



**SOUND TECHNIQUES INC
Boston, MA**

SOUND TECHNIQUES INC.; APPV; 1260 Boylston St.; Boston, MA 02215; (617) 536-1166; FAX: (617) 536-4446. Owner: Lance Duncan. Video Tape Recorders: Sony BVH-3100, Sony BVW-70, (4) Sony VO-5850, Sony EVJ-800. **Video Monitors:** (2) Sony PVM-2530, Sony PVM-2030, Sony PVM-1942 G. **Switchers/editors:** (2) Solid State Logic ScreenSound Digidesign Sound Tools, TimeLine/SSL System Supervisor. **Synchronizers:** (3) TimeLine Lynx. **Audio Recorders:** (2) Sony 3324A digital, Sony APR-24 analog, Otari MX-70 w/dbx. **Audio Mixers:** Neve V36, SSL 4056 G w/Total Recall. **Soundstages:** Studio A: 37'x21', Studio B: 30'x17', Studio C: 10.6'x7'. **Other Major Equipment:** Allen and Heath Sabre console w/MIDI muting 32x16, (6) analog 2-track recorders of various makes, (5) digital 2-track recorders of various makes, Magna-Tech M 10036-4 film recorder/dubber. **Rates:** \$-50/hour-\$325/hour. **Specialization & Credits:** Sound Techniques Inc. brings a new standard of audio post-production for video to the New England area. Its new location in Boston's Back Bay houses three studios that offer picture lockup capability via the TimeLine Lynx System, so that virtually any sound-to-picture task can be accomplished, be it scoring, sound effects editing, ADR, Foley or final mix. Central to this system is the SSL ScreenSound, a powerful tool for editing and mixing of soundtracks to picture. Multitrack digital (up to 48 tracks), 24 analog, 16-track analog and all the common 35mm and 16mm mag-film formats are also available through a machine room that is central to all three studios. Offering original compositions and sound design, notable clients include Coca Cola, McDonalds, NE Telephone, Disney, WNBC, Lotus, Discovery Network and the Learning Channel, to name a few.



**RON SPERLING
PRODUCTIONS LTD**

10 JONES ST NYC, NY 10014 212-691-3591

MUSIC VIDEOS/LIVE MULTI-CAM
FILM VIDEO

**RON SPERLING PRODUCTIONS LTD.
New York, NY**

RON SPERLING PRODUCTIONS LTD.; VPF, OLVP; 10 Jones St.; New York, NY 10014; (212) 691-3591. Owner: Ron Sperling. Manager: Liz Zettel, production manager.

SYNC SOUND INC.; APPV; 450 W. 56th St.; New York, NY 10019; (212) 246-5580. Owner: Bill Marino, Ken Hahn. Manager: Sherril Fernandez. Video Tape Recorders: Sony BVH-2000 1" w/Dolby, Sony BVH-2830, Sony D-2, Sony BVU-85CSP, VHS Hi-fi, Betacam SP. **Video Monitors:** (2) Panasonic 10C" video projection system, Sony. **Switchers/editors:** (4) AMS AudioFile Plus w/4-hour memory, NED PostPro. **Synchronizers:** Proprietary edit system allowing lockup, edit rehearsal and editing to subframe accuracy of all audio, video and digital machines, CMX-compatible auto conform. **Audio Re-**
—LISTING AND PHOTOLOGO CONTINUED ON NEXT PAGE

STUDIO FOR LEASE

Large studio in Sydney, Australia. Well-established (11 yrs), possibly available March 92. Whole building, city area, parking, completely equipped, Studer A800 24-trk plus nearly new Tascam ATR-80 24-trk, customized Harrison MR2, sync lock, video, automation. Virtually all mics and outboard equip. Studio has recorded many hits. Past sales up to approx. AUS \$15,000 per wk. Room for additional small studio. May suit two engineer partners, label, prod. company, or other. 5 yr lease, asking for offers around U.S. \$12,500 per month. Applicants must have substantial backing.

Phone or FAX in Connecticut, USA
(203) 227-0565

USE READER SERVICE CARD FOR MORE INFO.

**GO DIGITAL
FOR PEANUTS**
R-DATS AS LOW AS \$689.00 \$596.00
NATIONAL SOUND AND VIDEO
CALL 1-800-541-9140

Professional Audio for the Northwest United States

AUDIO Images

- Audio for Film and Video
- Multi-Track Recording
- Digital Audio Workstations
- Sound Reinforcement
- Computer Music Systems
- Tape and Accessories

70 Oak Grove Street, San Francisco, California 94107
Tel: (415) 957-9131 • Fax: (415) 957-1531

550 Mercer Street, Suite 130 Seattle, Washington 98109
Tel: (206) 285-9680 • Fax: (206) 283-9744

Davis Business Center 4370 N.E. Halsey Street
Portland, Oregon 97213
Tel: (503) 295-5948 • Fax: (503) 386-4062

USE READER SERVICE CARD FOR MORE INFO.

CASSETTE INSERTS IN 7 DAYS



CS Printing

111 Oak Lawn Ave.
Dallas, Texas 75207
(214) 747-8705
FAX: (214) 748-9922

VIDEO PRODUCTION & POST PRODUCTION



—LISTING CONTINUED FROM PREVIOUS PAGE

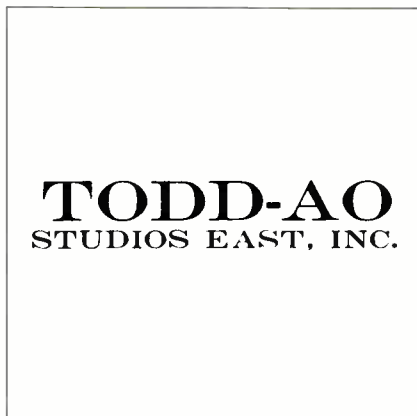


SYNC SOUND INC.
New York, NY

corders: Sony PCM-3348 48-track digital, Sony PCM-3324 24-track digital, Sony PCM-1630 2-track digital, F1 and time code R-DAT digital, Otari MTR-90 w/24/16/8-track heads, Otari MTR-20 4-track, center-track tc, stereo and mono Nagras, MTM 16/35mm magnetic film recorder, Nagra IV STC, AMS AudioFile, PostPro, cart machines, Nakamichi audio cassettes. **Audio Mixers:** SSL 6000 G Series automated w/ stereo modules, SSL 4000 E Series automated, Sony MXP-3036. **Other Major Equipment:** Lexicon 224X w/LARC, Dolby SP 24, Dolby CAT 43, Dolby SR, Dolby Surround mixing, Neve stereo limiter, dbx subharmonizer synthesizer, Tube-Tech PE-1B, Sontec EQ, AMS 15-80, Yamaha DX7, Roland EQ, Ellison noise reduction, Eventide H3000. **Rates:** Call for information. **Specialization & Credits:** Nominated for numerous TEC Awards and recipient of the 1991 Best Audio Production Mixer Award, Sync Sound is a full-service, audio post-production house featuring a staff of Emmy Award-winning sound editors and mixers. Sync Sound is specifically designed to accommodate editing and mixing-to-picture (digital or analog). Facilities include (5) non-linear digital sound editing suites, (4) mixing rooms, ADR (looping)/Foley stage, a huge automated sound effects library, and sound design suite. Sync Sound performs a wide variety of services for network and cable programming, home video, albums and commercials.

TAPESTRY SOUND & RECORDING; APPV; 151 W. 19th St. 4th Fl.; New York, NY 10011; (212) 741-0076; FAX: (212) 929-3163. Manager: Annie Sophor.

TEL-E-VUE PRODUCTIONS; VPP/E, OLVP; Box 217 Old Route 17; Ferndale, NY 12734; (914) 292-5965. Owner: Paul Gerry. Manager: Patricia Gerry.



TODD-AO
STUDIOS EAST, INC.

TODD-AO STUDIOS EAST
New York, NY

TODD-AO STUDIOS EAST; APPV; 259 W. 54th St.; New York, NY 10019; (212) 265-6225; FAX: (212) 247-5206. Owner: Todd-AO Corp. Manager: Richard Hassenein, Steve Castellano. Synchronizers: (3) Magnatech 8-LB interlock system, Magnatech EL-2 electronic looping system, (2) Lynx film modules, (5) Lynx SAL modules. **Audio Recorders:** Otari MTR-90 24-track, (2) Otari MTR 12 2-4-track w/center track time code, (4) mono recorders, Nagra stereo, Nagra mono, Sony TCD-D10 Pro Portable DAT. **Audio Mixers:** Custom Quad-Eight/Westrex w/Flying Faders and 52x24x24; SSL 5000 G series automation, Total Recall, Instant Reset, 60x32x32; SSL 5000 ADR 4x8x24. **Other Major Equipment:** Film Recorders: Magnatech high-speed, (6) 35mm 6x, (8) 35mm 4x, (5) 35mm 3x, (6) Stripe/16mm, (2) 16mm 2x. Film Playback Dubbers: Magnatech high-speed, (10) 35mm 6x/4x, (20) 35mm 4x/3x, (18) 35mm 3x/stripe, (32) stripe/16mm. (2) Audio Transfer Rooms All mag formats and tape formats with time code. Optical and Quality control: RCA stereo camera w/ Nuoptix electronics LCRS monitoring, RCA mono camera, RCA 16mm camera. Editing Rooms: Spacious rooms for 35mm and 16mm. Screenings: All formats for 35mm and 70mm, 45 seats. Noise Reduction: (184) Dolby A, 24-channels SR. **Specialization & Credits:** A bi-coastal company servicing the industry in sound re-recording, ADR/Foley, transfers and editing facilities for feature films, documentaries and television. Our Studio C is a large Hollywood-style mixing/screening studio equipped with THX monitoring. Mixes can be monitored in 70mm split or mono surround, Dolby stereo, TV stereo, mono and all formats of digital. Our Studio D is a Dolby stereo, TV stereo and mono room. Studio E is an ADR/Foley room capable of film or video rear projection while recording to 6-track mag or 24-track tape with 1/4" backup. A phone patch enables the talent to be at our studio with direction elsewhere. Newly constructed transfer facilities are equipped to accommodate any format of mag or tape. Our Stereo Optical room is Dolby stereo-equipped and can A/B optical prints to mag masters for quality control. Studios: Studio C: THX-64'x37'x25'. Studio D: 45'x26'x12'. Studio E: 26'x19'x12'. Control E: 15'x19'x10'.

VIDEO LABS CORPORATION; VPP/E; 15237 Display Ct.; Rockville, MD 20850; (301) 217-0000. Owner: Carl Montuori. Manager: Harry Zalewski.

THE VIDEOCENTER OF NEW JERSEY INC.; VPF, VPP/E, OLVP, APPV; 228 Park Avenue; East Rutherford, NJ 07073; (201) 935-0900. Owner: Frank O'Connell, Bob Camitta, Bob Schaffner. Manager: Bob Schaffner. Video Tape Recorders: (2) Sony DVR-20, DVR-28 digital; (3) Sony BVH-2000 1", (3) Sony BVW-75, (2) Sony BVW-70 Betacam SP; Sony BUW-800 3/4" cassette, (3) Sony BVW-50 Betacam SP field recorders. **Video Monitors:** (2) Shibusoku CM93A1, (2) Sony PVM-1960, (2) Sony BVM-1291, BVM-12701; (6) Sony—BVM-1201, PVM-1270, 3020, 8221. **Switchers/editors:** (2) Grass Valley 200, 100 group switcher, Sony BVE-5000 editing system, Sony BVE-910 editing system. **Video Cameras:** (3) Sony BVP-7 CCD, (2) Sony BVP-3. **Synchronizers:** Sony APR-5003/BVE-500 audio 1/4" direct-to-editor. **Video Effects Devices:** Ampex ADO-2000 digital optics, Abekas A-52 digital effects. **Audio Recorders:** Sony APR-5003 2-track 1/4" w/center track time code, Otari 5050 BII 2-track 1/4". **Audio Mixers:** Altec 1678C gated 8x2, Panasonic/Ramsa 8616 16x2, Sony MXP-290 8x2, Yamaha M406 6x4. **Soundstages:** 24'x24'x12' w/hard cyc (full TV insert stage). **Other Major Equipment:** Sony BVX-30 color corrector/noise reducer, Zaxcom HCP400 tbc master control station, Compositon digital F/X computer graphic workstation, Ultimatte 300 chromakey system.

THE VIDEOHOUSE INC.; VPF, VPP/E, OLVP; 975 Greentree Rd., Ste. 200; Pittsburgh, PA 15220; (412) 921-7577; FAX: (412) 921-6937. Owner: Ron Bruno. Manager: Chuck Morse.



VIDEO MIX
New York, NY

VIDEO MIX; APPV; 123 W. 18th St.; New York, NY 10011; (212) 627-7700; FAX: (212) 727-3075. Owner: CP Sound Inc. Manager: Kathleen Spellman-Krause. Video Tape Recorders: Sony DVR-10 D-2, Sony BVW-75 Beta SP, (2) Ampex VPR-6, (5) JVC 850 3/4". **Video Monitors:** Ikegami TM-20, (2)

Mitsubishi 35". **Synchronizers:** (2) Soundmaster 8 machine "Smart Sync" systems. **Audio Recorders:** (3) Otari MTR-9024-track, (7) Otari MTR-122-1/4-track, Otari MX-70 16-track. **Audio Mixers:** Sony MXP-3000 w/automation, Artek Mozart w/automation, SoundWorkshop 34 w/automation. **Other Major Equipment:** Digidesign Digital Workstation, 4-track online interlock 1635 Mag, D-20 online DAT recorder, Dolby SR on all recorders. **Specialization & Credits:** Certified Dolby Surround, all-Tannoy room. Audio-for-video post-production specializing in SFX, laugh tracks and music scoring. World's finest SFX collection, all major music libraries. Full audio duplication and fulfillment capability. Interformat audio/video/multitrack/Dolby/dbx dubbing. International multilingual tracks—our secret specialty.

Southeast

Alabama, Florida, Georgia, Kentucky, Louisiana,
Mississippi, North Carolina, South Carolina,
Tennessee, Virginia, West Virginia

ALLEN-MARTIN PRODUCTIONS; *VPF, VPP/E, OLVP, APPV*; 9701 Taylorsville Rd.; Louisville, KY 40299; (502) 267-9658. Owner: Ray Allen, Hardy Martin. Manager: Bill Porter.

AMERICAN SOUND & VIDEO CORPORATION; *VPP/E*; 2225 Faulkner Rd. NE; Atlanta, GA 30324; (404) 633-4577. Manager: Peter Thomason.

ARDENT TELEPRODUCTIONS INC.; *VPF, VPP/E, OLVP, APPV*; 2000 Madison Ave.; Memphis, TN 38104; (901) 725-0855. Owner: John Fry. **Video Tape Recorders:** (3) Sony DVT-10 D-2, (3) Hitachi HR-200B 1", Ampex CVR-75 Beta SP, Sony BW-5 Beta SP. **Switchers/editors:** Grass Valley Group 200-2, CMX 3600 controller. **Video Cameras:** (2) Hitachi SK-91, Ikegami EC-35, Sony BVP-50, Arriflex SRII E. **Synchronizers:** Adams-Smith Zeta-3, TimeLine Lynx. **Video Effects Devices:** NEC System 10 3-axis DVE. **Audio Recorders:** Mitsubishi X-850 digital, (2) Mitsubishi X-86 digital, (2) MCI JH-24 analog, (3) MCI JH-110 analog. **Audio Mixers:** Neve VR60 48x48, Solid State Logic 6040E 40x32, Neve V 40x48. **Other Major Equipment:** Verigo 3-D animation and Paint system, Fairlight Series III computer music instrument, Studer Dyaxis audio workstation.

AUDIO PRODUCTION CENTER; *APPV*; 3838 Oakcliff Industrial Ct.; Atlanta, GA 30340; (404) 242-7678; FAX: (404) 242-0278. Owner: Salvatore Nappo. Manager: Laurie Nappo.

AUTOMATED BROADCAST PRODUCTIONS; *VPF, VPP/E, OLVP*; 1440 Kennedy Causeway Ste. 304; Miami Beach, FL 33141; (305) 864-4800. Owner: Alden Shipley. Manager: DJ Smith. **Video Tape Recorders:** JVC 6650 3/4" U-matic, JVC 8250 3/4" U-matic, Sony BVU-800 3/4" U-matic, Sony VO-8800 3/4" U-matic (field), (2) Sony VP-5000 3/4" U-matic. **Video Monitors:** (3) JVC C-1483UM PMR, Panasonic BT S1900. **Switchers/editors:** (2) Convergence VE-93 edit contr. **Video Cameras:** Panasonic WWF 200" broadcast, Panasonic V-3 CVC, SVHS CVC. **Video Effects Devices:** Newtek Video Toaster. **Audio Mixers:** Ross 20x2 20-channel audio board, Shure P-MM 4-channel audio mix. **Other Major Equipment:** Sony Betacam 3 CCD BVP-5 (chip) w/Beta Back 1WA.

CENTURY III AT UNIVERSAL STUDIOS FLORIDA; *OLVP, VPP/E, APPV*; 2000 Universal Studios Plaza; Orlando, FL 32819-7606; (407) 354-1000. Owner: Ross M. Cibella, president. Manager: Pam Tuscany Lapp, dir. sales/marketing. **Video Tape Recorders:** (5) Sony BVH-2000, Sony DVR-1000, (4) Sony DVR-10. **Video Monitors:** (2) Sony BVM-1910A, Sony BVM-1915. **Switchers/editors:** EdiPlex editing system, (2) Grass Valley 300-3B switcher, Grass Valley 100-N. **Synchronizers:** (2) TimeLine Lynx, Alpha Audio Boss machine controller. **Video Effects Devices:** (2) GVG Kaleidoscope DPM-1 2-channel system, (2) GVG 300-3B switcher w/3 effects bank. **Audio Recorders:** (2) Sony 3324 24-track digital, Otari MTR-10 2-track w/center tc, (3) Sony APR-5003, (2) NED PostPro direct-to-disk system. **Audio Mixers:** Solid State Logic 4000 w/G Series automation, Soundcraft 600, Soundcraft Delta 200. **Other Major Equipment:** Magna-Tech 636 3-track film recorder, (2) Nagra T-audio 2-track w/TC resolver.

CRAWFORD POST PRODUCTION; *VPP/E, APPV*; 535 Plasamour Dr. NE; Atlanta, GA 30324; (404) 876-7149. Manager: Charles Humbard.

CREATIVE VIDEO INC.; *VPF, VPP/E, OLVP, APPV*; 1465 Northside Dr., Ste. 110; Atlanta, GA 30318; (404) 355-5800. Owner: Jim Rocco, Guy Davidson. Manager: Barry Sikes.

CYPRESS PRODUCTIONS; *VPF, VPP/E, OLVP*; #5410 Mariner Street; Tampa, FL 33609; (813) 289-6115. Owner: The Cypress Group. Manager: George Cornelius.

DIXIELAND PRODUCTIONS INC.; *VPF, VPP/E, OLVP, APPV*; 3440 Oakcliff Rd., Ste. 104; Atlanta, GA 30340; (404) 458-1168. Owner: Richard Rex. Manager: Glen Fisher.

DOPPLER STUDIOS; *APPV*; 1922 Piedmont Cir.; Atlanta, GA 30324; (404) 873-6941. Owner: Peter Caldwell. Manager: Bill Quinn.

GOLD DUST FILM/VIDEO PRODUCTIONS; *OLVP*; 12750 NW 27 Ave., Ste. 56; Miami, FL 33167; (305) 687-4250. Owner: Wil Baskins. Manager: Turk Harley.

IMAGE RESOURCES INC.; *VPP/E, OLVP*; 4545 36th St.; Orlando, FL 32811; (800) 393-4300. Owner: Bob Brook. Manager: Randy Noble. **Video Tape Recorders:** (2) Sony BVW-75 Betacam SP editors DT, (2) Sony BVW-65 Betacam SP player DT, (2) Sony BVW-35 Betacam SP portable, (3) Sony VO-8800 U-matic 3/4 SP portable. **Video Monitors:** Mitsubishi 35", Sony PVM-1910 19" production, Sony PVM-8020 8" field, Sony PVM-1341 13" production. **Switchers/editors:** Sony BVS-3200, Sony BVE-910 controller, JVC KM-2500. **Video Cameras:** Sony DXC-M7 3 CCD, Sony BWV-300 Betacam SP CCD, Sony DXC-3000 3 CCD, Ikegami HL-79EAL. **Video Effects Devices:** Sony DME-450 digital effects. **Audio Mixers:** Sony MXP-290 8-channel. **Other Major Equipment:** In-scriber graphics titling/special effects, Sony M-7 2, 3, 4-camera rack, Sony 3/4" SP editing fly package, Sony Betacam SP editing fly package.

KNOWLES VIDEO INC.; *VPF, VPP/E, OLVP*; 2003 Apalachee Pkwy., Ste. 204; Tallahassee, FL 32301; (904) 878-2298; FAX: (904) 656-0119. Owner: Karl Knowles. Manager: Guy Kathie.

LIMELITE VIDEO INC.; *VPP/E, APPV*; 7355 NW 41st St.; Miami, FL 33166; (305) 593-6911. Owner: Limelite Video. Manager: Michael Garrett.

NATIONAL TELEPRODUCTIONS INC.; *VPF, VPP/E, OLVP*; 5022 50th Way; West Palm Beach, FL 33409; (407) 689-9271; FAX: (407) 640-4677. Owner: R.M. Peterson. Manager: Mary Eddy.

PHOENIX PRODUCTIONS INC.; *OLVP, APPV*; 2049 W. Broad St.; Richmond, VA 23220; (804) 358-3854; FAX: (804) 358-9496. Owner: Jay Clayton. Manager: Jay Clayton.

THE POST GROUP AT THE DISNEY/MGM STUDIOS; *VPP/E, APPV*; Roy O. Disney Production Center; Lake Buena Vista, FL 32830; (407) 560-5600. Manager: Jack Peter (general manager). **Video Tape Recorders:** (9) Sony DVR-18 D-2, (11) Sony BVH-2000 1", (10) Sony BVW-65 8-75 Betacam, Sony DVR-1000 D-1. **Video Monitors:** (6) Sony BVM-1910. **Switchers/editors:** (2) Grass Valley GVG-300, (2) Grass Valley GVG-200, (4) CMX 3600 edit systems. **Synchronizers:** Synclavier. **Video Effects Devices:** Compositum by Digital Effects w/ Abekas A-64, (3) Paint FX systems by Digital Effects, Grass Valley 2-channel Kaleidoscope with Kurl, Abekas A-62 digital disc recorder. **Audio Recorders:** (4) Sony 3324A digital 24-track, Otari MTR-9011, (3) Sony 5000 2-track, (2) Sony PCM-3402 digital 2-track, (2) Nagra T 2-track. **Audio Mixers:** SSL 5000M, 96-input console w/moving fader automation, Total Recall and instant reset; Sony MXP-3000 36-input; (4) Sony MXP-2000 audio 12-channel mixing consoles. **Other Major Equipment:** Chyron 4200, Ultimatte V, Telecine Suite w/Rank Cintel, Quantec room simulator, Publison infernal machine 90, TC Electronic 2290, Lexicon 480L.



