

JANUARY 1989
U.S. \$3.00
CANADA \$4.00

THE RECORDING INDUSTRY MAGAZINE

Mix

Interview: Yoko Ono

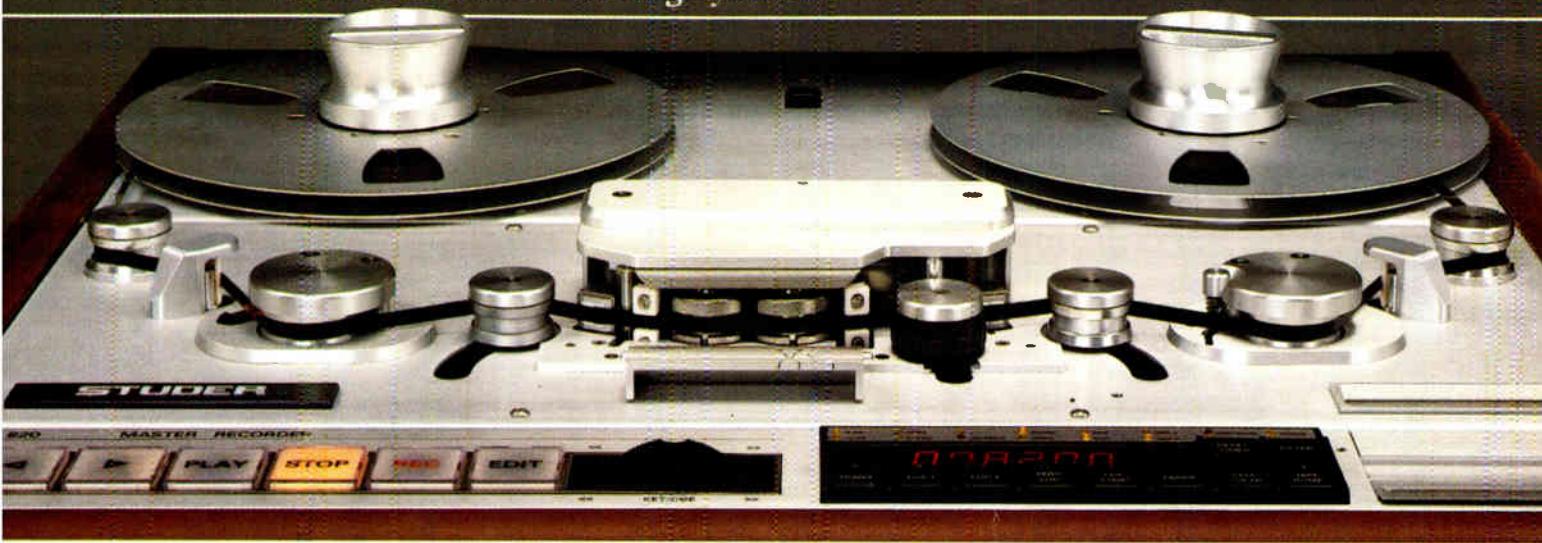


**Listings:
Northwest Recording Studios
Equipping the Home Studio**

067682 MX 12 99
JBL INCORPORATED
MARK R GANDER
8500 BALBOA BLVD
NORTHRIDGE CA 91329

**Field Test: Emulator II
Frank Zappa's "Porn Wars"
Larry Carlton's Studio
Chorus Line Sound**

Studer Audio: Advanced Recording Systems



The hardware is typically Studer. The software is simply astounding.

The transport mechanics in our new A820 Analog Master Recorder are solid, stable, and precision-crafted in the Swiss tradition. That's all typically Studer. What's new is an ingenious network of software-controlled operating systems.

Future Perfect. The A820 is designed to meet the demands of tomorrow's computer-controlled audio production facilities. Multiple on-board microprocessors control all operating sub-systems, including capstan drive, spooling motors, and audio parameter settings. Most operating features are user programmable, allowing you to tailor an A820 to your exact needs in a matter of minutes. If your needs change, you simply re-program your features. Also, virtually every operating feature of the A820 may be accessed and controlled through an optional RS232/RS422 serial data port.

Gentle on the Wind. The A820 handles your valuable tapes with kid gloves. The DC capstan motor starts, following a defined ramp, only after the pinch roller is engaged. A closed

loop servo system monitors tape tension and reel inertia to provide optimum acceleration and braking. Both tape tension and tape winding speeds are user programmable.