PRODUCTION PLUS
Birmingham, AL

PRODUCTION PLUS; *VPF, VPP/E, OLVP*; 1710 29th Ct. South; Birmingham, AL 35209; (205) 879-2853. Manager: Jerry Flippin. **Specialization & Credits:** Versatility is the key in a post-production facility like Production Plus. Our goal is getting the most out of a suite while creating a very productive atmosphere for the client. With this concept, Production Plus also adds a versatile, creative work force to guarantee absolute quality. The online suite with Sony Betacam, Betacam SP, 3/4 SP and 1", all controlled by the Sony 9000 edit/controller combined with free-form graphics from the Quanta Delta One Plus with Logo Compose, start to provide unlimited creative control. To further that control there is the new Abekas A-51 for digital effects, a Grass Valley 200-2 production switcher, audio console, color key camera and a full range of options to assist in any edit situation. To complement the production

—LISTING CONTINUED ON NEXT PAGE



ACE MUSIC CENTER

THE PRO'S CHOICE
FOR PROFESSIONAL
EQUIPMENT FOR
OVER 30 YEARS.

CALL ACE
AND FIND OUT WHY

1-800 446-4ACE

13630 WEST DIXIE HWY.
N. MIAMI, FLA. 33161

USE READER SERVICE CARD FOR MORE INFO.

AUDIO / MIDI SPECIALISTS

- ✓ KNOWLEDGABLE
- ✓ ALL MAJOR LINES
- ✓ DISCOUNT PRICING
- ✓ LARGE INVENTORY



MIDI Hardware & software
Digidesign • JL Cooper
Performer • Cakewalk • Finale
Opcode • DR T • Passport
synths & samplers • Akai
Emu • Korg • Roland • Yamaha



24/16/8 trk digital/analog
DAT • consoles • processors
direct to disc recording
automation retrofits
synchronizers • monitors

LENTINE MUSIC
PROFESSIONAL
216 741-1400
FAX 216 741-5111

10-8 Mon-Thu, 10-5 Fri & Sat

GENUINE AMPEX PARTS

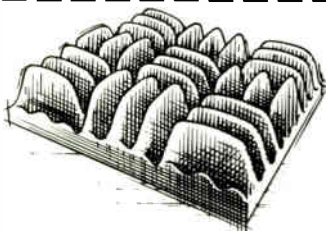
"the ONLY authorized source"

800
553-8712
818-994-6602 in CA

"Ask About
our
Maintenance
Company Discount
Program"

Authorized sales
and/or service for
OTARI, SONY, TEAC

USE READER SERVICE CARD FOR MORE INFO.



SONEX!

The standard in absorption material.

- Patented SONEX pattern
- Tremendous performance
- Easy to install

Find out how SONEX can work for you.

Free
Acoustical
Information
Packet!

illbruck

SONEX Acoustical Products Division
3800 Washington Avenue North
Minneapolis, MN 55412

1-800-662-0032

VIDEO PRODUCTION & POST PRODUCTION



—LISTING CONTINUED FROM PREVIOUS PAGE

needs. We have an audio suite with 8 tracks, sound effects, and a cleared music library. Location production becomes hassle-free with the image quality of the Sony BVP-7 mastered on a Betacam SP recorder. As with any location production, all the necessary extras are available; audio, grip, lighting, etc. Clients in the past include Phillip Morris, CNN—Sports South, Miller Brewing, Alabama Museum of Natural History, Subaru South, Wohl Shoe Company, Emerald Coast Productions, Alabama Department of Conservation and many local and regional independent agencies and producers.

SONIC III INC.; VPP/E, APPV; 7162 SW 47th St.; Miami, FL 33155; (305) 662-3919. Owner: Hernan Polo, Ken Campbell. Manager: Hernan Polo, Ken Campbell.

VIDSAT COMMUNICATIONS INC. dba PLAZA VIDEO PRODUCTIONS; VPF, VPP/E, OLVP, APPV; 2313 Seven Springs Blvd.; New Port Richey, FL 34655; (813) 372-9005. Owner: Mark C. Wilson. Manager: Dawn M. Wilson.

WNOL-TV FOX 38; VPF, VPP/E, OLVP; 1661 Canal St.; New Orleans, LA 70112-2862; (504) 525-3838. Owner: Quincy Jones Broadcasting Inc. Manager: Madelyn Bonnot.

North Central

Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, Wisconsin

AMERICAN SOUND & VIDEO CORPORATION; VPP/E; 7300 Miller Dr.; Warren, MI 48092; (313) 268-5558. Manager: Paul Hayes.

AUDIO ART RECORDING STUDIO INC.; APPV; 403 S.W. 8th St.; Des Moines, IA 50309; (515) 282-3223. Owner: Dr. James Skinner, Patrick McManus. Manager: Keith Brown, chief engineer.

AUDIO-RABIUS INC.; APPV; 5408 N. Main St.; Dayton, OH 45415; (513) 277-6868; FAX: (513) 275-1296. Owner: John H. Rabiuss. Manager: Mike L. Pummell.

BUSBY PRODUCTIONS INC.; VPF, VPP/E, OLVP; 1430 Locust St.; Des Moines, IA 50309; (515) 244-0404. Owner: Busby Burnell. Manager: Don Flannery.

CHAPMAN RECORDING STUDIOS; APPV; 228 W. 5th St.; Kansas City, MO 64105; (816) 842-6854. Owner: Chuck Chapman. Manager: Gary Sutton.

CLASSIC VIDEO INC.; VPF, VPP/E, OLVP, APPV; 5001 E. Royalton Rd.; Cleveland, OH 44147; (216) 838-5377. **Video Tape Recorders:** (3) Sony D-2, (20) Sony 1", (20) Sony 5600 3/4", (6) Betacam SP. **Video Monitors:** Ikegami. **Switchers/editors:** (3) Calaway, Grass Valley. **Video Cameras:** (4) LDK 90, (2) LDK 900 w/44x1 zoom lens, NEC SP3. **Video Effects Devices:** Abekas A72 DVE, (3) Eclipse DSC (2-4000, 1-5500). **Audio Recorders:** Solid State Logic ScreenSound digital system, Otari 1" 8-track, MCI 1" 8-track, Fostex 16-track. **Audio Mixers:** Yamaha. **Soundstages:** 60'x70', 24'x22', 22'x19'. **Other Major Equipment:** Five-ton grip truck, Panther Dolly system. **Specialization & Credits:** A full-service production facility for studio and remote production, multiple-format editing, audio sweetening, duplication and syndication plus language translations, international standards conversions and closed captioning. Special features include: 60'x70' studio with 3-wall cyclorama. CCD cameras for studio and remotes. Five-ton feature grip truck with many extras. Panther camera dolly with 360-degree super jib arm. Offline edit suite with E.D.L. Three deluxe online edit suites with digital video effects and multitrack formats including D-2, Betacam SP, MII, 3/4" SP and 1". Full scenic design and construction. 3-D animation. Classic productions include prime-time broadcast series: David Frost: *The Next President* and *Talking With David Frost*; corporate sales and training presentations for: Firestone, Sherwin-Williams, Little Tikes, American Greetings, BP America; broadcast programs and commercials for: Consumer Direct, Progressive Insurance, Cleveland Cavaliers and many others.

CPI INC.; VPF, VPP/E, OLVP, APPV; 804 N. Milwaukee St.; Milwaukee, WI 53202; (414) 291-9666. Owner: James J. Kagan. Manager: Cindy Peschong.

CRYSTAL PRODUCTIONS; VPP/E; 1024 Blouin Dr.; Dolton, IL 60419; (708) 841-2622. Manager: Tim Dwyer, operations manager.

THE FILM HOUSE INC.; VPF, VPP/E, OLVP; 126 E. 6th St. #201; Cincinnati, OH 45202; (513) 381-2211. Owner: Ken Williamson. Manager: Lynn Thompson.

DON KLUGMAN COMMUNICATION; OLVP; 1446 N. Wells St.; Chicago, IL 60610; (312) 642-8284. Owner: Don Klugman. Manager: Don Klugman.

NORTHWEST POST & TRANSFER; VPP/E; 81 S. 9th St., Ste. 240; Minneapolis, MN 55402; (612) 339-POST. Owner: Northwest Teleproductions Inc. Manager: Mary Schultz.

POSTIQUE INC.; VPP/E; 23475 Northwestern Hwy.; Southfield, MI 48075; (313) 352-2610. President: Bernie Green. VP: Mary Suzanne Patek. Specialization & Credits: Postique is a video post boutique offering editorial, film transfer and animation services. Full-service editing with Avid, offline and online suites. Online formats are D-2, 1", and Betacam SP. Film transfer suite features Bosch FDL, Sunburst II film and tape color correction, real-time image stabilization, K-scope for X-Y and effects, and Nagra T-Audio. Shoot slides, artwork, transparencies, and animation with motion control on IMC animation stand. Paintbox V Series for graphics and animation. Audio post on premises.

RTG MUSIC; APPV; 130 E. 6th St.; Cincinnati, OH 45202; (513) 381-0506. Manager: Ed O'Donnell.

SILVER OAKS COMMUNICATIONS; VPF, VPP/E, OLVP, APPV; 824 17th St.; Moline, IL 61265; (309) 797-9898; (800) 842-0824. Owner: Corp. Manager: Greg Manten.

SNYDER FILMS & VIDEO; VPF, VPP/E, OLVP, APPV; 1419 First Avenue South; Fargo, ND 58103; (701) 293-3600. Owner: Meyer Broadcasting. Manager: Steve Acheson.

SOLID SOUND INC.; APPV; PO Box 7611; Ann Arbor, MI 48107; (313) 662-0667. Owner: R. G. Martens. Manager: J. W. Spencer.



STUDIO M
Saint Paul, MN

STUDIO M; APPV; 45 E. 7th St.; Saint Paul, MN 55101; (612) 290-1453; FAX: (612) 290-1180. Owner: Minnesota Public Radio. Manager: Craig Thorson. **Video Tape Recorders:** JVC B250 3/4", Panasonic PV-1462 1/2" VHS, (2) Sony 1/2" Beta. **Video Monitors:** Sony 19". **Switchers/editors:** Digital and analog audio editing only. **Synchronizers:** BTX Cipher Shadow interlock system. **Audio Recorders:** (2) Sony 3402 2-track digital w/editor & SMPTE, 3MDMS 32-track digital, Otari MTR-90II 24-track analog, Otari MTR-12 w/SMPTE center stripe, (5) Otari MTR-10 2-track, (3) Studer A810 2-track, MCI JH-110 2-1/4-track. **Audio Mixers:** Neve V Series 36x36x36, Neve 5106 40x8x4. **Soundstages:** 45'x36'x25', 15'x15'. **Other Major Equipment:** Lexicon 480L digital effects system, Lexicon 224XL digital effects system, (3) misc. manufacturers R-DAT (SV-3700, DA-50, DA-30), (5) Dolby 363 A/SR noise reduction. **Specialization & Credits:** We specialize in superb acoustic recording. Spacious studios, a superlative signal chain and staff with knowledge and experience all add up. We know how to listen. Studio M offers a wide range of facilities and services, including digital and analog multitrack recording, synchronized audio post-production for video and DDD capabilities (recording, editing, Xfer and premastering all in digital domain). Studio M is actually three separate facilities, which can be reconfigured as needed to fit your project. Our largest acoustic space will comfortably accommodate a 40-piece orchestra. We also have proprietary audio lines to/from the World Theatre (a lovely reconstructed 800+ seat auditorium) for the highest-quality live concert recordings. Credits include: Host location/facility for the Disney Channel *A Prairie Home Companion* cable series. Ongoing live music broadcast for Minnesota Public Radio (including the #1 American classical broadcast *Saint Paul Sunday Morning*). Classical releases for

Virgin Classics (including 1990 Grammy winner recorded by staff engineer Preston Smith). Releases for MCA, Capitol, A&M, EMI London, Columbia and independent labels.

TAKE 1 PRODUCTIONS; VPF, VPP/E, OLVP; 5325 W. 74th St.; Minneapolis, MN 55439; (612) 831-7757. Owner: Teri Murphy. Manager: Rob Hewitt.

TRIO VIDEO; 700 N. Sangamon; Chicago, IL 60622; (312) 421-7060. Owner: Jack Walsh/Gary Meagher. Manager: Debra Zouvas. Specialization & Credits: Remote television production company, featuring four trucks, well-suited for all on-location production needs. TRIO has been specializing in sports, entertainment and corporate TV for the past ten years. Offering experienced crews with our state-of-the-art equipment, TRIO will help make your production a success. Debra Zouvas, production manager.



UNIVERSAL RECORDING CORPORATION
Chicago, IL

UNIVERSAL RECORDING CORPORATION; VPF, VPP/E, APPV; 32 W. Randolph, Ste. 1400 and 1500; Chicago, IL 60601; (312) 201-3150 (audio); (312) 855-1919 (video). Owner: Morris Kalish, Murray Allen. Manager: John Scherf. Video Tape Recorders: (1) Sony BVH-2000/BVH-1100, (4) Sony Betacam/SP BVW-75, (4) Sony BVU-800 3/4", Bosch B-Format 1". **Video Monitors:** Multiples of Sony 12" and 19" high resolution and R-G-B; Ikegami, Bosch and others 12", 19" etc. (14) Sony monitors. **Switchers/editors:** GVG 200, GVG 300, (3) GVG 1600, (3) AMS AudioFile, (3) PostPro, (3) Synclavier. **Video Cameras:** (3) Harris studio cameras w/Cannon lens, Ikegami HL-79, Hitachi CCD Chip camera. **Synchronizers:** (20) BTX Softouch, (2) TimeLine. **Video Effects Devices:** (3) AD0 2000-3000 Series w/concentration, (2) A-62 (100 second), (2) Ampex ESS, AVA Paintbox, GBF DVE, (2) Scribe Superscribe. **Audio Recorders:** (37) Magna-Tech, (20) 2-/32-track digital, (55) analog. **Audio Mixers:** Neve, SSL, Harrison, Sony, ADM, Ramssa. **Soundstages:** 40'x60'x20' w/full grid and dimmer package, 40'x40'x20' w/full grid and dimmer package, make-up rooms, men's and women's dressing rooms, producer's space. **Other Major Equipment:** Sony video projectors, ADR, optical disc—WORM—optional transfer, Symbolics 3-D computer graphic system, uplink and downlink. **Rates:** \$200-\$500/hour. **Specialization & Credits:** Mannheim Steam Roller *Fresh Aire #7*, Time-Life Books, *Uncle Buck*, *Man-o-War*. Full live transmission or cut-in via uplink. Also tape roll-uplink. VHS dubbing capabilities. Rank Mkllic film-to-tape SC-to-SC 16mm or 35mm—positive or negative.

VIDEO ARTS STUDIOS; VPF, VPP/E, OLVP, APPV; 1440 4th Ave. N.; Fargo, ND 58102; (701) 232-3393. Owner: Art Phillips. Mary Ann Phillips. Manager: Art Phillips.

VIDEO I-D INC.; VPF, VPP/E, OLVP, APPV; 105 Muller Rd.; Washington, IL 61571; (309) 444-4323. Owner: Sam B. Wagner. Manager: Gwen Wagner.

Southern Cal/Southwest
Arizona, Arkansas, Hawaii, Las Vegas, New Mexico,
Oklahoma, Southern California, Texas

AARON & LE DUC VIDEO; VPF, VPP/E, OLVP, APPV; 2002 21st St.; Santa Monica, CA 90404; (310) 450-8275; FAX: (310) 396-8265. Owner: Greg LeDuc. Manager: Greg LeDuc.

ADVANTAGE AUDIO INC.; APPV; 1026 Hollywood Way; Burbank, CA 91505; (818) 566-8555. Owner: Bill Koepnick, Jim Hodson. Video Tape Recorders: Ampex VPR-6, Sony VO-9800. **Video Monitors:** Sony 1042Q (10" diagonal) video projector, Sony 1342-Q, Pioneer SDP-503P (50" rear projection). **Switchers/editors:** (2) Digidesign Sound Tools recording/editing system. **Synchronizers:** Adams-Smith 2600. **Audio Recorders:** Otari MTR-100, Otari MTR-12, Sony 2500 DAT. **Audio Mixers:** Otari Sound Workshop Series 54/46, Studer 921. **Soundstages:** A: Dubbing 17'x33' (25' ceilings),

B: Foley 17'x20' (22' ceiling)—12 surfaces incl. water, C: Editing 11'x13'. **Other Major Equipment:** Dolby SR/A on all analog tape, DiskMix 3 moving tader automation, KRK 15A-01, 1002 and 703 audio monitors. Stiga Professional ping-pong table. **Rates:** Call for rates.

AMERICAN SOUND & VIDEO CORPORATION; VPP/E; 27790 Ave. Hopkins; Valencia, CA 91355; (805) 257-0700. Manager: Gerald Pool.

ASSOCIATED PRODUCTION MUSIC; APPV; 6255 Sunset Blvd., Ste. 820; Hollywood, CA 90028; (213) 461-3211; (800) 543-4276. Owner: Screen Gems/Zomba. Manager: Bill Brooks; Georgia Robertson, editor.

AUDIO RESOURCE HONOLULU; APPV; 1084 Young St.; Honolulu, HI 96814; (808) 526-3733. Owner: Tony Hugar, Milan Bertosa.



THE AUDIO SUITE
Glendale, CA

THE AUDIO SUITE; APPV; 1110-A W. Glenoaks Blvd.; Glendale, CA 91202; (818) 241-9090. Owner: Eric Sclar. Manager: Kevin Lange.

BEXEL CORPORATION; VPF; 801 S. Main St.; Burbank, CA 91506; (818) 841-5051. Specialization & Credits: With Bexel Corporation's worldwide experience and resources, you can always count on us to keep you on the leading edge of today's expanding video equipment markets. Bexel Corporation serves these markets through the equipment rental, sales and service divisions. Call today to receive information on Bexel Corporation and our unique blend of services.

WALLY BURR RECORDING; APPV; 1126 Hollywood Way, Ste. 203; Burbank, CA 91505; (818) 845-0500. Owner: Wally Burr. Manager: Ellen Burr.

CEREUS RECORDING; APPV; 1733 E. McKellips, Ste. #107; Tempe, AZ 85281. (602) 990-8163. Owner: Allen Moore. Manager: Dianne Moore.

CHACE PRODUCTIONS INC.; APPV; 7080 Hollywood Blvd., Ste. 515; Hollywood, CA 90028; (213) 466-3946; FAX: (213) 464-1893. Owner: Rick Chace. Manager: Robert Heiber. Specialization & Credits: Stereo remastering with Chace Surround Stereo. Proprietary equipment that creates true stereo even from composite sources. Titles include: *Rocky Horror Picture Show*, *Gone With The Wind*, *Yellow Submarine*, *Giant* and hundreds of others. Archival and sound restoration specialists with proprietary equipment for optical soundtrack transfers, featuring the Chace Optical Sound Processor for negative optical tracks. Digital audio room for music and effects track construction and augmentation. Digitally create music and effects tracks from composite sources.

CINESOUND CO. INC.; APPV; 915 N. Highland Ave.; Hollywood, CA 90038; (213) 464-1155; FAX: (213) 464-1820. Owner: William A. Layos, president. Manager: Brent Keast.

CREATIVE MEDIA; APPV; 11105 Knott Ave., Ste. G; Cypress, CA 90630; (714) 892-9469. Owner: Tim Keenan. Manager: Linda Keenan.

DESERT PRODUCTION CENTER; VPF, VPP/E, OLVP, APPV; 2235 W. Alice Ave.; Phoenix, AZ 85021; (602) 263-3400. Owner: Media America Corporation. Manager: William C. Lewis, General Manager.

DEVONSHIRE AUDIO/VIDEO; APPV; 10729 Magnolia Blvd.; North Hollywood, CA 91601; (818) 985-1945. Owner: David and Delores Mancini. Manager: Kelle Creamer. Specialization & Credits: Dolby Surround room of TV, film or music. Live action post credits include *Hill High*, *Evening Shade*, *Talk Radio*, *Darkbackward*, *Plymouth*, etc. Animation post credits include DIC—such shows as *Captain Planet*, *GI Joe*, *New Kids on the Block*, *Wizard of Oz*, *Super Mario Three*. —LISTING CONTINUED ON NEXT PAGE

"AUDIOPHILE QUALITY"...

EUROPADISK LTD.

U.S.' MOST COMPLETE FACILITY!

Deal with professionals & get the best at no extra cost!

• **COMPACT DISCS**

Complete Low-Cost Packages!

• **CASSETTES**

Finest European Equipment - Lyrec/Studer/Tachos-90 Dolby HX-PRO

• **DMM VINYL MASTERING & PRESSING**

Cleanest, Hottest 12" Vinyl!

• **GRAPHIC DESIGN & PRINTING**

In-House Computer Design Dept. - Original Art, Layout, Typesetting, Color Separations

• **MASTERING STUDIOS**

We do major-label work - CD Premastering, Neve-DTC Digital EQ, Compression, Limiting; Sony Digital Editing, Format & Sampling-Rate Conversion



Call or FAX for our Brochure

EUROPADISK LTD.

**75 Varick Street, New York, NY 10013
(212) 226-4401 FAX (212) 966-0456**

SOUND EFFECTS!

Audio Action presents File Effects, the new digitally recorded effects library. File Effects features atmospheres ranging from nature's elements to urban settings.

Visit us at NAB Booth #10651, or call for a free CD sampler of File Effects or our world famous production music.



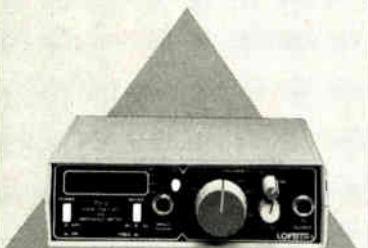
(800) 533-1293

4444 Lakeside Dr. Ste. 340, Burbank, CA 91505
FAX: (818) 845-8039

USE READER SERVICE CARD FOR MORE INFO.

GOLD LINE LOFT

NEW: LOFTECH TS-2 IMPEDANCE METER & AUDIO TEST SET



Impedance Meter, dB Meter
Audio Oscillator
& Frequency Counter

CONTRACTOR PRICES

Send for free catalog:

Box 500, West Redding, CT 06896
PH (203) 938-2588 FAX (203) 938-8740

VIDEO PRODUCTION & POST PRODUCTION



—LISTING CONTINUED FROM PREVIOUS PAGE

also Hanna-Barbera's *Bill and Ted's Excellent Adventure*, just to name a few. We specialize in audio-for-video, sweetening, mixing etc. Video studio library plus experienced mixers and editors. Post-production sales representative—Don Blocker.

D.L.H. STUDIOS; VPF, VPP/E, OLVP; 2900 Adams St., Ste. B-29; Riverside, CA 92504-4340; (714) 687-6654. Owner: Dennis Hocking. **Manager:** Dennis Hocking.

DUKE CITY STUDIO; VPF, VPP/E, OLVP; 4121 Cutler NE; Albuquerque, NM 87110; (505) 884-5151; (800) 225-6185. Owner: Jay Lefkowitz, president. **Manager:** Chad Chavez, sales manager; Michelle Thompson, office manager. **Video Tape Recorders:** Sony BWV-60, Sony BWV-65, Sony BWV-75, Sony BWV-25, Sony BVW-35, Sony BVH-3100, Sony BVH-500, Sony BVU-110, Sony BVU-950, Sony DVR-10, Sony VO-5800 3/4". **Panasonic AG-7500 SVHS, BVV-5 Beta SP dockable, Ampex SMC-200 slo-mo. Video Monitors:** (3) Ikegami TM 19-9, (5) Videotek 13" color, (15) Panasonic 9" B&W, (4) Sony BVM-1310, Sony PVM-1242Q, (6) Sony PVM-2030, (8) Sony PVM-8020 9" color, Sony PVM-1910, (4) Ikegami TM144 13" Hi Rez. **Switchers/editors:** Intergroup 902, Grass Valley 100CVN, Grass Valley 51EM, Grass Valley IPS100, Grass Valley 200. **Abekas A-82. Video Cameras:** (2) Ikegami HL-79EAL, (2) Ikegami HL-79DAL, Ikegami HL-95B, (2) Ikegami HK-357, (7) Ikegami HL-55, Cannon C120. **Video Effects Devices:** (3) Abekas A-53D w/Warp, Abekas A-62, Abekas A-72, Chyron 4200 EXB, Chyron Infinite system. **Audio Recorders:** Nagra, Tascam 4-track, Fostex 2-track, Panasonic SV-3900 DAT recorders w/remotes. **Soundstages:** 60'x40', 18' ceiling, hard cyc, 400-amp power, dressing room, makeup room, prop room, production offices. **Other Major Equipment:** 16' 4-cam remote truck, RTS intercoms, Arriflex film equipment, Cetec Vega wireless intercom, grip trucks, Fisher camera dollies, Tulip Crane, BeBee generators, full Matthews grip equipment, LTM HMI lighting, Mole lighting, Doorway dollies, Tyler camera mounts, complete Beta SP ENG pkgs., teleprompters, two-way communication, Cammate camera boom.

EDITDROID: LUCASARTS EDITING SYSTEMS; 3000 W. Olympic Blvd., Ste. 1550; Santa Monica, CA 90404; (310) 315-5050. Owner: LucasArts Entertainment. **Manager:** Matthew Mitchell.

EFX SYSTEMS; APPV; 919 N. Victory Blvd.; Burbank, CA 91502-1633; (818) 843-4762; (213) 460-4472; FAX: (818) 848-0706. Manager: Paul Rodriguez, VP/general manager, Sue Coplin, director of sales. **Specialization & Credits:** Digital audio post-production for television and film. The most comprehensive and advanced digital audio equipment from New England Digital and Sony. Award-winning mixers and editors fluent in sprockets and electronics. Facilities include edit and prelay; ADR/Foley; television mixing and a fully digital, THX-approved film dubbing stage. Recent credits: Features: *Talk Radio*, *Torch Song Trilogy*, *To Sleep With Anger*, *Deep Cover*, *Poison Ivy*, *Live Wire*, *The Rapture*. Television: *Dark Justice*, *Silk Stalkings*, *Bill & Ted's Excellent Adventure*, *Peter Pan and the Pirates* (animation), *You Must Remember This*, *Thirtysomething*, *The Days and Nights of Molly Dodd*. Non-theatrical: "Journey into Nature," Otta Park, Japan; "MuppetVision Pre-Show," Disney-World, Florida; "SciFi Drive," DisneyWorld, Florida; "Tierra De Gracia & Concierto Por La Tierra," '92 World's Fair, Spain.

—PHOTO/LOGO TOP OF NEXT COLUMN

THE ENTERPRISE; APPV; 4620 W. Magnolia Blvd.; Burbank, CA 91505; (818) 505-6000. Owner: Craig Huxley. **Manager:** Thom Brown. **Video Tape Recorders:** (3) Sony BVH-9850, JVC 8250. **Video Monitors:** (2) 9"X12" screens. **Synchronizers:** (15) Lynx. **Audio Recorders:** (6) Studer A820 w/Dolby SR, (6) Sony 3348, (2) Mitsubishi X-880. **Audio Mixers:** (2) SSL G Series w/Ultimation, Neve VR 72. **Other Major Equipment:** (6) Lexicon 480, (10) Eventide H3000.

FACE BROADCAST PRODUCTIONS; VPP/E; 115 N. Hollywood Way, #101; Burbank, CA 91505; (818) 842-9081. Owner: Ron & Jamie Malvin.

525 POST PRODUCTION; VPP/E, APPV; 6424 Santa Monica Blvd.; Hollywood, CA 90038; (213) 466-3348. Owner: Steven Hendricks, president. **Manager:** Jerry Cancellieri, vice president, Laura Richard, exec. producer.

FRAMEWORK SOUND; APPV; 2414 W. Olive Ave.; Burbank, CA 91506; (818) 843-7042. Owner: Ken Dahlinger.

—SEE LISTING PREVIOUS COLUMN



ON THE BRIDGE
FOR THE INDUSTRY
FAX: 818-844-0000

THE ENTERPRISE
Burbank, CA

GROUP IV RECORDING INC.; APPV; 1541 N. Wilcox Ave.; Hollywood, CA 90028; (213) 466-6444. Owner: Angel L. Balestier. **Manager:** Lisa Burrows. **Specialization & Credits:** This legendary scoring facility (*Cheers*, *Quantum Leap*, *Havana*, *Back To The Future II, III*) also lends its audio expertise into the field of video-sweetening and audio post-for-video. Group IV's studios offer a state-of-the-art combination of prelay, ADR, Foley and mixing for all film and video formats (including mag interlock). Telecine, video streaming, dailies and other transfers can be provided. In addition to its other functions, Studio A is also available as a soundstage with or without multitrack music recording, and has been used for video shooting most recently by Tower of Power and The Temptations.

HARRISON WINTER PRODUCTIONS; APPV; 14272 Franklin Ave. Ste. 210; Tustin, CA 92680; (714) 730-8060. Owner: Dan Shattuck. **Manager:** Dan Shattuck.

INTERSOUND INC.; VPP/E, APPV; 8746 Sunset Blvd.; Los Angeles, CA 90069; (213) 652-3741. Owner: Ahmed Agrama. **Manager:** Ek, vice president, Kent Harrison Hayes.

MEDIA COMMUNICATIONS CORP.; VPF, VPP/E, OLVP; 2727 W. Southern Ave.; Tempe, AZ 85282; (602) 438-2959. Owner: Ann Bonanno, pres. **Manager:** Jim Pangborn, mktg.

METROPOST; VPP/E; 906 E. 5th St.; Austin, TX 78702; (512) 476-3876. Owner: R. E. Kooris. **Manager:** V. L. Hollister, J. S. Sharpe.

MIST MEDIA INC.; VPE, VPP/E, OLVP, APPV; 4144 Lanekershim Blvd. Ste. 100; N. Hollywood, CA 91602; (818) 508-9087. Owner: Wm. Mistretta. **Manager:** Mary Lee Smith.

NATIONAL VIDEO POST; VPP/E; 1360 N. Hancock St.; Anaheim, CA 92807; (714) 777-4200. Owner: Corporation (Jim Summers & John McEntee). **Manager:** James A. Summers. **Video Tape Recorders:** (2) Sony BVW-950, (2) Sony DTR-10 (D-2), (4) Sony VTR-3000/3100, (2) Ampex VPR-80, (6) Sony SP Beta 65.75. **Switchers/editors:** GVG 200-2 Switches, GVG 151 Edit Controller, GVG 131 Controller, Ampex Vista. **Video Cameras:** (4) Sony Varigam Matt Camera. **Video Effects Devices:** Ampex ADO 1000 w/all options, Prsm Pinnacle. **Audio Recorders:** Sony Reel-to-Reel, Fostex w/center track time code. **Audio Mixers:** (3) Soundcraft. **Other Major Equipment:** (2) Silicon Graphics Workstations, Vertigo Animation Software, (3) Mac Graphics True vision, Genie Graphics 2-D, 3M Router, all rooms interformat. **Rates:** Between \$150/Hr and 3300/Hr.

PGA MUSIC VIDEO PRODUCTIONS; VPF; 1128 12th St. #11; Santa Monica, CA 90403; (310) 393-4334. Owner: Patrick Armstrong, director. **Manager:** Billy Martin, production mgr.

PREMORE INC.; VPF, VPP/E, APPV; 5130 Klump Ave.; North Hollywood, CA 91601; (818) 506-7714. Owner: Subsidiary of Soir Cup Company. **Manager:** Robert Perry.

PRODUCERS POST; VPP/E; 2625 W. Olive Ave.; Burbank, CA 91505; (818) 841-6750. Owner: Hunt Jaffe Productions. **Manager:** Larry Guzy.

PRODUCTION MASTERS INC. (PMI); VPF, VPP/E, OLVP, APPV; 834 N. 7th Ave.; Phoenix, AZ 85007; (602) 254-1600. Owner: David Case. **Manager:** Mike Quinn.

RAVE VIDEO PRODUCTION FACILITIES; VPF, VPP/E, OLVP; 611 N. Orchard Dr.; Burbank, CA 91506; (818) 841-8277. Owner: Rex Olson. **Manager:** Rex Olson. **Specialization & Credits:** RAVE Video Production Facilities is a production, post-production facility offering broadcast-quality equipment and personalized service. We feature a 2,000-square-foot soundstage, multicamera control room, broadcast cameras, and support, lighting and grip equipment. Our edit suite features

digital video effects. Chyron graphics and the Newtek Video Toaster computer graphics system. RAVE specializes in bridging the gap between producer and facility by providing a complete production facility capable of taking a production from start to finish. RAVE's staff has extensive experience in the music industry and the production of live music performances, electronic press kits and instructional music videos. Some of our current clients include Motown, Curb Records, I.R.S. Records, American Record Distribution, Herbie Hancock, Starclix Inc., Hal Leonard Publishing Corp., Doom, and USA Music. In addition to providing high-quality production services RAVE produces original programming for the ever expanding broadcast, cable and home video markets.



SCOTTSDALE CONFERENCE RESORT
Scottsdale, AZ

SCOTTSDALE CONFERENCE RESORT; VPF, VPP/E, APPV; 7700 E. McCormick Pkwy.; Scottsdale, AZ 85258; (602) 991-9000. Owner: Scottsdale Conference Resort. Manager: Brian Court, Martin Dempsey, M. Floor. **Video Tape Recorders:** (5) Sony BVU-950, Sony BVU 920, (4) JVC CR-850U, (3) Sony VO-850. **Video Monitors:** Sony PVM-1220, (10) JVC TM-R9U, (2) Sony PVM-5310. **Switchers/editors:** Grass Valley VPE-B1, Grass Valley 1600-IL, Grass Valley Model 400, Convergence 204 editor. **Video Cameras:** (4) Sony DXC M7, Ikegami HL-79 DAL, Ikegami ITC-73D. **Synchronizers:** (2) Adams-Smit System 2600. **Video Effects Devices:** Grass Valley DPM 100 w/recursive memory and E-mem. **Audio Recorders:** Otari MX-70 16-track, Otari MTR-12CT w/center-track time code, (2) Otari MX-505048QII 4-track. **Audio Mixers:** TAC Synchron 24x16, Soundcraft 603 16x8. **Soundstages:** 17'x21'x14', 76'x76'x14'. **Other Major Equipment:** Topas 3-D animation graphics, complete dark room, multi-image staging and production, laser light shows. **Rates:** Call. **Specialization & Credits:** Specializing in video production, post-production audio-for-video, sound effects, audio production and original music composition. Located in luxurious resort setting with golf, tennis, complete health spa and fitness center with easy access to Sunbelt activities.

SCREENMUSIC STUDIOS INC.; APPV, 11700 Ventura Blvd.; Studio City, CA 91604; (818) 753-6040. Owner: Eiji Katayama. Manager: Jay Kaufman.

THE SOUND VENDORS INC.; APPV, 10707 Magnolia Blvd.; Woodland Hills, CA 91364; (818) 985-9774; FAX: (818) 985-9792. Owner: Larry Gonthue. **Video Tape Recorders:** Sony BVU-800, Sony VO-5800, Sony BVH-2000 1". **Video Monitors:** Protov BT-S1300 25", (2) Panasonic. **Synchronizers:** Otari ED-441C Universal resolver. **Audio Recorders:** Otari MTR-50 II 16-/24-track, Otari MTR-21 4-track, Otari MTR-12C 2-track, Tascam ATR-60-16. **Audio Mixers:** Harrison Raven 20x24, Tascam M-520. **Other Major Equipment:** BXT Synthe-600DS, BFX Softouch 4793, Lexicon 200 digital reverb, (2) dbx 16CX compressor/limiter. **Rates:** \$250 per laydown/layback, \$175 per prelay, \$275 per sweetening.

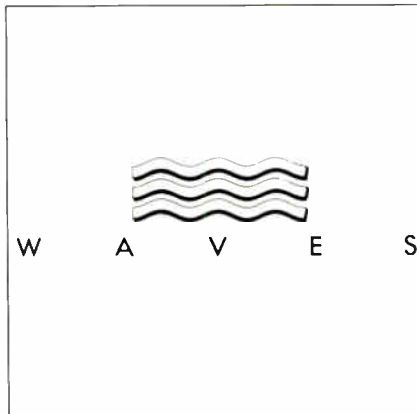
FRANK SWAFFER VIDEO SERVICES INC.; VPF, VPP/E, OLVP, APPV; 532 Apollo Rd.; Richardson, TX 75081; (214) 644-5089; FAX: (214) 907-9344. Owner: Frank Swaffer. Manager: Mike Dyal.

VIDEO-IT POST; VPP/E; 5000 Overland Ave., #6; Culver City, CA 90230; (213) 280-0505. Owner: John & Felisa Kohan-Mattick. Manager: Kassi Crews, Keri Slater.

VIDEO MEDIA PRODUCTIONS—DIVISION OF VISUAL COMMUNICATION INC.; VPF, VPP/E, OLVP; 2727 W. Southern Ave.; Tempe, AZ 85282; (602) 966-6545; (800) BETA-NOW. Owner: James Rinkanberger—president. Manager: Ann Bonanno.

VIDEO POST & TRANSFER INC.; VPP/E, APPV, 2727 Inwood Rd.; Dallas, TX 75235; (214) 350-2676; FAX: (214) 352-1427. Owner: Neil Feldman. Manager: Roy Powell. **Specialization & Credits:** New facility, convenient to Dallas Love Field Airport. Digital Video Masters offer clients superior post-production capability using new digital technology. V&T

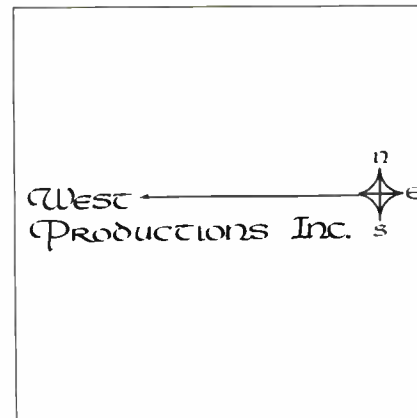
telecine features Rank Cintel's MkIII-C w/Digiscan 4, Accom D-1 still store, Accom D-1 noise reduction, Encore Video Industries PRISM SCC, Steadifilm, Nagra T-audio sync-up and Ultimatte 5. Transfers direct to all formats. Graphics/paint/animation: 5 suites, including DF/X "Composium" digital paint/production system and Vertigo Series 9 workstation-based 3-D animation. New online suites feature CMX OMNI editors, Abekas A-82 D-2 switchers, two-channel CVG Kaleidoscopes w/KURL and Combiner, ADC w/Concentrator and Infinity, proprietary dream™ computer-based, all-digital audio editing/mixing/sweetening/processing system, Abekas A-72 CGs, (2) Abekas A-60s, Abekas A-62, (9) Sony DVR-28/18 D-2 deck, Sony DVR-1000 (D-1), (9) Sony 1" decks, (6) BVW-75s, (2) BVU-850/SPs and a Pesa Series 5 routing system.



WAVES SOUND RECORDERS
Hollywood, CA

WAVES SOUND RECORDERS; APPV; 1956 N. Cahuenga Blvd.; Hollywood, CA 90068; (213) 466-6141; FAX: (213) 466-3751. Owner: Stewart Sloke, Bert Berdis, Alan Barzman. Manager: Stewart Sloke, Laura Straus. **Video Tape Recorders:** Sony BVH-3000 1", (2) Sony BVU-800 3/4", (3) Sony VO-7600 3/4", (3) Sony VO-5600 3/4", Panasonic AG1950 1/2" VHS. **Video Monitors:** Barco CVM-51, (5) Sony, Conrac. **Synchronizers:** TimeLine Lynx. **Audio Recorders:** (2) AMS AudioFile digital system, Studer A810 TC-PIL-FM, Sony/MCI JH-24 24-track, (2) Sony/MCI JH-110 8-track, (2) Sony/MCI JH-110 4-track, (7) Sony/MCI JH-110C 2-track, (5) Panasonic/Sony R-DAT. **Audio Mixers:** (2) Sony MXP-3000, Sony MXP-2000, Soundcraft 600. **Other Major Equipment:** Grass Valley sync generator, (4) Dolby A 361 NR unit, Sony, Lexicon, Yamaha, UREI, JBL, Neumann, AKG, Sennheiser, dbx, Orban, Alesis, Akai, Technics, Crown, Hafler, Symetric, Denon, Dorrugh, Sontec, EV, Revox, Shure, Loftech. **Sound effects libraries:** Sound Ideas, FX, BBC, Elektra, Audio Fidelity, Network, Valentino, Bainbridge (in CD format), Hannah-Barbera, Elektra, Network, Audio Fidelity, BBC (in LP format). **Music libraries:** KPM, Bruton, Sonotone, Themes, JW, Koka, Soundstage, Capital, Dewolf, Network, Cavendish, Fows, Parry, Selected Sound, Major, Valentino, Airforce, Conroy, Boosey Hawkes; (13) sound effects library/8 in CD format, (18) music library/14 in CD format.

WEBSTER COMMUNICATIONS; VPF, VPP/E, OLVP, APPV; 607 N. Ave. 64; Los Angeles, CA 90042; (213) 258-6741. Owner: Van Webster.

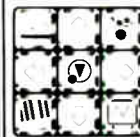


WEST PRODUCTIONS INC.
Burbank, CA

WEST PRODUCTIONS INC.; APPV; 2921 W. Olive Ave.; Burbank, CA 91505; (818) 841-4500. Owner: George (Ray) West, David West. Manager: David Rawlinson, VP: John Merten. **Specialization & Credits:** West Productions is a full—LISTING CONTINUED ON NEXT PAGE

It's not the technology, its the technique...

As the equipment grows more complex—service, support, and training become the factors separating the best dealers from the rest. Why settle for less than the best? Call Leo's.



PROFESSIONAL AUDIO SYSTEMS

We listen so you'll be heard.

**5447 Telegraph Ave. (510)
Oakland, CA 94609 652.1553**

USE READER SERVICE CARD FOR MORE INFO.

SALE! PLUS FREE ADHESIVE!

MARKERFOAM™ ACOUSTIC FOAM



GIANT 54" x 54"

Immediate Shipping

2" Reg. \$29.95 Now \$19.99 • 3" Reg. \$39.95 Now \$29.99! KILL NOISE QUICK!

High performance, full-size sheets of super high density Markerfoam. EZ mount. Blue or gray. Super-effective sound absorption for studios. Markerfoam offers best value, looks professional & is proven in studios worldwide. Request Foam-Buyers Guide Catalog, specs & free samples today. VISA, MC, AMEX, COD, PO's. QUANTITY DISCOUNTS.

MARKERTEK JUMBO SOUND ABSORB BLANKETS



Heavy-duty 72"x80" padded blankets absorb sound wherever they're hung or draped. Fabulous for stage, studio & field use. Top professional quality at a super saver price! Weight: 6 lbs. Black, \$19.99.

MARKERTEK BLADE TILES™

HIGH PERFORMANCE
LOW, LOW COST!

\$2.99 per tile, 16x16x2". America's best acoustic tile value, only from Markertek! Charcoal. Also available 16x3" as shown, \$3.99 each.

MARKERSTIK™ foam adhesive. FREE with any Foam purchase in this ad! Limited offer. A \$5.95 per tube value.



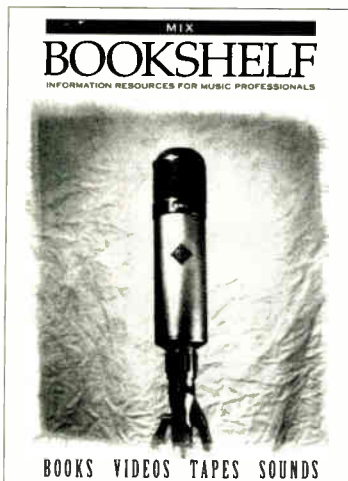
SONEX
All the colors and sizes plus great prices!

Get our FREE 150-page catalog of over 5,000 exclusive and hard-to-find supplies for audio & video.

800-522-2025 America's most unique catalog for audio & video!

MARKERTEK™
145 Ulster Ave., Saugerties
New York 12477 U.S.A. **VIDEO SUPPLY**

DO YOU HAVE THE NEW MIX BOOKSHELF CATALOG?



The new Winter/Spring 1992 Mix Bookshelf catalog offers the newest selection of instructional books, videos, tapes and sounds on CD for the pro audio and music recording industries.

Get your FREE copy of today's best audio "bookstore."

Toll-Free U.S. & Canada
(800) 233-9604
6400 Hollis Street #12
Dept. F
Emeryville, CA 94608
(510) 653-3307
(510) 653-5142 Fax



USE READER SERVICE CARD FOR MORE INFO.

FREE LISTING

in the 1993

MIX MASTER DIRECTORY!

CATEGORIES

Professional Audio Manufacturers
Recording & Video Production/Post-Production Facilities
Sound Reinforcement Companies
Remote Recording Facilities
Mastering, Pressing & Tape Duplication Facilities
Independent Engineers & Producers
Recording Schools, Seminars & Programs
Facility Designers & Suppliers
Professional Services

CALL TODAY! (800) 344-LIST.

Or write: Mix Directories, 6400 Hollis St. #12, Emeryville, CA 94608

DEADLINE: APRIL 17, 1992

The fine print: If you are already listed in the monthly Mix directories from August 1991 to July 1992, you need not respond. Your name will be included automatically.

VIDEO PRODUCTION & POST PRODUCTION



—LISTING CONTINUED FROM PREVIOUS PAGE

service audio post-production facility dedicated to delivering top-quality product at a competitive price. The latest in sound technology is fully utilized, be it digital (Waveframe digital workstations), analog (with Dolby SR), or a combination (computer-controlled ADR/assembly systems). Our talented staff includes Oscar and Emmy winners and nominees. Current post-production at our facility includes: *The Wonder Years* (New World/ABC), *The Boys of Twilight* (New World/CBS). Theatrical: *Into the Sun* (Trinark), M.O.W.: *Stay the Night* (mini-series), *Doubt* (HBO), *Til Death Do Us Part* (NBC). Animation: *Muppet Babies*, *The Attack of the Killer Tomatoes*, *Little Dracula*, *James Bond Jr.*

Northwest

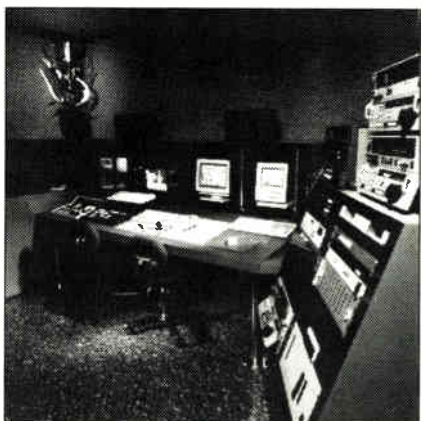
Alaska, Northern California, Colorado, Idaho, Montana, Northern Nevada, Oregon, Utah, Washington, Wyoming

AMERICAN PRODUCTION SERVICES; VPF, VPP/E, QLVP, APPV; 2247 15th Ave. W; Seattle, WA 98119; (206) 282-1776. Owner: Conrad Denke. Manager: Eric Denke.

AMERICAN ZOETROPE; VPP/E, APPV; 916 Kearny; San Francisco, CA 94133; (415) 788-7500. Owner: Francis Coppola. Manager: Jane Jackson. Video Tape Recorders: (17) Sony Beta, (7) Sony 3/4" SP & U-matic, (12) Sony H-8. Video Monitors: VPH 1042Q Super Brite projector, (6) PVM-2030, PVM-2530. Switchers/editors: Montage Suite Level II Montage, (2) offline editing BVE-600, RM450. Video Cameras: Sony DXC-3000/EVO-9000, Arriflex BL-4 35MM, Sony EVO-9100 camcorder. Synchronizers: (3) Lynx TimeLine w/KCU. Video Effects Devices: Sony DME-450. Audio Recorders: (15) MTM 35mm 6-track film recorders and dubbers, (2) Otari MkIII-8-8-track 1/2", (3) Fostex E-16 16-track 1/2", Otari MTR-90 24-track 2", (2) Otari MTR-10 1/2-track 1/4", (2) Otari MX-80 24-track 2", Otari MX-54. Audio Mixers: Otari MX-54 film 100-input automated, SoundWorkshop Series 34 32-input automated. Soundstages: "Stage 22": 60'x30' insert stage in Napa. Other Major Equipment: In San Francisco, 35mm screening room with 35mm film and video projection.

ANGEL PRODUCTIONS; VPF, VPP/E, QLVP, APPV; PO Box 1955; Rohnert Park, CA 94928; (707) 795-7399. Owner: Linda Donahoo, Sarah McNair. Manager: Linda Donahoo.

AVALANCHE RECORDING STUDIOS INC.; APPV; 10650 Irma Dr. #27; Northglenn, CO 80233; (303) 452-0498. Owner: Avalanche Recording. Manager: Linda Warman.



AVID PRODUCTIONS
San Mateo, CA

AVID PRODUCTIONS; VPF, VPP/E, QLVP, APPV; 235 E. Third Ave.; San Mateo, CA 94401; (415) 347-3417. Owner: Henry Bilbao. Manager: Chris Craig. Video Tape Recorders: Sony DVR-10 (D-2), Sony BVW-75 SP, Sony BVW-65 SP, Sony BVU-950 SP, Sony PWV-2800 SP. Video Monitors: Sharp XM-1300, (2) JVC TMR-9U, Sony PVM-1344Q. Switchers/editors: CMX 3100B, Grass Valley 100 w/line key. Video Cameras: Sony BVW-505, Sony DXC-3000. Video Effects

Devices: Abekas A-53-D w/Warp, Pinnacle 2040 (DVE, Paint, 3-D). **Audio Recorders:** (2) Otari MX-5050B, Digidesign Sound Tools, Opcode Studio Visions, (2) Sony PCM-2500 R-DAT, (2) Sony PCM-2100 R-DAT. **Audio Mixers:** (2) Soundcraft Delta B-200. **Soundstages:** 20'x20' video, 12'x17' audio. **Other Major Equipment:** Abekas A-72 digital C.G., Pinnacle 2040 paint/3-D animation, Studer Dyaxis 320 disk-based audio editing system, Avid Mediacomposer offline editing system. **Rates:** \$150 to \$275. **Specialization & Credits:** Avid Productions offers many services for the video professional. For production, these include directors, camera operators, grips and gaffers—the artists who paint the frames of video with light and color. The scene may require a helicopter, a crane, dolly, or just a tripod. Using resources efficiently is our forte. In the area of editing, experienced hands anticipate your commands. The precise manipulation of frames, the careful placement of voice and music—this is the realm of Avid's edit suite. Equipment includes CMX 3100B, Grass Valley Group 100, A72, A53-D, Betacam SP to D-2. Graphics: Make text move, use icons, create backgrounds that sparkle and 3-D objects that reflect a world of chrome. Warp, burst and fly your way to places where only the computer can travel. Communicate with precision and clarity. Pinnacle paint system with 3-D animation, Abekas A72 CG and backgrounds).

ROBERT BERKE SOUND; APPV; 50 Mendell St. #11; San Francisco, CA 94124; (415) 285-8800. Owner: Robert Berke. **Manager:** Nancy Berke. **Video Tape Recorders:** Sony BVH-1100 1", (4) Sony BVU-800 3/4", BVW-70 Betacam SP, Sony DVR-20-D-2, JVC BR-611U-S-VAS. **Video Monitors:** (16) Sony, Panasonic. **Switchers/editors:** (3) Kellyquan Audio Editing Systems. **Synchronizers:** (5) Cipher Digital Shadow, (2) Otari EC-101. **Audio Recorders:** (3) Otari MTR-90, (9) Otari MTR-10, (2) Otari MX-5050, (2) Waveframe CyberFrame 8-track digital workstation. **Audio Mixers:** Audiotronics 700, Otari 34B, (2) Soundcraft 600.

KEN CARLTON RECORDING; APPV; 11240 Hwy. 41; Madera, CA 93638; (209) 431-5275. Owner: Kenneth and Marilyn Carlton. **Manager:** Ken Carlton. **Video Tape Recorders:** JVC 8250 3/4" w/address tc, Sony 5600 3/4", (3) JVC and Sony (various). **Video Monitors:** (5) Sony (various). **Synchronizers:** Soundmaster 3-machine system. **Audio Recorders:** Otari MTR-90 16/24-track, (2) Otari MTR-12/10 w/center track tc and Dolby SR, (4) DAT recorders JVC & Panasonic. **Audio Mixers:** Sound Workshop (Otari) Series 34 32-channel w/ARMS II. **Soundstages:** Main room used for ADR & Foley 22x24, (2) iso room 5x10 & 8x10. **Other Major Equipment:** Spectral synthesis 24-channel digital audio recorder w/SMPTTE mod., synth engine and (4) 670Meg hard drives, Kurzweil 250 w/full library/MIDI sequencing via M.O.T.U., vast array of Pro Audio effects, MIDI keyboards and mics, large CD-EFX library. **Rates:** Please call.

JAMES DANIELS PRODUCTIONS; VPF, VPP/E, OLVP; APPV; 299 California Ave. #306; Palo Alto, CA 94306; (415) 325-8574; FAX: (415) 327-0635. Owner: James Daniels. **Manager:** Bruce Kaphan.

FIRST GENERATION/OFFLINE; VPF, VPP/E, OLVP; 241 Mississippi; San Francisco, CA 94107-2528; (415) 864-0545. Owner: Herb Ferrette. **Manager:** Herb Ferrette.



**FOCUSED AUDIO
San Francisco, CA**

FOCUSED AUDIO; APPV; 544 Natoma St.; San Francisco, CA 94103; (415) 626-9777. Owner: Jeff Roth. **Manager:** Susan Quinn. **Video Tape Recorders:** JVC CR-850 3/4", JVC BR-8600 VHS, Panasonic AG7400 S-VHS portable. **Video Monitors:** (3) Sony, (2) Mitsubishi 35". **Switchers/editors:** Kelly Quan SC610 audio editing system. **Synchronizers:** (6) Cipher Digital Shadow. **Audio Recorders:** MCI JH-24 24-track, Otari MTR-10 2-track w/CTC, Fostex E-2 2-track w/CTC. **Audio Mixers:** Sony/MCI 636 40-input. **Other Major Equipment:** Digital Audio workstations: Siemens Audio AMS Audiofile Plus 16-track, Digidesign Sound Tools, Digidesign Pro Tools, Diskmix II plus console automation. **Rates:** Call for rates. **Specialization & Credits:** Focused Audio continues to be a leader in audio post-production and music recording. Having pro-

duced over 100 soundtracks for broadcast and cable television, as well as numerous features and documentaries, Focused has moved into the '90s with a brand-new facility. Four control rooms and three recording spaces have been carefully designed and equipped with the best audio tools available today. All rooms are SMPTTE-locked to picture and can access any of our available recording formats: AMS Audiofile Plus 16-track digital audio workstation, 24-track w/Dolby SR, or Protocols digital workstation. Through our main machine room, the appropriate control room, recording space and recording format can be configured easily for any project. Engineers with expertise in feature film and television: sound, CD-I, music and radio work are available to put this facility to work for you.

HYDE STREET STUDIOS; APPV; 245 Hyde St.; San Francisco, CA 94102; (415) 441-8934. Owner: Michael Ward. **Manager:** Tambre Bryant.

JENSEN SOUND PRODUCTIONS; APPV; 363 Brannan St.; San Francisco, CA 94107; (415) 543-7095. Owner: Eric Jensen. **Manager:** Eric Jensen. **Video Tape Recorders:** JVC 8250, Magnavox VHS. **Video Monitors:** (2) Sony. **Synchronizers:** Otari EC-101, Cipher Digital Shadow II. **Video Effects Devices:** Mark of the Unicorn Video Time Piece. **Audio Recorders:** Otari MTR-90 24-track ATR, Otari MTR-12 1/2-track ATR w/SMPTTE center track, Panasonic SV-3500 DAT. **Audio Mixers:** Sound Workshop Series 34 40x24x2 w/Diskmix automation. **Other Major Equipment:** E-mu Emulator III digital sampling keyboard, Studer Dyaxis hard disk recording system, Sound Tools hard disk recording system, Sound Ideas Valentino/APM Sound FX libraries.

BREENE KERR PRODUCTIONS; VPF, VPP/E, OLVP; 1235 Pear Ave., Ste. 103; Mountain View, CA 94043; (415) 965-3131. Owner: Breene Kerr. **Manager:** Patrick McDermott.



**KVIE VIDEO
Sacramento, CA**

KVIE VIDEO; VPF, VPP/E, OLVP, APPV; 2595 Capitol Oaks Dr.; Sacramento, CA 95833; (916) 929-5797. Owner: KVIE Inc. **Manager:** Tila Kehlet. **Specialization & Credits:** KVIE Video is ready to assist our clients through all phases of production. Our services include electronic field production, multi-format online post-production, audio production, audio-for-video post-production, computer graphics and a 50'x70' studio with 18' grid. Our online suite is equipped with a Calaway CE-200 editor, which controls (3) Ampex VPR-6 1" machines and (3) Sony Beta-SP machines, an Ampex VISTA switcher, ADO 2000, ESS-3 Still Store, dual-channel Chyron Infini! with Logo Compose and Video Capture options, Otari center-track ATR and copy stand with CCD camera. The audio production suite has a 36-in, 24-out TAC Matchless audio console outboard processors and Cipher Digital audio editor that controls an Otari 24-track ATR, a pair of Otari center-track ATRs and a 1" or 3/4" VTR. For more information, call Tila Kehlet at (916) 929-5797.

MUSIC ANNEX AUDIO POST PRODUCTION; APPV; 69 Green St.; San Francisco, CA 94111; (415) 421-6622. Owner: Music Annex Inc. **Manager:** Michelle Le Comte. **Video Tape Recorders:** Sony DVR-10 digital video, Sony BVH-1100 1" C type, (3) JVC CR850U 3/4" U-matic, Sony BVW-70 Betacam SP. **Video Monitors:** (6) Sony color, (2) Sharp color. **Synchronizers:** Soundmaster synchronizer/editor, (4) Audio Kinetics 1, Lock 4, 10 w/3-machine lock. **Audio Recorders:** Otari MTR-90II 24-track w/Dolby A, Otari MX-80 24-track w/Dolby A, (4) MTR-12 2-track w/center track time code. **Audio Mixers:** (2) Amek 2500 36x24 w/Master Mix Auto, Amek 2520 40x24 W/Master Mix Auto. **Other Major Equipment:** (2) New England Digital PostPro Direct-to-Disk tapeless, 16-track.

NORTHWEST VIDEOWORKS INC.; VPP/E, APPV; 1631 S.W. Columbia; Portland, OR 97201; (503) 227-7202. Owner: Ken Ahrendt, Wayne Ahrendt and Diane Ahrendt. **Manager:** Diane Ahrendt. **Video Tape Recorders:** (6) Sony BVW-75/BW-65, (3) Sony DVR-10, Sony DVR-1000, (3) Hitachi HR-230. **Video Monitors:** (3) Sony BVM-1910, Ikegami TM-20-19-RH, Ikegami TM-20-8-RH. **Switchers/editors:** CMX Omni 1000, Abekas A82 (switcher), D/FX Compositum. **Video Cam-**
—LISTING CONTINUED ON NEXT PAGE



Orders... Large or Small, We Have It All!

All models of RECORDING PRODUCTS in stock. Wholesale distributors of:

AMPEX

- Broadcast audio/video tape
- Assorted reels and boxes
- Prepackaged cassettes
- We load bulk cassettes in custom lengths
- We provide stock monitoring services at no charge
- Splicing/leader tape

Call for Quote

(800) 854-1061

(619) 277-2540 or Fax orders (619) 277-7610

Advance Recording Products

7190 Clairemont Mesa Blvd.
San Diego, CA 92111

Visa and Mastercard accepted
WHOLESALE DISTR

USE READER SERVICE CARD FOR MORE INFO.

DAT

AUDIO GALLERY

AMERICA'S BEST PLACE TO BUY
DIGITAL AUDIO TAPE RECORDERS

- Best Prices, Service, Warranty
- Newest Models in Stock
- No Commission Sales Staff
- DAT Accessories, Mics, more

NOW AVAILABLE:

**SONY DAT WALKMAN
TCD-3!**
World-wide model available

**LOWEST DAT TAPE
PRICES ANYWHERE!**

**Latest Sony DATs
and Mics from Japan
here now!**

Call us before you buy elsewhere

**AUDIO GALLERY
213 • 829 3429**

2717 Wilshire Blvd., Santa Monica
CA 90403. FAX: 213 • 829-0304

MC-VISA-AMEX-DINERS-DISCOVER HRS: MON-FRI 10AM-6PM SAT 12PM-5PM

professional
Audio/Video Supplies
immediate shipment



3M maxell AMPEX BASF TDK



labels boxes albums



empty reels and boxes video cassette & CD packaging

ask for our free PolyQuick catalog

Chicago
(708) 390-7744 Fax: 390-9886
Los Angeles
(818) 969-8555 Fax: 969-2267

PolyQuick

1243 Rand Road, Des Plaines IL 60016
16018-C Adelante Str. Irwindale CA 91702

USE READER SERVICE CARD FOR MORE INFO.

Digital Bin Duplication

This new manufacturing process allows duplication of a cassette directly from a digital source, eliminating generational loss of sound quality.

Call our toll free number for more information.

1-800-489-7756

In Tennessee Call: 615-244-3535
FAX: 615-255-3882

CASSETTE, CD & VIDEO MANUFACTURING

CUSTOM PACKAGING
IN-HOUSE GRAPHICS DEPARTMENT
A FULL SERVICE FACILITY



A Division of SIA

748 Fesslers Lane
Nashville, TN 37210

VIDEO PRODUCTION & POST PRODUCTION



—LISTING CONTINUED FROM PREVIOUS PAGE

eras: Sony BVP-7, Sony BVP-400, Ikegami HL 79. **Synchronizers:** (3) Adams-Smith Zeta-3. **Video Effects Devices:** Abekas A57. Digital Effects Compositum. **Audio Recorders:** Otari MX-80, Otari MTR-10, Cyberframe. **Audio Mixers:** Soundcraft TS 12, Grass Valley AMX-170. **Other Major Equipment:** Sony Editor BVE-910, (5) Sony BVU-800/BVU-850, (6) Panasonic VHS 6810. **Rates:** \$360/hour—Digital online, \$250-350/hour—D/FX Compositum production, \$135/hour—Digital sweetening.

PACIFIC VIDEO RESOURCES; VPF, VPP/E, OLVP; 2339 Third St., Ste. M4; San Francisco, CA 94107; (415) 864-5679; FAX: (415) 864-2059. Owner: Jim Farny, Steve Kotton, John Zimmerman. Manager: Mike McRoberts.

PERSINGER PRODUCTIONS; VPF, VPP/E, OLVP; 10522 Lake City Way NE #C-B; Seattle, WA 98125; (206) 365-0167. Owner: Steve Persinger.

PRODUCTION WEST; VPF, VPP/E, OLVP, APPV; 1001 S. 24th St. West; Billings, MT 59102; (406) 656-9417. Manager: Jim Abel.

ROCKET RENTALS; VPP/E, OLVP, APPV; 51 Federal St. #100; San Francisco, CA 94107; (415) 495-2297. Owner: Nancy Evans, David Haynes. Manager: Fred Baysinger.

RUSSIAN HILL RECORDING; APPV; 1520 Pacific Ave.; San Francisco, CA 94109; (415) 474-4520. Owner: Jack Leahy, Bob Shottland. Manager: Cindy McSherry.

2ND NATURE PRODUCTION & POST; APPV; 2322 6th Ave.; Seattle, WA 98121; (206) 441-4118. Owner: Grootze Video Factory Inc. Manager: Ross Nyberg. **Video Tape Recorders:** JVC CR850U, Panasonic AG1950. **Video Monitors:** Sony 27", Panasonic CT-1301. **Synchronizers:** Adams-Smith Zeta-3. **Audio Recorders:** MCI JH-16, Tascam BR-20T, Digidesign Sound Tools, Tascam PA-30, Tascam MSR-24. **Audio Mixers:** TAC Scorpion II, Tascam M-3500. **Other Major Equipment:** (2) Macintosh Ili, E-mu Emulator III, (2) E-mu Proteus I & II. **Rates:** Rates available on request. **Specialization & Credits:** 2nd Nature Production & Post specializes in audio-for-video and film. We have one of the city's top audio-for-video producers, Trent Petrie. Some of Trent's clients include: The Boeing Co., Microsoft, Xerox, Lockheed, B.F. Goodrich, Nike and many more.

SKYWALKER SOUND; VPP/E, APPV; PO Box 3000; San Rafael, CA 94912; (415) 662-1000. Manager: Cate Coombs, Tom Kobayashi.

VIDEO ARTS INC.; VPP/E; 185 Berry St., Ste. 5400; San Francisco, CA 94107; (415) 546-0331. Owner: Kim Salyer. Manager: Michael Warch.

VIDEO PRESENTATIONS INC.; VPF; 2326 Sixth Ave., Ste. 230; Seattle, WA 98121; (206) 728-9241. Owner: H.V. Wright. Manager: Carl Anselmi.

VIDEO FAX; VPF, OLVP; 875 Castro St.; San Francisco, CA 94114; (415) 550-8000. Owner: Leigh Blicher, Tomas Tucker, Jim Rolin. Manager: Leigh Blicher.

Outside U.S.

CINAR STUDIOS INC.; VPP/E; 1207 St. Andre; Montreal, Quebec, H2L 3S8 Canada; (514) 843-7070; FAX: (514) 843-7080. Manager: Barbara Parker. **Video Tape Recorders:** (2) Sony BVH-2000 1", Sony BVH-2830 PCM Sound. **Video Monitors:** Conrac 6550, (4) Sony PVM-8220, (3) Sony PVM-13429. **Switchers/editors:** GVG 100, Edit Lister, Callaway CE150. **Synchronizers:** Adams-Smith Zeta-3. **Audio Recorders:** Studer A810, Audio Mixers: Sony MXP-29. **Other Major Equipment:** Chyron SuperScribe, Ensemble TC-400 TBC controller, JVC BR-7030U duplicator, Skotell (VITC) TCG-80N, (2) JVC CR-850 3/4.

8TH AVENUE SOUND STUDIOS; APPV; 66 W. 8th Ave.; Vancouver, BC, V5Y 1M7 Canada; (604) 673-8765. Owner: T. Wayne Kozak. Manager: Cathy Kumpura.

MAGNETIC NORTH; VPP/E; 70 Richmond St. E.; Toronto, Ontario, M5C 1N8 Canada; (416) 365-7622. Manager: Doug McKenzie.

MAGNETIC SOUTH; VPP/E; 550 Queen St. E., Ste. 205; Toronto, Ontario, M5A 1V2 Canada; (416) 367-8477. Manager: Phil Keeling.

MASTER'S WORKSHOP; APPV; 306 Rexdale Blvd., Ste. 7; Rexdale, Ontario, M9W 1R6 Canada; (416) 741-1312. Owner: Magnetic Enterprises. Manager: Bob Predovich, VP and general manager.

MASTERTRACK LTD.; APPV; 35-A Hazelton Ave.; Toronto, Ontario, M5R 2E3 Canada; (416) 922-4004. Owner: Ken Burgess. Manager: Jim McBride.

MEDIA HOUSE PRODUCTIONS INC.; VPP/E; 1174 Winipeg St.; Regina, Saskatchewan, S4R 1J6 Canada; (306) 359-0977; FAX: (306) 569-2240. Owner: B.A. Sollio/Media House Ventures Inc. Manager: Bruce A. Sollio. **Video Tape Recorders:** Sony BWV-70 Betacam SP, Ampex CVW-65 Betacam SP, Ampex CVW-75 Betacam SP, Panasonic AJ-D350, Ampex VPR-1C 1" C-format, (2) Panasonic AG7510 S-VHS, Panasonic AG7500A S-VHS. **Video Monitors:** Sony 1342, Panasonic CT-1030. **Switchers/editors:** Ampex Vista 8, Ampex ACE 25 edit controller, Panasonic AG SW800, Panasonic AG A800 edit controller. **Video Effects Devices:** Ampex ADO 100. **Audio Mixers:** Sony MXP-290, Tascam M-208. **Other Major Equipment:** Ampex ESS-5 digital still store, Sony UY-T55 video scanner, EMC-2 editing machine, Luma graphics package. **Specialization & Credits:** Media House, located in central Canada, is a video-posting facility dedicated to serving the production community. Producers may perform offline editing or industrial program online editing in our A/B/Roll S-V suite, rent in the comfort of their own office an EMC2 nonlinear offline system, and utilize the Betacam SP to D3edit suite, complete with ADO, still store, graphics package, character generator, Vista switcher and Ace controller. Our copyright department can help you with the clearance of materials, and then the producer can have the final program mass-duplicated in the tape duplication centre. For the finest of quality at affordable rates, Media House Productions.

MEGA WAVE STUDIO; APPV; 51, Rue du Stand; CH-1204 Geneva, Switzerland; (41-22) 312-0322. Owner: Christian Oestreichler.

NEW VISION; VPP/E, APPV; 507 Irma Carolina St.; Sao Paulo SP, 03058 Brazil; (55-11) 292-9553; (55-11) 292-6045; FAX: (55-11) 292-1319. Owner: Domingos Orlando, Alex Pimentel. **Video Tape Recorders:** Sony BVH-3100, (2) Sony BVW-75, Sony BVW-65, (2) Sony PVW-2800. **Video Monitors:** (4) Barco CVS 51, (2) Barco CVS 37, (3) Sony PVM-8020. **Switchers/editors:** Grass Valley GVG 110 CV, Sony BVE-910. **Video Cameras:** Sony DXC-325. **Video Effects Devices:** Grass Valley DPM 700CV, Pinacle SV-1000. **Audio Recorders:** (2) Akay Adam, Fostex M20, Sony DAT. **Audio Mixers:** Sony MXP-29, Soundcraft 6000. **Other Major Equipment:** Rank Cintel/Telecine URSA, Digital/FX Compositum Workstation, Abekas A60/A66 DDR, Rank Cintel Matchbox Still Store, Explore Thomsom Digital Image—CG. **Rates:** Online-US\$300/hour, Teletelne-US\$330/hour, D/FX-US\$400/hour.

PINEWOOD STUDIOS; APPV; 1119 Homer St.; Vancouver, BC, V6B 2Y1 Canada; (604) 669-6900. Owner: Pinewood Recording Studios Ltd. Manager: Geoff Turner.

SHOOTING STAR PRODUCTIONS; VPF, VPP/E, OLVP, APPV; #148 W. Seaton Blvd, J. Perez Bldg., Ste. 202; Agaña, Guam 96910; (671) 477-9347; (671) 477-9348; FAX: (671) 477-6102. Owner: Carlos S. Barretto. Manager: Carlos S. Barretto.

SOUNDS INTERCHANGE; APPV; 49 Ontario St.; Toronto, Ontario, M5A 2V1 Canada; (416) 364-8512. Owner: Super Corp. Entertainment. Manager: Tania Smuntochilla.

STUDIO PLACE ROYALE INC.; APPV; 640 St. Paul W., Ste. 600; Montreal, Quebec, H3C 1L9 Canada; (514) 866-6074; FAX: (514) 866-6147. Owner: S. Brown, N. Rodrigue. **Video Tape Recorders:** Sony/MCI JH-110 1" layback, JVC 3/4" VCR, (3) JVC 1/2" VCR, Sony Betacam SP. **Video Monitors:** (2) JVC, (4) Sony, (2) Hitachi, 6 ft JBL projector. **Synchronizers:** (2) Soundmaster w/CMX. **Audio Recorders:** (2) Otari MTR-90, MX-80 24-track, Otari MX-70 8-track, (3) Otari MTR-12 1/4" CTT, MX-55, Dyaxis Digital Record/Edit. **Audio Mixers:** (2) Amek Angela 32 i/p, A&H Syncon 24 i/p, Soundcraft TS12. **Soundstages:** 25'x15' Foley. **Other Major Equipment:** Samplers, sound editing and signal processing, all SFX CDs, over 20,000 cuts production music, Dolby SR. **Rates:** \$80 to \$150/hr.

WEST 11TH AUDIO; APPV; 822 11th Ave. SW Ste. 306; Calgary, Alberta, T2R 0E5 Canada; (403) 265-0258; FAX: (403) 266-0890. Owner: Metromedia Productions Limited. Manager: Lanny Williamson. **Video Tape Recorders:** Sony 7020, Sony 2600, JVC CR8200V, (4) Sony SLV-579. **Video Monitors:** (3) Sharp, NEC Projector, Sony PVW-8020. **Synchronizers:** Adams-Smith Zeta III B, Hybrid Arts SMPTE Track. **Audio Recorders:** (2) Studer A80 MKII/B67, (2) Scully 280, Ampex AG440-2. **Audio Mixers:** AMR 32x16x32, 24x8x16 Remix. **Soundstages:** Dry 450-sq.-ft., ADR Voice, Vocal Booth. **Other Major Equipment:** (48) Alesis A-DAT, (3) Panasonic SV-3500, full MIDI/SMPTE suite, Studer Dyaxis. **Rates:** \$40-\$140 per Hr.

—FROM PAGE 122

are using MIDI tracks along with your audio, you will probably want to premix them through your board to a stereo audio image in ProDeck and then incorporate the resulting audio tracks in your final mix before mastering. Thus, Pro Tools offers the opportunity to record, edit, mix and master your project without ever leaving the digital domain.

I used an accelerated Mac II with 8 MB of RAM, an Opcode Studio 5 MIDI interface and a JL Cooper CS-10 controller for my evaluation. One of my first sessions involved creating a set of MIDI tracks in Opcode's Vision sequencer, saving it as a MIDI file and importing it into ProDeck prior to recording some acoustic piano and vocal tracks. Due to a combination of flaws, I was unable to achieve MIDI playback in ProDeck using this combination of hardware. Since Pro Tools does not use Opcode's OMS system, I set up the Studio 5 to emulate a standard MIDI interface. Version 1.03 of Pro Tools allowed the CS-10 to connect only to the modem port; therefore my choices were to connect the Studio 5 to the printer port or to connect it to the Ext port (a thru port) on the CS-10. My Studio 5 failed to function when connected to the printer port in this mode, and using the Ext port on the CS-10 likewise proved unsuccessful. (A standard MIDI interface did function correctly when connected to the CS-10's Ext port.) Digidesign, Opcode and JL Cooper were aware of the situation, and corrective measures have since been taken.

In order to continue my session, I had to disconnect the CS-10 and use the Studio 5 on the Mac's modem port so that I could get MIDI playback from ProDeck. I then laid down several stereo acoustic piano tracks in sync with the MIDI tracks. At this point I switched to ProEdit to assemble a single stereo set of piano tracks from the original takes. A note of caution: If you're used to working with MultiFinder, you may have gotten into the habit of switching between programs either by using the Apple menu or by clicking on a screen in the background to switch to that application. In switching between ProDeck and Pro Tools, my advice is, *don't do it!* Such methods are apt to cause your computer to hang, and you could easily lose unsaved data. The

recommended method of switching is to press the "command" and "=" keys. This operation automatically saves any changes before switching to the other program. Potyten's Axiom #23: Save early and often.

The ProEdit environment is intuitive and comprehensive. It's a simple matter to duplicate a background vocal by specifying a region and copying it to another part of the track. Regions can also be specified across all tracks, and then copied to create a ride out at the end of a tune, for instance. Aside from the scrub condition described earlier, my only complaint was the absence of any method for marking a precise playback location by typing in a number. This is true of ProDeck as well. However, both programs do offer ways to record and recall locations.

Summary

Limited space prevents a more complete description of the staggering array of features found in ProDeck and ProEdit. Before writing this review I worked with the system for a month-and-a-half, and I still don't feel I've covered every nook and cranny of this ambitious package. Included among many features are ways to strip silence from audio regions, remove unused MIDI and audio regions, delete all unused audio from a session and synchronize with flexible options. A cursory check of these and other features indicated no problems. In fact, the synchronization features functioned well even in the presence of less than perfect SMPTE signal—for my tests I used time code coming off a VHS tape. (However, others have reported that this is not always the case for them.)

Even on my accelerated Mac II, it sometimes took as long as 30 seconds to save a session or to switch between the two companion programs. Despite the comprehensiveness of the Pro Tools software environment, I couldn't help but wish for a couple of additional features, such as a level threshold in the "Strip Silence" command, *a la* Studio Vision. (Digidesign was in the process of implementing this feature in Version 1.1.) And there were the inevitable error messages and occasional lockups that can be expected from a program of this complexity. The basic 4-channel Pro Tools System (including the 4-channel card, the Audio Interface and the software) retails for \$5,995, which is a fraction of what it would cost to do this kind of professional-level

work on any other platform, either random-access or tape-based. Version 1.1 was scheduled to be released by March, and judging from Digidesign's past track record, I fully expect it to show marked improvement in reliability and performance. The company can also be expected to incorporate a number of additional features.

A note about the technical support staff: Digidesign obviously realizes the importance of hiring enough experienced, qualified people to handle the myriad complex issues that come up in using a system as complex as this one. I wish other music and audio software companies were as conscientious.

Pro Tools is a well-thought-out system with the right combination of flexibility, intuitiveness and power, and little in the way of unnecessary frills. This is a great-sounding product for those who do multitrack recording and post-production, and it establishes a clear direction for the future of professional audio.

Watch for a 16-track Pro Tools update in a forthcoming issue of *Mix*.

Digidesign Inc., 1360 Willow Road, Suite 101, Menlo Park, CA 94025; (415) 688-0600. ■

MUSIC RECORDING

IN THE

JUNE 1992 MIX

Artist Perspectives on Studio
Recording

The New Generation of Mics

DIRECTORY:

Southeast Studios

Several major recording artists discuss changes in recording techniques and the studio environment. Plus, recent innovations in microphone technology and a discussion of favorite vocal mics in Southeast recording studios.

Bonus distribution!

StudioTech, San Francisco, CA, June 17-19
Pro Audio Asia, Hong Kong, July 8-10

Ad Close: April 7, 1992

Materials Due: April 15, 1992

Coming in Mix:
May 1992

The Art of Mixing

Mixing Tips & Techniques

• DIRECTORIES

Northeast Studios

• EQUIPMENT SPOTLIGHT

Automation Systems

• PRODUCER'S DESK

Bill Laswell

• BYTE BEAT

Audio Production for CD-I

• PLUS!

Dire Straits in Concert; Nile Rodgers' studio, Ear Candy; CD-I Full Motion Video; British International Update

ATTENTION ADVERTISERS:

Deadline for ad placement is the seventh of the month, two months prior to publication. Call (510) 653-3307 for a 1992 *Mix* Editorial Calendar, space reservations and complete advertising information.

MIX

PRODUCER'S DESK

—FROM PAGE 130, FISCHER

up to the philosophers and the people who do that for a living. He said he's always known *he* was put here to be a saxophone player. I'm sort of in the same place. I know I'm here to be in the service of others. I can stand on my own, of course, but I'm a good accompanist. The nature of what I do as a producer is accompaniment.

It's like making a nice jacket for someone—it's tailor-made, and no one else can wear it—it belongs only to them. Some of my tracks you can't take and have other people do them. Like Brenda Russell—hers are too stylized. The old Rufus stuff—nobody ever covered any of our songs. It was innovative and interesting. We weren't trying to emulate anything that was out there, and we ended up sounding original. It wasn't even traditional R&B—there was some hop in it, some pop in it.

How technically inclined are you?

I'm technical to the point where there's no engineer who can lie to me, because on one level I know what they know. I can do engineering myself. When I was in Rufus, I'd occasionally find that engineers were lying to me, and they'd try to give me this technical explanation of why something I wanted to do couldn't be done. So I'd stay after they left and experiment and find out that it could be done.

I like working with a good engineer, and I'm not afraid to admit it when I don't know something. I like to surround myself with people who know what's going on.

Do you have your own studio?

No. I did at one time. It cost me a lot of money, and it wound up having to be rented out to other people to justify the expenditure. I don't want to do that again. I'll have something minor at my home—like one synthesizer and a workstation to give me some basic ideas. But also, I don't want to make my home too much of a workplace.

Do you have a favorite L.A. studio?

My favorite in Los Angeles is Conway. I've been hanging with Buddy Brundo since his first small room back in 1974. I like mixing at Bill Schnee's and Ocean Way. I like Pacificque, which is a good studio that a lot of people don't know about. They have a Neve with Flying

Faders and an old Trident. I like Capitol A. I like Enterprise out in Burbank. I liked the old Record Plant on Third Street—the old API days. I like Elumba, although I'm not necessarily into SSL boards.

As someone who loves so many of the records that used to be made in Capitol A on a 3-track, how does 48-track digital strike you?

The maximum I'll use is 32 tracks, because that gives me auxiliary tracks to put tones on. When I go to 32, I usually end up not using all the tracks. If I do a lot of stereo passes, or if I do a string section and a stereo room at the same time, I may need a lot of tracks. Doing 32 gives me a chance to broaden, but it's not because something different is on each track. I'll take a direct and a mic on a bass, or something like that. But if I can record a 60-piece orchestra on 24 tracks, what's the problem? I don't have a reason to go 48, so I don't. I think technically it's a masturbation where you're going to be chafed by the time it's over.

As a vocal specialist, are you a fan of tube mics?

I love tube mics. I have a [Neumann] M49, a [Telefunken] 251, a 47 tube, 87, 67... I've got all kinds of stuff. A KM84. Those are some of my favorites that I own. Also, Ocean Way has a great selection of microphones, which Alan Sides reconditions. Or sometimes I'll borrow one from Bruce Swedien. Or I'll get one from a rental place, and if I like it I'll write down the serial number and try to get it again.

Do you think Unforgettable is opening a window to a different era for a new generation of listeners?

Definitely. I think it was time for it, whether it was that specific project or another one. Usually this happens in times when the country is in recession. When money is tight, people want things that will last for a while or that mean something for them other than just momentarily, because they need to be healed during that period. Music does that.

In this case, I think the purpose of why it was done can't be denied. You can hear that in the performance. It's basically someone saying goodbye to their father. So whether it sold or not, the purpose still remains. All the reasons for doing it were cor-

rect. That it sold was a surprise rather than an expectation.

Was it a technical challenge to make it seem cohesive with the different configurations of groups, from combos to orchestras?

No, because I was raised on this kind of music, and I know what it requires. Same with Tommy LiPuma. With the arrangers and the musicians who were picked for this project, you couldn't go too wrong. We were true to the song and melody, and brought the vocal up in the mix to give it some continuity. It was a real pleasure. Even if it was stressful at certain times, who said it was supposed to be easy? All I know is when it was done, it was a joyous occasion.

It's been a great year, no question about it. I'm having a great time right now because the older you get the more confident you get. And you start to realize that even on a bad day, you're still pretty good. ■

Contrary to rumors, Mix managing editor Blair Jackson is not producing a boxed set of Soupy Sales TV tunes rendered by Hunt and Tony Sales of Tin Machine.

—FROM PAGE 166, SESSIONS

Casper... Showplace Studios of Dover, NJ, had Trixter in rocking 'n' recording new tracks with engineer Ben Elliott and assistants Dave Hamp and Gene Profido... Producer/engineer/songwriter Jim Salamone worked on Grover Washington Jr.'s upcoming album at Salamone's project studio in Philadelphia. Doug E. Fresh (the originator of the "human beat box") will be featured on the single "Check Out Grover."...

SOUTHEAST

Nashville's SoundStage Studio had Lacy J. Dalton in working with producer Jimmy Bowen on a Capitol release with engineer Steve Tillisch and assistant Jeff Coppage... David Farrell, chief engineer at Ultrasonic Studios (New Orleans), recorded Dalton Reed, a Lafayette, LA, soul singer, for Reed's recording debut on Rounder Records. The R&B/soul artist was discovered by Rounder producer Scott Billington. Billington co-produced the recording with Lee Allen Zeno of Buckwheat Zydeco, while Steve Reynolds assisted... R&B producer Dallas Austin (Boyz II Men, Another Bad Creation) was at Doppler Studios (Atlanta) re-

recording RIFF for the soundtrack for *White Men Can't Jump*. Darrin Prindle engineered and Peter Blayney assisted...

NORTH CENTRAL

Paisley Park artist George (Funkadelic) Clinton was at The Disc Ltd. (East Detroit, MI) working on his upcoming album for Warner Bros., with Greg Reilly engineering... NYC producer Bob Kinkel worked with engineers John Scherf and Craig Thorson at Studio M (St. Paul, MN), recording and mixing a recorded version of Debra Fraser's best-selling book *On the Day You Were Born*. Music was composed and performed by Matthew Smith to complement the reading by the author...

NORTHWEST

At the new Bad Animals/Seattle, Portland-based rockers the Dharma Bums mixed their newest release, *Welcome*, with Bad Animals engineer Ed Brooks for a Frontier Records release. Brooks also recorded vocal overdubs for Screaming Trees vocalist Mark Lanigan's solo album on Subpop Records, the indie label that spawned Nirvana, Mudhoney and others. ■

APRS 92: THE ONE SHOW

3 - 5 JUNE 1992 - OLYMPIA 2, LONDON

At APRS 92 you'll see and hear the whole wide range of all the pro audio technology that is current, plus a taste of things to come.

APRS 92: is The ONE Show which presents products and services for recording, broadcasting, post-production, sound-reinforcement and related fields.

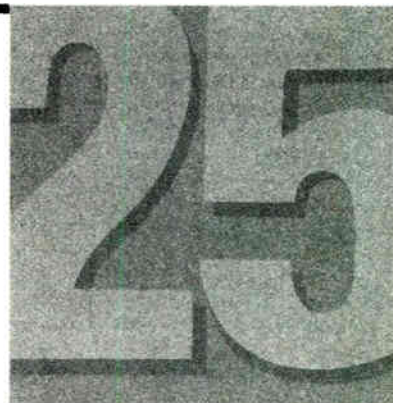
APRS 92: is The ONE Show for the audio industry in the one market of Europe.

APRS 92: is the most friendly yet serious professional show in its field, now celebrating its 25th successful year.

DON'T MISS APRS 92!

For free entrance, you must pre-register (£6 admission if you register at the door). Pre-registration now available from:

APRS 92 Office, 2 Windsor Square,
Reading RG1 2TH, England.
Tel: (0734) 756218. Fax: (0734) 756216.



**INTERNATIONAL EXHIBITION OF
SOUND RECORDING EQUIPMENT**
— 25th YEAR! —

APRS
the professional
recording association

ADVERTISERS INDEX & READER SERVICE PAGE

PAGE	READER SERVICE NUMBER	ADVERTISER	ACTION FAX #
135	001	Abilene Research and Development (ARD)	
173	002	Ace Music Center	
53	003	Acoustical Solutions	
103	004	Acoustic Systems	
179	005	Advance Recording Products	
152	006	Akai	
18	007	AKG Acoustics (D 3900)	(510) 351-0500
58	008	AKG Acoustics (414)	(510) 351-0500
IFC	009	Alesis (adat)	
21	010	Alesis (3630)	
99	011	Alesis (Quadraverb)	
117	012	Alesis (RA-100)	
8	013	Ampex	
160	014	AMP Services	
183	015	APRS	
19	-	Ashly Audio	
151	016	Sam Ash Professional	
176	017	Audio Action	(818) 845-8039
88	018	AudioForce	
172	019	Audio Images	(415) 957-1531
164	020	Audio Precision	
24	-	Audio-Technica	
134	021	Audio Teknology Incorporated (ATI)	
140	105	Russ Berger Design Group	
73	022	Brainstorm Electronics	(213) 475-7570
22	023	Bruel & Kjaer	(519) 745-2364
121	024	Bryston	(215) 628-2970
25	025	Burlington Audio/Video Tapes (3M)	(516) 678-8959
37	026	Burlington Audio/Video Tapes (Sony)	(516) 678-8959
147	027	Business & Industrial Trade/Pro Audio Asia	
103	028	Caig Laboratories	(619) 451-2799
145	029	Carver	
172	030	CCS Printing	
82	031	Century Music Systems	
127	032	CMCI/Circuits Maximus Company	
143	033	Community	(215) 874-0190
31	034	JL Cooper Electronics	(213) 822-2252
88	035	Creative Support Services	
139	036	Crown	(219) 294-8329
102	037	D & R USA	
179	038	D.A.T.- Audio Gallery	(213) 829-0304
158	039	dbx	(510) 351-0500
27	040	DDA	(516) 420-1863
118	041	DIC Digital Supply	
63	042	Digidesign (Sound Tools II)	
65	043	Digidesign (Pro Tools)	
IBC	044	DigiTech	
147	045	Disc Makers	
168	046	DOD	

PAGE	READER SERVICE NUMBER	ADVERTISER	ACTION FAX #
92	-	Dolby	
82	047	Dorsey Productions	
54	048	Drawmer	
83	049	Dreamhire	
111	050	Dynacord	
67	051	DynaTek Automation Systems	
140	052	EAR Professional Audio/Video	
91	053	East-West Communications	
30	054	Euphonix	
175	055	Europadisk	
28	056	Fostex	
68	057	Full Compass	
126	058	Full Sail Center for the Recording Arts	(407) 671-1112
26	059	Furman Sound	(415) 927-4548
70	-	Future Disc Systems	
135	060	Future Sonics	
176	061	Gold Line/Loft	(203) 938-8740
32	062	Grove School of Music	
38	063	The John Hardy Company	
74	064	The Hollywood Edge	
174	065	illbruck	
136	066	Institute of Audio Research	(212) 677-6549
71	-	JBL Professional	
130	067	JRF Magnetic Sciences	(201) 579-6021
122	068	KABA Research & Development	
120	069	Klarity Kasette	(207) 873-3924
20	070	KRK Monitoring Systems	
173	071	Lentine Music	
177	072	Leo's Professional Audio Systems	(510) 652-6575
7	073	Lexicon	
109	074	Littlite/CAE	(313) 231-1631
16-17	075	Mackie Designs	
130	076	Manhattan Production Music	
166	077	Manny's Music	
177	078	Markertek Video Supply	(914) 246-1757
116	079	Martin Audio Video	
85	080	Maxell	
73	081	Micro Technology Unlimited (MTU)	
178	082	Mix Bookshelf	
178	-	Mix Master Directory	
62	083	Music Annex Duplication	
171	084	National Sound and Video	
52	085	Neumann/USA	
107	086	Neutrik	
39	-	Neve	
112	087	Northeastern Digital (NDR)	
80	088	Omni Music	
50	089	Opcode	
72	090	Optical Media International	
46	091	Optifile/Sascom Marketing	
42	092	Otari	(415) 341-7200
171	093	Paradise Recording	
101	094	Peavey Electronics	
180	095	PolyQuick	

PAGE	READER SERVICE NUMBER	ADVERTISER	ACTION FAX #
113	096	Professional Audio Services & Supply	(818) 843-5754
136	097	QCA	(513) 681-3777
146	098	QSC Audio	
141	-	Ramsa	
137	099	Rane	
98	100	The Recording Workshop	
138	101	Rhythm City	(404) 233-1581
165	102	Rocket Lab	
12-13	103	Roland (S-770)	
155	104	Roland (DM-80)	
154	106	SAS Industries	
47	107	Saturn Research	
128	108	School of Audio Engineering (SAE)	
115	109	Sennheiser	
131	110	Shure	(708) 866-2279
1	111	Siemens Audio	
4-5, 149	-	Solid State Logic (SSL)	
94	113	Sonic Solutions	
160	114	Sonocraft	
60	-	Sony	
BC	-	Soundcraft	
81	115	Sound Ideas	
180	116	Sound Impressions	
154	117	Sound Reinforcement Services (S.R.S.)	
36	118	Soundtracs	
75	119	Spectral Synthesis	
174	120	Sprague Magnetics	
11	121	Studer Revox (Multitracks)	
123	122	Studer Revox (Dyaxis)	
62	123	Studio Consultants	
64	124	Summit Audio	(408) 395-1403
110	125	Sweetwater Sound (Retail)	
165	126	Sweetwater Sound (Careers)	
100	127	Symetrix	(206) 283-5504
69	128	Systems Development Group	
44-45	130	Tascam (238)	
93	129	Tascam (M700)	
98	131	Thoroughbred Music	
14	132	3M Corporation	
170	133	Thrifty Electronics	
78	134	TM Century	
161	-	TOA Electronics	
80	135	TRF Production Music Libraries	
138	136	USCO Audio	
119	137	Valley Sound	
170	138	Vertigo Recording Services	
90	139	Videomix	
33	140	Wadia Digital	(715) 386-8116
49	-	WaveFrame	
87	141	Whirlwind Music	
120	142	The Whisper Room	
90	143	Wohler Technologies	(415) 821-6414
56-57	144	Yamaha (SPX Series)	
86	145	Yamaha (DMR8)	
125	146	Yamaha (YPDR601)	
89	147	Yorkville	

MIX

ACTION FAX

Advertiser _____ Adv. Fax#(_____) _____

Name _____ Title _____

Company _____

Address _____

City _____ State _____ ZIP _____

Tel# (_____) _____ Fax # (_____) _____

Please send additional information about _____ as seen in *Mix*. Please send

this information by Return Fax Mail Please have a salesperson contact me.

Use this form to contact advertisers in this issue immediately. All advertisers and some Fax numbers are listed in the Ad Index above. Photocopy this page if you need additional copies of this form.

CLASSIFIEDS

Acoustic Consulting

NFI **SUPERCUSTIC ACOUSTIC FOAM**

GUARANTEED LOWEST PRICES IN THE COUNTRY. WE'LL BEAT ANY DEAL.

48" x 48" IMMEDIATE SHIPPING
2"-\$15.50
3"-\$23.50
4"-\$27.50

Medium Blue or Custom Charcoal Colors. Stop Sound Now! With the Highest Density Polyurethane Foam available anywhere. Excellent sound proofing for all applications. Custom colors & sizes, also available.

Warning - Don't buy low density bed size mattress foam that has no sound absorbing properties or specs. Buy from the only company that specializes in foam & guarantees satisfaction! Call now for FREE Catalog, specs & Samples.

NATIONAL FOAM, INC.
1 (800) 356-0944
6311 De Soto Ave, Suite A Woodland Hills, CA 91367

SONEX-SOURCE
58 Nonotuck St., Northampton, MA 01060
Your Source for Sonex Acoustical Foam

BEST PRICES-NATIONAL DELIVERY

800-484-1003 ext. 0032
ORDER MC/VISA Accepted

413-584-7944
FAX OR INFO

SOUND REWARDS

Buy Factory Direct Popular Patterns Best Sound Absorption Call 1-800-842-9790

AZ-USA
Ultimate Sound Absorption

Fax (612) 861-2103
1401 W 76th St, Suite 250
Minneapolis, MN 55423

RESULTS in the MGMT of SOUND Specializing in Modular Designs for Pro and Home Studios. Room EQ, tuning and analysis. TEF™, Pink and Swept Methods. Complete Designs, Contracting, Design help and recommendations. (818) 509-5733.

Business Opportunities

CASH FOR TRACKS

We pay cash for your unsold/unclaimed music tracks. All styles; all lengths. No junk please! Send cassette to: PMW, Box 947, Bryn Mawr, PA 19010, or call Andy at (800) 368-0033.

Cassette Duplication Facility, Nakamichi real-time machines, profitable, established client list, excellent SF Bay Area location, attractive lease, ideal hus./wife situation, \$129k, serious inquiries only, (707) 585-1325

LET THE GOVERNMENT FINANCE your new or existing small business. Grants/loans to \$500,000. Free recorded message: (707) 448-0270. (NL3).

BANQUET SOUND STUDIOS, established, profitable, Northern California 24-track studio, offers partnership opportunity to a socially conscious producer/engineer/studio owner.

Let's talk. (707) 585-1325

Employment Offered

HAWAII CALLS...

Creative audio engineer needed for digital audio/video production house in Honolulu. Send reel and resume to Studio Q, 816 Queen Street, Honolulu, HI 96813.

WANTED—AUDIO PRODUCTION PERSON. Min. 3 yrs. Broadcast/Commercial/Production Expr. Must deal w/clients effectively; an audio person who can make commercials happen & has knowledge in ALL areas of audio production. Leave machine message: (404) 953-6951.

Mix-to-picture engineer sought by state-of-the-art audio-video production facility. Must have experience with high-profile ad agencies & reel with national spots. Familiarity with digital workstations desirable. Resumes: Mix Classifieds, PO Box 3845, Dept. 2, Emeryville, CA 94608

DESIGN ENGINEER

International Music Corp. is seeking a **SENIOR ANALOG DESIGN ENGINEER** for R & D at its Fort Worth, TX facilities. Candidates should have a minimum of five yrs. experience in CAD, specifically circuit simulation & pcb layout. Projects will involve mixing console, power amplifier, and signal processing design. IMC offers competitive salary and benefits. Qualified candidate may send resume, including salary history to: **INTERNATIONAL MUSIC CORP. P.O. BOX 2344 FT. WORTH, TX 76113 ATTN: TOM LINKLATER**

Mix Classifieds—(800) 747-3703

Employment Wanted

Los Angeles-experienced engineer seeking employment with a classical record company. Worked extensively with Sony PCM-1630/DAE-3000 setup. Had the opportunity to work with the best in the industry, e.g., 1991 Grammy Award-winning classical producer. For more information and a resume: Li Teo, Raffles City, PO Box 39, Singapore 9117, Republic of Singapore.

Equipment For Sale

NEW, USED, DEMO EQUIPMENT LARGEST SELECTION OF DIGITAL/ANALOG RECORDERS, CONSOLES, OUTBOARD

Pro Tools, Sound Tools, Apple Macs, DAT/CD recorders, tube gear, 24-trk recorders, Trident 24, Otari 54, KRK, Genelec monitors, Eventide H3000, Lexicon reverbs, Tannoy monitors, Roland R-880, Apogee interfaces, Sony DPSR7 reverbs, Roland samplers. EQUIPMENT LEASING AND SYSTEMS SPECIALISTS—NEW AND USED COMPONENTS CALL FOR CURRENT FAX LISTING OF EQUIPMENT

EAR PROFESSIONAL AUDIO
(602) 267-0600

1988 Sony/MCI JH-24, 60% head life, mint cond; \$18k. Dolby SR/XP rack w/24 channels, fully wired; \$18k. 2 Neve 1066 EQ modules with power supply; \$2,500. 2 API 550 EQ modules w/power supply; \$1,400. Westlake BBSM-12 spkrs; \$2,500. Dan (215) 922-0292.

AMS AUDIOFILE 8-output, two-hour version. Priced below current market value. (415) 574-1165. Serious inquiries only. Also: Carver 5t power amp, Quad 303 power amp.

WORLDWIDE DELIVERY!
KEYBOARDS & RECORDING EQUIPMENT.
GREAT SELECTION - GREAT SERVICE.

OVER 60 YEARS IN BUSINESS.
CARUSO MUSIC
20 BANK ST., NEW LONDON, CT 06320, U.S.A. (203) 442-9600
Fax: (203) 442-0463

TAC Scorpion console 28/12/24/2 w/4 patch bays wired w/Mogami cable in custom desk w/12 single rackspaces equally spaced above meter bridge. Comes w/ten 30-ft. snakes, 24-trk & 2-trk harnesses, MIDI str. & mic input panel. Call Bob, (805) 251-2599.

35 mm MAGNETIC DUBBERS: Magnatech Reproducer/Recorders w/ Interlock: MD-235, MD-636, MR-436 for Sale. Call Michael Temmer, (212) 206-1475. Fax: (212) 929-9082.

D&R Dayner Series console (new demo) with 32 channels of C-Mix automation. \$22,500. Call Paul at (409) 588-3199.

STUDER A80 24 MkIII heads & remote, well-maintained. \$21k. SONY 3402 DASH, mint condition; \$11k. No reasonable offer refused. SOUND WORKSHOP 28x8 Series 30. \$9k or best offer. Call Paul at (604) 435-1017.

TUBE MICS SERVICE

Bought and sold Power supplies for any Tube Microphone
Bill Bradley
(216) 723-6494 or
Fax (216) 723-6595

(4) Tascam broadcast CD701 demo. \$995 new. Adams-Smith Zeta-3B, \$2,295. Tascam BR20, demo, \$1,695. Zoom 9010 demo, \$1,250. Yamaha SPX 1000 demo, \$1,099. (1) JBL 4412 speaker, \$300. (1) UREI 809, \$375. Call (800) 800-4654 or (813) 238-6485, ext. 6. Visa MC AmEx Welcome!
THOROUGHbred MUSIC

db ENGINEERING

We Need Your Clean Used 24 Track !!!
PHONE (617) 782-4838
FAX (617) 782-4935

SSL 4040E, \$90K; 6048E/G, \$185K; Neve 8026, \$40k; 8068, \$65K; 8108, 28in, \$60K; DDA DMR12, 56 in, \$41K; Harrison 4032, \$25K. **Amek, API, Trident, call. 2+ tracks;** Studer A800, \$42K; MCI JH24, \$19K; Otari MTR-90, \$26K; MX80, \$21K. **AMS 1580, \$2.8K; RMX16, \$4.5K; Neumann U47, \$3.5K; U67, \$2.5K; Eventide H3000S, \$1.7K.**
New Aphex, Eventide, Tannoy, Adams-Smith, dbx, call.
List Your For-Sale Items With Us Free!!

THE NEAT WRAPPER



FAST • EASY • TIDY
Velcro Cable Wraps

RIP-TIE

800-348-7600

Seam Tech

P.O. Box 77394 San Francisco, CA 94107

FINE USED EQUIPMENT

Bought & Sold



Summit
Audio
Inc.
P.O. Box 1678
Los Gatos
CA 95031
408-395-2448

FAX: (408) 395-1403

FOSTEX E-16 multitrack with 16-channel rack dbx in Fostex console with 4050 autolocator/stand. Private owner, smoke-free environment, very low time, absolute mint condition. Best offer. (916) 389-8239.

BRIANIZER Leslie Emulator

The most authentic electronic Leslie-style modulation available. Used worldwide by recording and performing professionals. Warm analog signal processing. Compact, single-channel, foot-operated construction. Independently adjustable horn and bass rotor speeds. 100% money-back guarantee. \$399 delivered. Demo tape, \$8. Avalanche Effects Inc., Box 582, Station "C", Toronto, Canada, M6J 3R9. Call collect! (416) 536-0409.

D&R 8000 Series 32-channel in-line console. Penny & Giles faders. Mosses & Mitchel TT patch bay. In storage — hardly used. New \$50k. Price \$24,900/BO. NEW Tannoy FSM monitors \$3,500/pair. (612) 478-6261.

EQUIPMENT FINANCING

- ◆ No Down Payment
- ◆ True Lease or \$1.00 Buyout
- ◆ Fixed Rates, Long Terms
- ◆ No Financial Statements Required for Transactions Under \$50,000
- ◆ New or Used Equipment

Credit Lease

Commercial Equipment Financing

To apply or request additional information contact
Chris Simpson or John McMinds

(713) 686-4794

BUY • SELL CONSIGN

NEW & USED AUDIO & VIDEO EQUIPMENT

JVC • Sennheiser
Sony • Sampsom
AKG • A.T.

Over 1,500 items in stock:

- JVC DS-DT 900
- Otari MTR 90 / MTR 12 / MX 5050
- Studer A-801 / A-810
- Tascam M-50 / M-216 / 112 / 48...
- Graham Patton 612 / D-Esam 800
- Sound Workshop Series 30

BCS 818-845-7000
FAX: 818-845-9483



"The Cool Guy Stuff"

a full line dealer for:

OTARI • PRO DISK • AKAI • MEYER
TANNOY • JBL • NEUMANN • AKG
APHEX • API • SUMMIT • KLARK • DBX
DRAWMER • LEXICON • EVENTIDE
SOUNDCRAFT • EV • RAMSA • CREST

financing and much more!

A Full Service Pro Audio Dealer
Serving Chicago & Midwest for 18 yrs.

708-339-8014

DBX 120XDS

Sub-harmonic synthesizer

SONY PCM-601ES

Digital Processor

Hard-to-find products in stock
BOYNTON STUDIO INC.

Morris, NY 13808

SALES: (607) 263-5695

FAX: (607) 263-2373

Studio Equipment Sale. ALL DISCRETE Neve 8078, \$125k. Quantec QRS, \$5k. EMT 240 Gold Foil Plate, \$2.5k. Otari 5050B 1/4", \$1.8k. Other equipment, Mics, Amps, Speakers. Call for full listing, (914) 232-1396.

Call for our Free Catalog

Kingdom Sound & Recording Systems

Over 100 Pro Audio lines! featuring: Digidesign Soundtools, Gefell UM-70 mics, PS Systems, Mark of the Unicorn, Tannoy, Klipsch, Hafler, Sabine, Digitech, Mackie, Crest, Toa, Nakamichi, Telex, Samson, AKG, Shure, BBE, Studiomaster, MIDI software & hardware, Opcode, Passport, 3M & Ampex tape, much more.

Call 1-800-334-1456

Ask for Peter Bombar

8:30am-5:00pm EST (FAX) 717-662-3875
Request catalog # SS92

Dolby M24H rack, \$4,300. TTM Dolby rack, \$3,500. Biamp Bimix 20x16 console, outboard power supply, modular, like new, \$2,800. dbx 900 rack, fully loaded, \$2,200. Eventide omnipressor, \$250. Must sell all. Gary (305) 271-1118 (eves.)

SOUNDCRAFT 6000, 44x24x2 console, large frame stand, aux metering, and ext patch bay. Home studio upgrading, like new. Also EMAX, Digitech DSP 256, Rane SM26, UREI 7110, ADL-1000 tube compressor. Wanted: Neumann M49. Call (616) 669-3400.

ORDER DIRECT

IF YOU ARE CURRENTLY USING
UREI • TANNOY • GENELEC • YAMAHA
UPGRADE TO ACOUSTECH 8025

One of the most accurate and reliable speaker systems available. From the company that specializes in Quality Assurance tools for the audio, broadcast and motion picture sound industry.

FEATURES:

- Stable flat frequency response 35HZ-20KHZ ±3db.
- Near zero phase distortion for pinpoint accuracy in high-tech 3D applications.
- Long term listening comfort at all sound levels.
- Superb dynamic range.
- Conservatively rated power handling capability.
- RACK MOUNTABLE IN IEA ENCLOSURE.
- Bi-Wire ready, Portable.
- FFT frequency output chart shipped with each unit.
- 5 YEAR WARRANTY

If you are not completely satisfied with the results using the 8025, return them undamaged for a no questions asked refund. Compare the 8025 to any of the above brands. At \$750.00 per pair you can't afford not to use the Acoustech model 8025. Ask about our referral rebate program.

TO ORDER OR FOR A BROCHURE AND APPLICATION NOTES CALL

1-800-858-8025

1-313-663-7013 FAX 1-313-663-2877
VISA & MASTERCARD ONLY • Hours 8-5 EST

ACOUSTECH™

One-of-a-kind custom API console, 48-input, 32 monitor, 48 550A EQs, 8 discrete sends on every input, Jensen transformers, \$125k. Neve 8068 MkII, 32-input, 32 monitor, 2 Neve 32264 limiters and 4 gates, \$76k. Neve 32-input, portable recording console, all discrete, 36 3-band EQs, similar to 8068, \$48k. Neve 36-input custom console, 5300 Series, 3-band EQ, \$30k. We also have Neve 3-band and 4-band EQs, as well as Neve 32264 limiters. Otari MTR-90 MkII w/ less than 100 hours, \$27k. Ampex ATR-104 1/2", \$7.5k. 9 ft. Steinway C-D Grand, \$16k. Feel free to make offer, we accept trades. Contact Dave Rosen at (213) 467-9375 or fax (213) 467-3962.

LFCI Equipment Leasing

- Up to \$75,000 with credit application only
- Provides:
Off-balance sheet financing, Tax benefits
- New & used equipment
- Generate capital by selling & leasing back equipment
- Nationwide
- Dealers welcome
- Over 10 yrs in the A/V industry

Apply by phone
(800) 626-LFCI

SKB ATA Rack Mounts at an Affordable Price



Meets ATA class 300, Cat. 1 Spec. available in 2U - 12U sizes and is half the weight of conventional wooden racks. Call your local dealer for a demo or fax for the name of your nearest distributor.

434 West Levers Place, Orange, CA 92667 **(817) 847-5400 FAX (817) 847-6319**



WHY GO ANYWHERE ELSE FOR ANYTHING AUDIO

WHEN WE HAVE IT ALL ?

ADAMS-SMITH AKAI AKAI-DIGITAL AKG API ART ASHLY BBE BSS DBX DDA DEMETER DRAWMER EVENTIDE GML FOSTEX HAFLER KLARK-TEKNIK LEXICON MACKIEDESIGNS MILAB RANE SAMSON WIRELESS SENNHEISER SOUNDTRACS SONY STUDIOMASTER SUMMIT AUDIOSYMETRIX TANNOY T.C. ELECTRONICS TUBE-TECH

anything audio

professional audio and video systems

USED SPECIALS - (4) AKG C414B-ULS, \$600 • Alpha Audio DR-2 Hard Disk Recorder/ Editor, Call for price • Eventide H969, \$1K • Eventide H3000S, \$1.5K • Neve 8068, 32 I/O, Mint, \$85K • Neotek Series II/III, 36 I/O w/ patchbay, \$24K • SSL 6056E, 48 I/O, Mint, \$190K • Studer A820 24 track, 1 yr old, \$48K • Summit Audio TPA 200A mic preamp, \$1.5K • Tube-Tech CL1B, \$1450 • API 32x16x24 (20 yrs old, refurbished Sunset Sound console), \$65K • Otari MTR-90 II, low hrs., \$28K • (3) Studer A80 MK III + MK IV, \$25-28K • Telefunken 251 Elam, \$6.5K • Neumann M49, Mint, \$4K • Sony C37A Tube Mic, \$800 • Neumann U87 w/ shock mount, \$1450 • Neumann TLM-170, \$1.4K • MANY MORE ITEMS IN STOCK NOW • CALL FOR LATEST LISTING •

800-788-2875

FAX 617-426-2875

63 MELCHER STREET, BOSTON, MA 02210 617-426-2875

One-of-a-Kind Offering

Vintage Neve 8058

Console personally refurbished and autographed by Rupert Neve. Best offer Call (708) 653-1919 (No brokers please)

SAVE \$300 ON T T

144 POINT PATCH BAYS
brokers of fine and coarse used equipment
audio village 619/320-0728

EXCELLENT PRODUCTION CONSOLE

Auditronics 501, 26x16x26. Very clean in & out. Too many mods to list. Jensen mic pre's. Metal patch bay. Spare parts, snakes & connectors. \$7,250. 3M M70 1/2" 4-trk. Immaculate. Remote. New Heads. \$4,250. (213) 464-2346.

Center Track Time Code Retrofit Kits

- available for
- Studer A80 VU & RC
 - Ampex ATR 102 & 104
 - Sony/MCI JH110 B&C
 - OTARI MX5050 MKIII
 - OTARI MX5050 BII

If you own one of these machines and need time code capability call:

JTR MAGNETIC SCIENCES 201-579-5773

PROBLEM SOLVER



Digital Domain 309 E. 90 St. - 8 NY, NY 10128

DIGITAL AUDIO FORMAT CONVERSION PLUS 4-OUTPUT DISTRIBUTION AMP
Adjust all important Channel Status Bits
Connect AES/EBU & S/PDIF in any combination
Easily interface Consumer/Professional Recorders
Feed 4 devices (DAT, D/A, etc.) simultaneously
For Studios, Remote, & Duplication Facilities
All inputs/outputs transformer coupled
Reduces Digital Jitter
MODEL FCN-1... PROFESSIONAL NET \$450
FCN-1/OPTICAL...\$495; FCN-1E...\$750
Ask about our DAT modifications
For your nearest dealer, contact:
(212)369-2932 FAX 427-6892

HARRISON MR-2, 40-chan., 48-out, 4-band para EQ, 8 sends, optional Mastermix automation, upgraded amps, very clean, in excell. cond. Asking \$45k, please make offer. (203) 227-0565.

MUST SELL IMMEDIATELY:

STUDER A80 MkIII 24-Track;
UREI 813s. All in excellent condition.
Call: (904) 574-0505.

AUDIO/VIDEO EQUIPMENT

Sony APR-24 24-trk., 6 mos. old; Studer Dyaxis w/Digital I/F, System Sync., 1-hr. Drive; Soundcraft 600 16x8x2 console w/ext. P/B; Otari MX5050 MkIII 8-trk. w/auto & dbx; Dolby 363 SR/A 2-ch. N/R; Adams-Smith Zeta-3, two modules & remote; JVC CR600U 3/4" video deck; Sigma C56-450 Vid. Sync. Gen.; more outboard & MIDI gear. All LIKE NEW. (703) 548-8663 or (703) 836-1333.

AMPEX 24-Tr. Mach., TASCAM M-10 Modules, U87s, U67s, H-910, KEPEXs, NEVE 1060 EQs, SONY DATMAN, NACH MR-2, MIDI equip., 1176 LNs, BRYSTON 4B & 3B, TOC monitors. Wanted: NEVE 8014 & BCM 10 consoles, etc. JEFF (713) 688-8067.

QUALITY

New & Used Equipment

INNOVATIVE

Studio Design & Installation

RELIABLE

Service & Maintenance

BUSINESS HOURS

Mon. to Thurs.,
10-8 PM, Fri., 10-6
Sat., 12-5 PM
(Eastern Standard)

BUY, SELL & TRADE

Vintage & Used Equipment

MERCENARY AUDIO

WE HAVE LISTINGS ON SSLs, APIs, NEVEs, etc. ALSO OTARIS, STUDERs, AND MOST OTHER HIGH-QUALITY PIECES OF PROFESSIONAL USED EQUIPMENT. WE BUY, SELL AND TRADE VINTAGE EQUIPMENT.

in stock:

FAIRCHILD 670, 660, 666
TELEFUNKEN ELAM 250, 251s
NEUMANN U47s, 67s, 54s, 56s
NEUMANN SM2, U87s, M49s
STEPHEN PAUL MOD U87s
API 550As, 550s, 560s, 525s
UREI LA-4s, LA-3As
STUDER A80VU 2- & 4-TRKS
AKG C-24, C-12s, 224S
SONY C-37a TUBE, C-500
PULTEC EQP-1s & 1A3s, MEQ-5s
PULTEC EQ-H2s, MAVECS,
TELETRONIX LA-2A
NEVE & HELIOS MODULES
"this is not a problem"
(617) 784-7610 TEL
(617) 784-9244 FAX

MERCENARY AUDIO PERSONAL PROJECT DIVISION

SAME QUALITY-CONSCIOUS SERVICE, FOR THOSE WITH A SMALLER BUDGET... SPECIALIZING IN HOME STUDIO DESIGN, MIDI ROOMS AND SYSTEM CONFIGURATION in stock:
OTARI MX-5050, MkIII-2
BEYER MICs...MANY
API 16-INCH CONSOLE
"still not a problem"
(617) 784-7544 TEL

MERCENARY AUDIO

SUPPLEMENTING THE BEST IN VINTAGE EQUIPMENT WITH THE BEST IN NEW EQUIPMENT now representing:
FOCUSRITE
SUMMIT AUDIO
SONTEC ELECTRONICS
B & K MICROPHONES
CAD CONSOLES/
PROCESSING
"as always, not a problem"
(617) 784-7610 TEL

Audio Systems

Project Studio HQ for the Pacific Northwest

Pro Tools • Mackie
Roland DM-80
Tascam • Fostex
KRK • Tannoy
Crest • Aphex
and much more...

Seattle: (206) 632-7810
Portland: (503) 721-0824

FOR SALE

1 x MCI JH-110 1/4-inch stereo recorder; perfect condition; 7.5, 15, 30 ips; w/integrated speaker; 15,000 French francs.

1 x Series III Fairlight, as new; rack-mount version (separated keyboard & monitor); 16 voices; 14 Meg RAM; 190 Meg Hard Disk; 60 Meg tape streamer; 1 x remote cable extension; 120,000 French francs.

2 X Westlake Studio monitors w/ 2x39 cm woofers and wood exponential horns; 15,000 French francs.

3 X EMT plates, 1 stereo model 162; 7,000 French francs.
2 x mono model 140; 4,000 French francs each.

Contact:

Patrick PELAMOURGUES
STUDIO JEAN MICHEL JARPE
B.P. 58,78290 CROISSY SUR SEINE, FRANCE.
Fax: (33) 1 39 76 76 07
Tel: (33) 1 39 76 41 47

DATRAX DAT RAX



Originator in DAT Tape Storage Systems.

- DATRAX 60 Solid Oak in Natural or Black Finish
- DAT/DAT Tape Flight Cases
- Nylon DAT Tape Carrying Cases

NEW PLASTIC LINE:

- ▲ DATRAX 40 ▲ Video 8mm Rax, holds 36
- ▲ Cassette Rax, holds 48

For information or to order:

CALL TOLL FREE: 800.9.DATRAX
Tel: 818.783.9133 ▲ Fax: 818.783.9318

BRYCO PRODUCTS, 13444 Moorpark St.,
Suite 23, Sherman Oaks, CA 91423

BRYCO

American Pro Audio



- Sony/MCI • Trident •
- Tannoy • Eventide •
- Yamaha • Tubetech •
- Fostex • Soundtracs •
- Beyer • Roland • Akai •
- Ramsa • Panasonic •

Mini Lease Program

New or used, trade-ins 24-60 months with buyout option \$5K-25K **no** financials required min. 2 yrs in business.

1-800-333-2172



AVR AUDIO VIDEO RESEARCH

THE ONLY CALL YOU HAVE TO MAKE FOR OVER 100 LINES, AMONG THEM:

Adams-Smith; ADC; Aircraft; Aiwa-HHB; Akai; AKG; Allen & Heath; Ampex; Anchor Audio; Annis; Anvil Cases; Aphex; API; ART; Ashly; Atlas/Soundolier; Audio Control; Audio-Technica; BBE; BeyerDynamic; Biamp; Bose; Brainstorm Elec.; Bryco; Bryston; BSS; CAD; Caizone; Carver; Casio; Community; Countryman; Crest Audio; Crown; Cutting Wedge; dbx; DDA; Demeter; Denon; Digidesign; Drawmer; Dr. T's; EAW; EFX; Electro-Voice; Eltekon; E-mu Systems; Eventide; Fishman; Focusrite; Fostex; Furman; Gauss; Gentner; GoldLine; Hafler; Harrison; Hollywood Edge; Horizon; Hosa; Hybrid Arts; Innovative Audio; Intraclean; JBL/JREI; Jeanius; JL Cooper; John Hardy; Juice Goose; Klark-Teknik; Klipsch; Latin Percussion; Lexicon; Littlite; Mackie Designs; Mark of the Unicorn; Meyer Sound; Microtech; Midas; Middle Atlantic; MIDIman; Milab; Mogami; Monster Cable; MRL; Nakamichi; Neve (Prism); Numark; Omnimount; Opcode; Orban; Otari; Panasonic; PLI; ProCo; Prosonus; Pro Tek Cases; Ramsa; Rane; Rapco; Servo Drive; Sennheiser; Shure; Simon Systems; Sony; Soundcraft; Sound Ideas; Studioma; Summit Audio; Switchcraft; Symetrix; TAD; Tannoy; Tascam; TC Electronic; TDK; Telex; 3M; Threshold; Timeline; Trident Audio; Turbosound; Turtle Beach; Ultimate Support; Whirlwind; White; and Zoom.

Otari's full-line Dealer for New England and Brazil.

Oferecendo assistencia tecnica e instalcaei no Rio e em Sao Paulo.

Studio and control room design, technical and maintenance service, plus a large selection of warrantied used equipment.

THE WIDEST SELECTION OF USED GEAR

AKG C414EB, CALL; UREI LA3A, CALL; Pultec EQP-1, CALL; AKG C-12, CALL; Neumann U87, \$1,600; RCA 77-DX, \$800; Neumann TLM170, \$1,500; AKG (The Tube), \$1,400; Otari/Sound Workshop 34C 40x24 automated, \$45k; Soundcraft 6000 w/bay, harness 28x16x24, \$16.5k; Otari MTR-90, \$26k; Tascam ATR-80 w/remote w/stand, 24-trk., \$18k; Tascam MS-16 w/dbx, autolocate, stand, \$6,800; Otari Mark III 8-trk., \$2,500; Otari MX 5050BII w/stand, dbx, \$1,300; Lexicon PCM70, \$1,500; Korg SDD-2000 delay, \$400; Yamaha Rev 5, \$1k; Yamaha REV 7, \$400; Yamaha SPX 90, \$375; dbx 160X, \$225.

ALL WARRANTIED AND CALIBRATED TO FACTORY SPECS OR YOUR \$ BACK.

WE BUY, TRADE AND LIST YOUR ITEMS FOR FREE

MC

VISA

65 MAIN STREET WATERTOWN, MA 02172
TEL (617) 924-0660/FAX, (617) 924-0497

MILAM AUDIO

"THE SOURCE"

SINCE 1967

SPECIALIZING IN ALL TYPES OF RECORDING EQUIPMENT, SUPPLIES, DESIGN, INSTALLATION, AND CONSULTATION

CONSOLES ■ D.A.T. ■ MICS
MULTI-TRACKS
MONITORS ■ AMPS

CALL US TODAY

MILAM AUDIO

1470 Valle Vista Blvd.
Pekin, IL 61554
(309) 346-3161
ORDER HOT LINE:
800-334-8187
FAX 309-346-6431

Otari MX70-16, immac. w/synchronizer, remote; \$11,500 OBO. Tascam M15 20x16x8 console, many upgrades; \$2,900. Atari 1040ST w/SMPTE, AV software, color/BW monitors, printer, \$795. (619) 297-5975 or 576-1972, Rob.

Remote truck for sale. Ford chassis with everything new. Ready for your equipment. Has electrical system and 100' power snake. \$9,500. Call Paul at (409) 588-3199.

Soundcraft 1624 mixer: 32 input channels, 16 tape sends, 4 band para EQ, patch bay, FX rack; \$5,500. (317) 251-2244, Indianapolis.

Reliable Music			
TASCAM M-3700/32	IN STOCK	CALL	
TASCAM M600/16	NEW	CALL	
AKAI DD1000	IN STOCK	CALL	
AKAI ADAM COMPLETE	DEMO	\$14995.00	
EMU ESI SAMPLER	NEW	\$2897.00	
EMT 240 PLATE REVERB	USED	\$3000.00	
DIODESIGN SOUNDTOOLS PKG.	NEW	\$2899.00	
ADAM SMITH	BBE	JBL	
OTARI	SOUNDRAFT	AMPEX	
DBX	TASCAM	WARRWIND	
CROWN	HAFLER	LEXICON	
YAMAHA	NEUMANN	HORIZON	
PANASONIC	CARVER	TANNOY	
AKAI	TELEX	WHITE	
ALDO TECHNICA	SHURE	KORG	

OTARI MX70 w/SOUNDRAFT 600/24
USED STUDIO PACKAGE
\$14995.00

STUDIOS TOUR COMPANIES BANDS

LARGE TOURING CONSOLES AVAILABLE
AT INCREDIBLE SAVINGS CALL
DAVID BUSTLE FOR INFORMATION

SOUNDRAFT YAMAHA RAMSA

LOTS MORE RECORDING, PRO SOUND,
AND MUSICAL EQUIPMENT
SOLD AT GREAT PRICES CALL

704/375-8662 EXT. 325
ALL ITEMS SUBJECT TO PRIOR SALE

SYNCLAVIER for Sale; with C processor, release O software, stereo sampling, velocity keyboard, Mac II, 80 meg Winchester, 8 megs RAM Hi-D floppy drive, Kennedy drive with complete sound library and more. \$35k flexible. Call (502) 267-9658 days.

Omni TECHNOLOGY

HAS THE

**BEST EQUIPMENT
BEST SERVICE
BEST PRICES**

**PICK ANY TWO & YOU HAVE
THE BEST DEAL IN**

PRO AUDIO

WE FEATURE:

- Digital Editing ★ Consoles ★ Amps
- Multitracks ★ DAT ★ Monitors
- Effects ★ Studio Supplies
- AUDIO ★ VIDEO ★ DIGITAL
- TAPES & ACCESSORIES

CALL TODAY

1-800-633-6807

Omni

TECHNOLOGY

FORT LAUDERDALE, FL
PH: (305) 583-0626
FAX: (305) 791-8986

HABLAMOS ESPANOL

Neotek Series III console with patch bay. 28x24x2 with 4 effects returns, stand, and side cabinets. \$9,950. Call Paul at (409) 588-3199.

DYAXIS: 2 hrs sample time, synch and DAT backup, 2-pg. display monitor with Mac IIcx. • Mitsubishi X850 32-trk • Yamaha Rev 7 • Lexicon 224, 224XL • EMU SP1200 • Aphex Aural Exciter Type III • Sony VO-9800 • White 1/3-Oct. EQ • Klark-Teknik DN360 stereo EQ • Drawmer 1960 tube compressor • Mac Portable • Bulk tape eraser
CALL (804) 464-4924.

AUDIO/VIDEO equipment.

Sony 5850 3/4 video, \$3.5k. BTX Softouch Synch System: controller, master, 2 slaves, SMPTE generator, cables, \$4k. TASCAM 15 console, 24x16x8, \$3k. Call Audio Inc., (704) 376-3818.

Ampex ATR-102, great condition, \$8k. Mega Mix VCA automation system, includes software, 40 VCAs, IF-8 fader pack controller, plus snakes; \$5k. Call Nina at (212) 226-7035.

SMPTÉ

Time Window

Reads, writes, displays and regenerates SMPTÉ. Syncs SMPTÉ to pilotone or house sync. Much more! Video sync option available. Guaranteed for life! \$349.95

(800) 969-6434

MIDIMAN, 30 N. Raymond Ave., Ste. 505. Pasadena, CA 91103.

Otari MTR-90 II w/ remote, autolocator and EC-101 synchronizer. MINT, \$29k. UREI 809 monitors, \$900. Yamaha G10 MIDI guitar \$500. (415) 543-7095.



Newest Name In Tube/Compressor/Limiters Is The ADL 1000
LA-2A Type Design, Quieter With More Frequency Response
Anthony DeMaria Labs
818-340-0228

NEVE 8128
Neve 8128 56-input, Flying Fader Automation (56 faders), 2 spares, 2 spare power supplies, spare patch bay, custom SIFAM VU meters, optional small speaker pot. All regulators, capacitors, aux & pan pots replaced. All gold connectors on outputs. Neve VR60 w/Flying Fader automation, brand new, still in crate! Call (516) 489-6177.

U47 TUBE
Reproduction Neumann Nuvistor adapter allows you to replace a noisy or defective VF 14 tube in your microphone at a fraction of the VF 14 price, with no loss of performance. Nuvistor tube offers long life, noise-free operation with economical replacement. Plugs directly into the existing tube socket. Install it yourself for \$175 complete. Music Valve Electronics (212) 924-3119.

Looking for used or new MIDI equipment? We've got tons of super clean Yamaha, Roland, Korg, Ensoniq, Kawai, Akai, Kurzweil and E-mu products in stock. Great prices! Come in or do it all through the mail. Call, write or fax for prices & details. Caruso Music, 20 Bank St., New London, CT 06320, USA; (203) 442-9600. FAX (203) 442-0463.

Fairlight Series III with MFJ console. The machine is equipped with (2) 380-megabyte ESDI hard disks and 190 SCSI hard disk, 14 megabytes of waveform RAM, full complement of voices, and streaming tape back-up. Please call (213) 836-7688.

Equipment For Sale
Synclavier, 56-voice, 24 sampling, 32 FM, 9 Meg RAM, 260-Meg disk, Mac II, Release "O" software. (2) Studer A80 VU Mk IV 1/2-inch. 3M 79.2-inch 24-trk. tape machine. Contact (201) 656-7023.

LASALLE MUSIC & SOUND
993 Main St., E. Hartford, CT 06108. Phone: (203) 289-3500
Fax: (203) 289-4382
BEST BUYS ON:
TASCAM, JBL, E-mu, SOUNDCRAFT, FOSTEX, TANNOY, AKG, RAMSA SENNHEISER and MUCH, MUCH MORE!
WE SHIP!
USED AND DEMOS!
SOUNDCRAFT TS 12 (24-in w/ patch bay); \$14,500.
Call for details.

Lasalle Music & Sound

Equipment Rentals

AUDIO/VIDEO RENTALS
GET ACQUAINTED!...SAVE!
FIRST TIME CALLERS
MENTION THIS AD FOR **SPECIAL SAVINGS**
Well-Maintained Equipment
24-Hour Technical Support
FREE Local Delivery

DIGITAL dispatch

Analog/Digital Recorders, VTR's, DAT's, Mics, Dolby, Outboard Gear

213-664-FAST **800-446-FAST**
OUTSIDE CALIF

A Production Rental Service
365 DAYS A YEAR - ANY TIME, ANYWHERE

DESIGN FX AUDIO

DIGITAL AUDIO RENTALS
Specializing in digital tape machines, reverbs and effects processors. Technical consultation included.
213/838-6555
800/441-4415
P.O. Box 491087
Los Angeles, CA 90049

Mix Classifieds—(800) 747-3703

SOUND REINFORCEMENT CONSOLE & FX RENTALS

ATI Paragon	Soundcraft Europa
Midas XL-3	Soundcraft Series 4
TAC SR6000	Soundcraft 800B
Yamaha PM3000	Soundcraft Venue
Gamble EX56	Ramsa WR-S852
Gamble EX48	Ramsa WR-S840
Gamble HC40	TAC Scorpion II
Gamble SC32	TAC Scorpion
Yamaha 2408	TOA RX-7-328

Lexicon • Klark Teknik • t.c. electronic
Eventide • Yamaha • dbx • Panasonic
Roland • Drawmer • Aphex • Symetrix

- * FREE travel and shop setup time
- * World's largest live console inventory
- * 10 yrs of console rental specialization
- * Tours - Weekly - Daily - Long Term
- * **Extremely Competitive Prices!**

Hi-Tech Audio
(415) 742-9166

Equipment Wanted

WE WILL BUY ANY 24-TRK STUDIO EQUIPMENT PACKAGE FOR CASH.
Dave Rosen, (213) 467-9375
Fax (213) 467-3962

EQUIPMENT WANTED
BUY OR TRADE
YOUR USED MULTITRACK RECORDERS AND CONSOLES
EAR PROFESSIONAL AUDIO/VIDEO
(602) 267-0600

MERCENARY AUDIO WANTS TO BUY YOUR:

NEVE-SSL-TRIDENT-AMEK
UREI-TELETRONIX-FAIRCHILD
PULTEC-LANG-UNIVERSAL
AUDIO
NEUMANN-AKG-TELEFUNKEN
AMS

ANYTHING THAT IS OF EXCEPTIONAL AUDIO QUALITY!

"this is not a problem"
(617) 784-7610 TEL
(617) 784-9244 FAX

WANTED: NEVE OWNER FINANCED
Private party seeks owner financing of class A fully discrete console. 28-input or more.
Contact: Bruce or Robb.
(805) 494-3613.

Instruction

EDUCATIONAL VIDEOS
12-hour sound mixing/recording course: \$239; 2-hour course: \$39; 2-hour MIDI course: \$39; plus shipping/handling. Visa/MC/check. For brochure: RECORDING ASSOCIATES, 5821 SE POWELL, PORTLAND, OR 97206. (503) 777-4621.

BOOKS, TAPES, VIDEOS
THE BOOKSHELF
6400 Hollis St. #12, Emeryville, CA 94608
(800) 233-9604 • (510) 653-3307

MUSIC RECORDING INDUSTRY CERTIFICATE PROGRAM
SF State Univ. Extended Education. Classes taught by Bay Area pros. Expand skills or earn certificate. Engineering, management, songwriting & more! Call (415) 338-1372.

Maintenance Services & Repair

MAGNETIC RECORDING HEADS
RELAP/REPLACEMENT for Audio, Video, Time Code, Duplication. 30 years of head design experience.
IEM, 350 N. Eric Dr., Palatine, IL 60067; tel. (800) 227-4323.

ATR SERVICE COMPANY
MICHAEL SPITZ, formerly of Ampex, is now offering REPAIRS * TECH SUPPORT * BOARD EXCHANGE for Ampex recorders * Board and component level spare parts in stock * All exchanged boards are machine tested prior to shipping * Complete machine and motor refurbishing * New FLUX MAGNETICS mastering heads * Call about the Ampex Owners Club * (415) 574-1165.

LA-2A LA-3A OWNERS
BEFORE YOU BUY A NEW T4B OPTICAL ATTENUATOR, HAVE IT REBUILT AT A FRACTION OF THE COST. ALSO STOCK SLOW, MED. & FAST OPTOS.
ANTHONY DEMARIA LABS
(914) 255-7229.

Music Products/Software

FREE-Manny's 1st EVER MUSIC CATALOG!
Manny's brings 48th St. to your doorstep. Become a charter subscriber. Send name and address to: AudioTechniques c/o Manny's Mail Order #7, 1600 Broadway, Suite 803, New York, NY 10019.

PROFESSIONAL LIBRARIAN
IBM database software for organizing Sound Effects & Music Libraries. Data is available for commercial effect and production music libraries.
Call for a Demo disk today!!
☆ All major Sound Effects ☆ Libraries available.
Call for prices.
(310) 820-2868
LEONARDO SOFTWARE



UNDERGROUND SOUND

PRO AUDIO RENTALS

Drum Machines • Monitor Speakers • Amplifiers • Microphones
Noise Reduction • Preamps • Samplers • Synchronizers • Sequencers
Digital Reverbs • Digital Delays • Digital Tape Mach • Analog Tape Mach
Compressors • Mixers • Noise Gates • De-Essers/Exciters
Tube Mics • Equalizers • Custom Racks...We've Got Em

WE CAN BEAT OUR COMPETITOR'S PRICES!!!
Seven Days A Week • 24 Hours A Day
(615) 321-4081 (615) 664-RENT FAX (615) 327-9285
7363

JUXTAB MUSIC DESIGN

LIMITED EDITION LIBRARY MUSIC
UNIQUE CONTEMPORARY ORIGINAL
FOR INFO. AND DEMO PACKAGE
CALL 617-391-5062 OR WRITE TO
JUXTAB MUSIC DESIGN
P.O. BOX 420, BOSTON, MA 02155

The Speaker Design Toolbox™
Friendly Loudspeaker Design Software for the Macintosh

Now with dB SPL! v2.5 Still \$249.00

MacSpeakerz™ from True Image Audio
349 West Felicita Ave., Ste. 122, Escondido, CA 92025
Call for a Free Demo Disk 1-800-621-4411
Outside the U.S.A. Call 619-480-8961

CALL TOLL FREE 1-800-527-DISC

A+R RECORD & TAPE MFG.
902 N. Industrial Blvd.
Dallas, TX 75207

214-741-2027

VISA/MASTERCARD ACCEPTED

No Hidden Cost

500 CDs + 500 Chrome Cassette Package — \$2890.00
1000 CDs Package — \$2890.00
1000 Chrome Cassette Package (With Camera Ready Art Work) — \$999.00

DISC MAKERS

User Friendly
CD, Cassette, &
LP Manufacturing

FREE design and typesetting
Call for our free, full color catalog
1-800-468-9353

1328 N. 4th Street, Philadelphia, PA 19122
215 232 4140, FAX 215 236 7763

AUDIO/VIDEO DUPLICATION
Outstanding Quality
Quick Turnaround

Complete Pkg. - Personalized Svc.
Custom Length Blanks Available
phylco audio/video
Est. 1974 **800-348-6194**

Multimedia

• 1000 CD's for \$2,195!
Other great packages available

- Real-time cassette duplication on Nakamichi Decks
- Digital and Analog Hi-Loop duplication w/ ExPro
- Video Duplication • Digital mastering and editing
- All major credit cards accepted • in-home Design
- Free catalogues 1(800) 228-8333, Baltimore, MD (301) 752-8333

Custom Loaded Cassette Blanks

utilizing
MAXELL XLIH HIGH BIAS TAPE
or your choice of
AMPEX, AGFA, BASF PREMIUM TAPE

Any length up to C-96 rushed to you in
minimum runs of 100 cassettes

TRUTONE INC.
310 Hudson St. Hackensack, NJ 07601
201-489-9180 Fax: 201-489-1771

CASSETTE DUPLICATION SERVICES

"ANYTHING THEY CAN DUPE...
WE CAN DUPE BETTER!!!"

AND CHEAPER TOO!
Real Time duplication package: as low as \$1.05 ea.

- BASF, AGFA or AMPEX CRO 2
- clear SHAPE shell (made in U.S.A.)
- direct printing • NORELOCO box • shrink wrap

CALL FOR FREE SAMPLE:
1-800-367-1921
CASSETTE DUPLICATION SERVICES **CDS**

AAPEX

ULTIMATE FIDELITY

The world's largest Nakamichi real-time cassette duplication system. Full-service packaging. 50 to 50,000 qty. Outside CA, call toll free (800) 323-AAPX or (415) 492-1300 —Call AAPEX today!

WHEN YOUR READY FOR THE BEST!

State Of The Art Cassette Duplication

HIGHEST QUALITY CASSETTE DUPLICATION • CUSTOM LOADED BLANKS • LOWEST PRICES

1-800-242-2015

CUP OF WATER PRODUCTIONS • 13780 12TH ROAD • PLYMOUTH, IN 46563

Records, Tapes & CD Services and Supplies

Disc Mastering and Record Production. CDs, LPs, 45s.

CASSETTE DUPLICATION
THE CUTTING EDGE
Box 217M
Ferndale, NY 12734
(914) 292-5965

3M AGFA AMPEX SONY
Audio, video & digital tapes
DAT recorders
Neumann, Sennheiser, B & K, Shure & Crown Products.
R & M PRO AUDIO
691 10th Ave., S.F., CA 94118
(415) 386-8400

Orders... Large or Small, We Have It All!

Everything in stock.
Wholesale distributors of:

AMPEX • BASF • 3M • MAXELL • SONY

- Audio video tape
- Assorted reels and boxes
- Splicing/leader tape
- Prepackaged cassettes
- We load bulk cassettes in custom lengths

Call for Quote!
(800) 854-1061
TEL (619) 277-2540 • Fax (619) 277-7610

Advance Recording Products
7190 Clairemont Mesa Blvd., San Diego, CA 92111
Visa and Mastercard accepted
WHOLESALE DISTR

CASSETTE ALBUMS FAST

no minimum
BASF Standard & Chrome Tape
Real Time & Bin Loop Duplication
48 Hour Color Inserts • Cassette Printing
Whol Blank Cassettes • Tape & Supplies
Call 904-399-0424 • fax: 904-398-9683

Serving You **THE WAREHOUSE** Since 1975
STUDIO SALES
2071-20th Emerson St., Jacksonville, FL 32207

CASSETTES

High Speed Gauss HxPro
Our 28th Year Providing:
Quality & Turn Around
Complete Packages
Personal Service
Custom Loaded & Budget
Blanks Available

Jackson Sound Productions
3897 South Jason Street
Englewood, CO 80110
(800) 621-6773

COMPACT DISCS REAL-TIME CASSETTES

uplicated on the largest KABA System in the Southwest.

"Quick turnaround, low prices!"
MasterCard and Visa accepted

(214) 630-2957

Crystal Clear Sound
4902 Don Drive, Dallas, Texas 75247

How To Get A RECORD DEAL
Make Your Music LOOK As Good As It SOUNDS

Full Color CD & Cassette Inserts From \$115

1-800-955-5273 Free Catalog

ASG O Cards Tool

For Excellence in Sound Make the **BEST** Choice

RECORD PRESSING
CASSETTE DUPLICATION
CHROME BLANKS
COMPLETE ART DEPARTMENT!
FULL COLOR PRINTING
COMPLETE PACKAGING

1,000 CASSETTE SINGLES
300 12 in. SINGLES
\$1699.00

1,000 CD SINGLES
\$3199.00

*Prices include pre-mastering, mastering, label printing, full color or card or four panels of booklet printing, shrink wrap
Price does not include shipping, film or artwork

145 S 45th St. YSA **1(800)627-7365**
Richmond, CA 94804 MASTERCARD

1000 CD'S \$ 2,850.00

INCLUDES: QUALITY WORK AT A LOW PRICE

- Pre-master
- Glass Master
- CD Fabrication
- Film Label
- Printing
- 4 Color Booklet
- 4 Color Tray Card

TRS
1-(800) 942-DISC (3472)

We'll put your DAT or 1/4" Master in any sequence at no charge

TRAXX RECORDING PRODUCTS
24 Crestway - KC
New Fairfield, CT 06812

- Real-time dup. & full-svc. pkg.
- Custom-loaded cassettes & sup.
- High-quality, fast turnaround

For Free Catalog call:
(203) 746-3561.

Just Like the MASTER

Personal Service Quality Product Competitive Pricing

Custom CD Cassette Packages

Custom Loaded Blank Tapes
Audio C-45 - 74¢ Video T-45 - \$2.30

Phone/Fax
303-469-3509

If You Don't Sound Good, We Don't Look Good.

State of the art mastering, replication, and duplication services for the discriminating producer.



TRUTONE INC.

310 Hudson St. Hackensack, NJ 07601 • 201-489-9180 Fax: 201-489-1771



RECORDING & DUPLICATING SUPPLIES

1-800-272-2591

2732 Bay Road Redwood City, CA 94063 free catalog

ESP

TAPES & CD'S

- CD REPLICATION
- HIGH SPEED CASSETTES
- AUDIOPHILE REAL TIME CASSETTES ON TDK-SA
- DIGITAL MASTERING AND EDITING
- COMPLETE PRINTING AND PACKAGING

EASTERN STANDARD PRODUCTIONS, INC.
37 JOHN GLENN DR. BUFFALO, NY 14228
TEL. 716-691-7631
FAX. 716-691-7732
1-800-527-9225

1-800-527-9225
FOR A FREE BROCHURE

CD Replication & Cassette Duplication

Real Time & HighSpeed...
Digital Editing
Graphic Design
Printing
Full Packaging
CD & Cass. Pkgs
ProtoSound
One Mill St.
Burlington, VT
05401
802.864.9020

WE'RE #1 IN DAT TAPE, OVER 35 DIFFERENT KINDS! 1-800-245-6000
1-800-DAT TAPE CLUB 17TH YEAR

NOBODY BEATS US IN SERVICE, SELECTION AND PRICE

BOB DYLAN	THE	DE MON	BASP
1000	1000	1000	1000
1000	1000	1000	1000
1000	1000	1000	1000
1000	1000	1000	1000
1000	1000	1000	1000
1000	1000	1000	1000
1000	1000	1000	1000
1000	1000	1000	1000
1000	1000	1000	1000

USA INC. NO EXTRA CHARGE
TAPES WORLD, 228 W 57TH ST. BOX 961, BUTLER, PA. 16005-0051
WE ALSO STOCK OVER 400 ALBUMS & VIDEO TITLES

Sell fast through Mix Classifieds. Call (800) 747-3703.

Recording Services

AUDIOPHILE QUALITY... EUROPADISK, LTD.

US' MOST COMPLETE FACILITY!

- Cassette Duplication
- Compact Disc Production
- DMM Vinyl Pressing
- Custom Graphics
- Mastering Studios

COMPLETE PACKAGES with state-of-the-art Neve Digital Mastering for CD, Studer & Lyrec HX-Pro Cassette Duplication, DMM Mastering for Vinyl and a complete in-house art department - design, layout, typesetting, color separation. Get THE BEST at no extra cost!

For a Complete Brochure, call or write:
EUROPADISK, LTD.
75 Varick Street, New York, NY 10013
(212) 226-4401 FAX (212) 966-0456

DIGITAL TRANSFERS

db+

CD MASTERING
DIGITAL EDITING
CD PRODUCTION

db PLUS
DIGITAL SERVICES INC.
BOX 694 LYNBROOK, N.Y. 11563
(516) 872-2325

TAPE DUPLICATION
REAL TIME & HIGH SPEED
1/4" DISTRIBUTION & RUSH SERVICE
DUPLICATION SPECIALISTS
(N.Y.) 516-432-7107

Studios For Sale

12 L.A. STUDIOS FOR SALE NOW!
Starter rooms to world-class facilities. Commercial & residential, some with property included. Prices from \$200k to \$7 Million. Bruce Conover, Studio Agent. (213) 649-3250 or 306-0204.

24-TRACK STUDIO MIDTOWN NYC.
2,500-sq.-ft., custom-built recording room, live room, shower, etc. Long-term lease, fixture fee, \$100k. (212) 213-1848 or (213) 306-0204.

SO. LAKE TAHOE, NV MUSICIAN'S DREAM.
Borders Nat'l forest, mtn. views, im-mac. cond., Indscpd, 2,900 sq. ft., 4 bd, 2.5 bath, plus 2 car gar., w/com-plete 24 trk. studio above gar, Otari, Trident, Tannoy, Isuzu Trooper 4WD, complete gym & furn. Make offer; equip. optional. Call for fact sheet: (800) 242-5387, Jim Porter.

RECORDING STUDIO on private country estate with 4-bedroom home. Newtown, Conn., 1-1/2 hours from N.Y.C. \$595,000. Brochure available. Owner/Broker: (203) 426-5385.

INVESTOR
Serious investor seeking to buy a small share of a profitable, functioning recording studio in the New York City area. Call (914) 631-1723 after 6:00 p.m.

BROOKLYN HEIGHTS LIVE/WORK
Buy co-op apt. converted private prof. studio, gorgeous area, 1 stop M'hattan. Soundprf, a/c, iso, new kitch. W/ or w/o mint equip: MCI 636, Sony 24-tk, Studer A80, outbd gal-lore, Steinway A, Hammond B-3, drums, furn. (718) 852-3572.

Prof. 16-trk. recording studio. Com-plete turnkey equip.—ready to record. All gear in excellent working order. Very few hours on the equip.—relocating. \$25k takes it all includ. desk & chairs. For comp. equip. list call (215) 767-8981.

North of San Francisco in Marin. Great small studio looking for a good owner. Care was taken when putting this studio together. Vintage mics, Meyer's ACD mons, custom con-sole, quality outboard gear. \$65k O.B.O. Msg, (310) 285-3486.

Video Equipment Services & Supplies

Video for Audio Lockup. Rebuilt 3/4" VTRs for sale w/warranty (some w/ address-track time code). JVC: CP5500U, CP5550U, CR6650, CR8200U, CR8250U & CR850U. Some remote control units avail. Sony: VT-5000, VO-5600, VO-5800, VO-5850, BVU-800. (212) 580-9551/(212) 206-1475. Fax: (212) 929-9082. Michael Temmer.

ATOMIC MEDIA GROUP

Atomic Media Group

- Digital Audio MIDI and SMPTE locked to video
- 3D Graphics / Animation
- Complete Audio & Video Productions

510-430-8012

Miscellaneous

COMPLETE CD AND CASSETTE PRODUCTION

DIGITAL HOUSE
212-333-5950

MASTERING REPLICATION
PRINTING TOTAL PACKAGING
POSTERS GRAPHIC DESIGN STUDIO
PERSONALIZED EXPERT SERVICE

101 WEST 57TH ST. NEW YORK, N.Y. 10019
"FOR THOSE WHO HEAR THE DIFFERENCE"

Pinfeed Audio Cassette

"J" Card Inserts
1,000 for \$29
Free Catalog
Pro Label, Inc.
301-598-2357
Visa * Mastercard * American Express

POP FILTERS

An absolute necessity for every studio

\$59.95 includes screen, clamp, gooseneck and shipping

CALL NOW TO ORDER
Outside CA (800) 446-7677
Inside CA (818) 788-3635

POPPER STOPPERS
P.O. Box 6010-658, Sherman Oaks, CA 91413
DON'T SETTLE FOR LESS, GET THE BEST!
THE ORIGINAL POPPER STOPPER
NOW DOUBLE THICK FOR XTRA PROTECTION

BOYNTON STUDIO INC.
In the business of supplying professional audio equipment to professionals since 1953 — Over 100 brands of new equipment. Clean used equipment.
GIVE US A CALL AT
(607) 263-5695
FAX (607) 263-2373

FIRE THE MAID!

How can I control the dust in the studio and increase the efficiency and longevity of my equipment...
Easy!

-Pure Air Filtration Systems
-Custom Nylon/Vinyl Covers

CALL NOW!
1(800)228-DUST
Brochures Available Upon Request

LeCover
The Dust Control Company

AUDIO CABLES

whirlwind
GENARE

**BELDEN
HAVEFLEX
MOGAMI**

BEST QUALITY - BEST PRICES
ASSEMBLED - BULK - CUSTOM

518/828-2000

FREE catalog of Professional Tape, Equipment, Accessories, Supplies

HAVE
309 POWER AVE. HUDSON, NY 12534

FOR CLASSIFIED AD RATES, CALL ROBIN BOYCE
(800) 747-3703

FEEDBACK

Epilogue to Lion Share

Lion Share Recording Studios, one of Los Angeles' premier recording studios, closed its doors at the end of December 1991. During its 10-1/2 years, I was employed at Lion Share as the evening tech (even being there covering sessions that lasted until sunrise). I feel most privileged to have worked at Lion Share for all those years.

As I look back over my 23 years in the audio recording industry, what makes this more of a sad occasion is the end of what was mostly unheard of in the recording business: a studio with a heart, not for the music but for its employees. It was a heartfelt affection toward the employees that was implemented by Kenny Rogers and continued by Lion Share's captains Jay Antista and Terry Williams. Not only were the benefits extensive, there was also the occasional get-together, such as barbecues and picnics in the park, that made it a family atmosphere.

Why did Lion Share fail? My conclusion: It is a shame that recording studios are at the bottom of the audio recording industry food chain. It seems that by the time the big budgets, doled out by the multimillion-dollar record companies to their prodigy producers and artists, finally reach the recording studios, there appears to be very little left to spend. So producers and artists wheel and deal their way through the studio chain for cheaper rates, knowing that studio managers can either take what's offered or leave their studios empty. Either way, less revenue means less money to spend on updating equipment, less money for ever-increasing costs in studio supplies, and less money to retain good employees. Figure this on top of the recession, and studios go out of business. The trickle-down theory never reaches the bottom, where studios continue to

scrape to make their living. Too many sponges at the top are sopping up the cash flow.

Paul Bassett
Surfside, CA

The New Studio Owners

There has been a lot of discussion on the topic of "home studios" and their effect on the big boys, and much ado over the changing intern job market for the technically advanced second engineer. However, and to my surprise, no one makes a connection between the two. My experience is that there is a very strong connection. I say this because I'm caught up in the middle of it right now.

I graduated from a state university with an audio production degree. During the time I was in college, I had several internships. However, the problem arose when I graduated and had to support myself and pay off my student loan. When one comes from a lower middle class background, shares accommodations (on-campus, no car needed) with others in student housing and maintains a diet of Top Ramen, one manages to earn enough money on weekends and odd hours to pay for an education and intern for free without going into debt.

However, once I graduated, I was in the real world: car, insurance, high rent, loan payments, not to mention unaffordable "luxuries" like health care and dental insurance. So what's my point? Well, I had to leave the non-paying internships, where I was perfectly happy just being able to learn, to find gainful employment in a non-related field. Why non-related? Because the industry cannot bring itself out of the dark ages of indentured servitude. Which brings me full circle: What are people like me supposed to do to get their audio fix?

I'll tell you what I did, and what I think so many more are doing: I put together a home studio. I never in-

tended to own a studio. I fell in love with recording music. The tasks of scheduling, buying and maintaining equipment, and dealing with the state board of equalization, IRS and BBB have never appealed to me, especially the latter. I work 52 hours per week now just trying to get by, and I refuse to give my remaining few hours to some studio that thinks years of studying audio qualifies me to make coffee, throw out the trash and then take studio time at 4:00 a.m. for payment (if anything at all).

My studio isn't much now, but I'm learning hands-on. And I'm patiently saving money to buy more equipment. And pretty soon I *will* take business away from the big studios, I promise.

It is truly unfortunate that this situation has a simple problem and a simple solution, yet no one has the wherewithal to confront it. The simple problem is greed, and the simple solution is long-term thinking. When you try to increase your profit returns by not paying gofers, interns or seconds, the only thing you really accomplish is a high turnover rate, which leaves you with fewer people who understand your facility and its equipment.

We all know how important it is that a client feels secure about the facility he or she is spending money on. One bad experience with a second who wasn't there long enough to learn the equipment or procedures is all it takes to lose an account. I suggest to you that a little long-range thinking will avoid this problem and actually increase profit margins by retaining current accounts and attracting others.

Think of it as an interest-earning savings account. I guarantee you'll get a return on your investment.

Terry Garcia
The Sound Foundation
Sacramento, CA

Vocalist named Product of the Year!



The Vocalist from Digitech

The Vocalist™ has two new features for 1992. *Most Innovative Product of the Year* and *Most Innovative Effects Device* from *Musician* magazine. It's the only voice processor that really sounds like human voices, not like chipmunks.

The Vocalist from Digitech™ delivers *real* voice harmony and pitch correction. It even remembers every song and

never gripes about rehearsal time.

The Vocalist is perfect when you need one or two harmonies for back-up, or when you need up to five harmonies

to save time in the studio.

No other harmony processor can give you natural sounding, human voice harmony and can compensate for off-key voices.

If you want award-winning harmony, check out the Vocalist from Digitech.

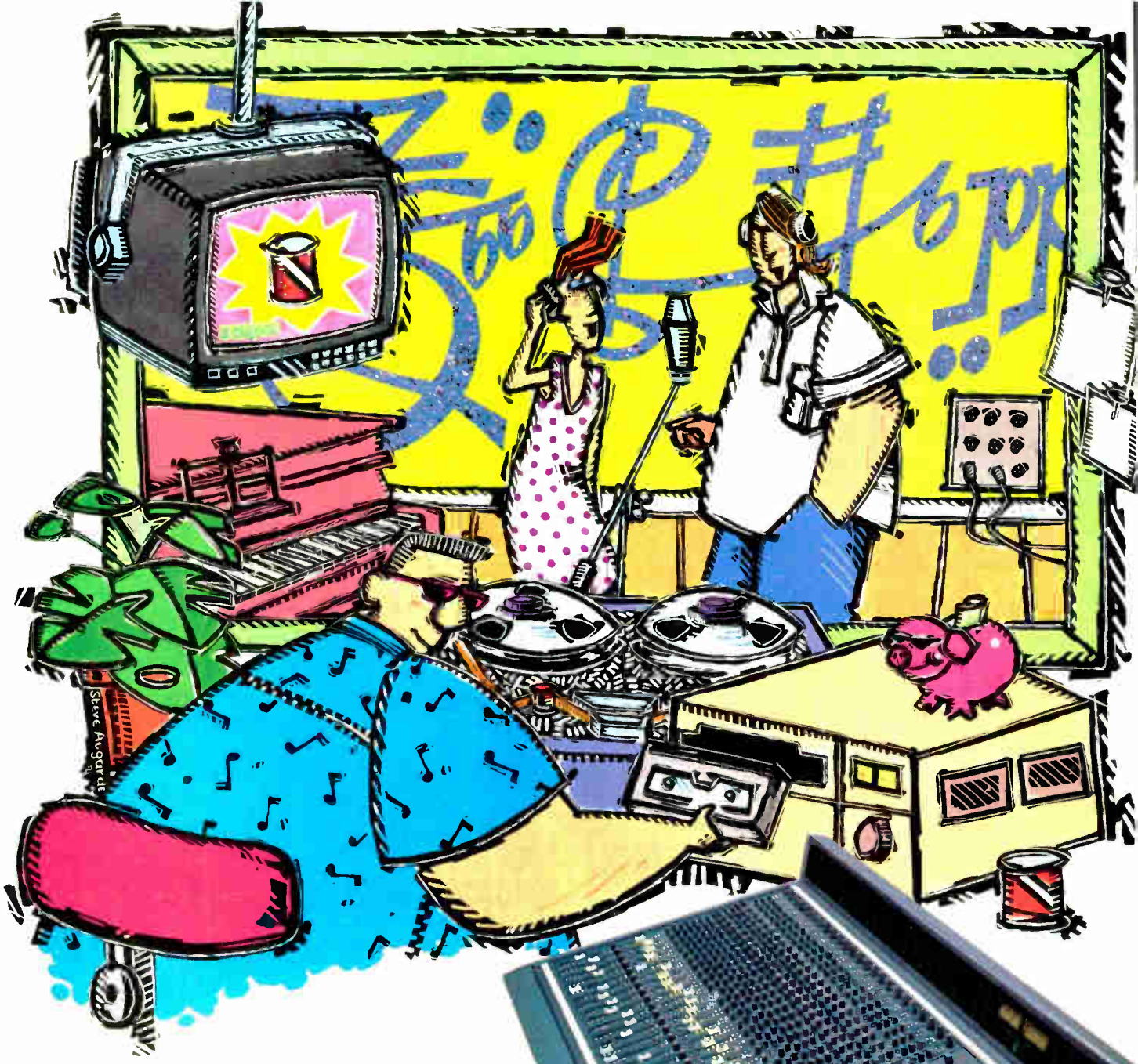
Send \$10 for the Vocalist Video Demo.

Digitech

H A Harman International Company



Musician magazine, 1992 Most Innovative Product of the Year. 1992 Most Innovative Effects Device in the category of signal processor.



For The Artist In Every Engineer.

In recent years, recording methods have changed drastically. In today's studio, you're the artist, the engineer and producer. Designing today's professional recording or production studio presents unique challenges, like finding a flexible full featured console that fits your space, budget and audio requirements.

Soundcraft's Sapphyre lets you create both music and a recording environment the way you want it. Sapphyre gives you 32 track performance normally found in consoles many times the price. A noise gate on every channel. Great sounding four band EQ. A variety of modules to suit the way you record. And five frame sizes.

Sapphyre. Its unique, flexible routing and design approach puts everything you need where you need it. Direct to tape routing with grouping to any channel provides total creative flexibility. The in-line design takes up less space than conventional consoles and is as intuitive to use as any split console. Whether you're building a home studio, adding a video post suite or designing Studio Two, Sapphyre will bring out the artist in you.

Now you can afford the best. Hear Sapphyre today at your authorized Soundcraft dealer.

Soundcraft

Soundcraft USA/JBL Professional
8500 Balboa Boulevard, Northridge, CA 91329
H A Harman International Company



Sapphyre