The Wheel Thing. The A820's dual thumbwheel shuttle/edit control makes tape-cut editing a breeze. One wheel fast winds tape in either direction at increasing speeds while the other precisely positions tape for the edit.

Also Noteworthy. The A820 incorporates Studer's new generation of phase compensated audio electronics, available with either transformer or active balanced inputs and outputs. In sound quality, the A820 takes a quantum leap ahead of recorders made just a few years ago. Options for the A820 include a center-track SMPTE time code channel and test generator.

The Payback. The "hardware" in the Studer A820 is made to give you dependable service for years to come. That's the Studer tradition. Plus, with its advanced software, the A820 also does more different jobs,

gets more jobs done in less time, and produces sonically superior results. That's the bottom line in any upgrading program.

For more information on the new A820 Analog Master Recorder, please contact: Studer Revox America, 1425 Elm Hill Pike, Nashville, TN 37210; (615) 254-5651.

STUDER REVOX



DEPARTMENTS

- 5 CURRENT
- 6 INDUSTRY NOTES
- 8 SESSIONS/
STUDIO NEWS
- 60 PREVIEW
- 174 CLASSIFIEDS
- 178 AD INDEX

LISTINGS

- 128 NORTHWEST
RECORDING STUDIOS

AUDIO

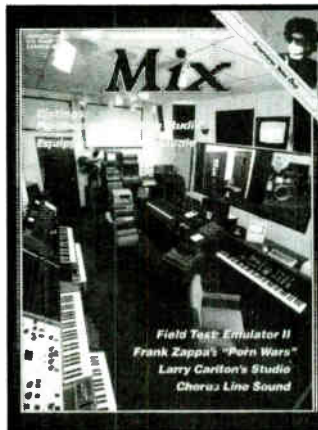
- 12 AUDIO
APPLICATIONS:
AES PAPERS
by Ken Pohlmann
- 18 SOUND FOR "A
CHORUS LINE"
by Nick Pasquariello
- 28 ARTIST STUDIO:
LARRY CARLTON'S
ROOM 335
by Dan Daley
- 35 EQUIPPING THE
HOME STUDIO:
A FORUM
by George Petersen
- 62 FIELD TEST:
EMULATOR II
& DIGIDESIGN
SOFTWARE
by Larry Oppenheimer
- 72 SOUND ON STAGE
- 76 IN SYNC: THE SMPTE-
MIDI CONNECTION
by Bruce Nazarian
- 114 NORTHWEST STUDIOS
GEAR FOR
THE FUTURE
by Linda Johnson

MUSIC

- 44 LUNCHING
WITH BONZAI:
JAMES LEE STANLEY
by Mr. Bonzai
- 50 THE CHANGING FACE
OF BAY AREA RADIO
by Linda Jacobson
- 80 M.I. UPDATE
by Craig Anderton
- 82 YOKO ONO'S
NEW OPTIMISM
by Rip Rense
- 90 MUSIC NOTES
 - Mr. Zappa Goes to
Washington
 - Hank Williams and
Willie Nelson
 - Blues Giant
Robert Cray
 - The SynthAxe
- 102 PLAYBACK:
PAUL WINTER'S
"CANYON CONSORT"
by Bruce Pilato

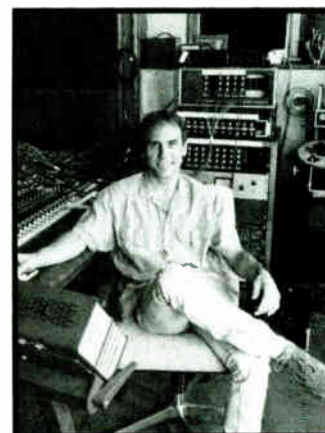
VIDEO

- 110 VIDEO NEWS
by Elizabeth Rollins
- 112 MVP: EFX BY THE BAY
by Lou CasaBianca



Cover: The Music Source, owned by producer Jim Wolfe, is located in Seattle. The 24-track facility, designed by Herb Chaudiere, features MCI console and machines, and keyboards by Kurzweil, Emulator, Oberheim, Yamaha, and Moog all located in the control room and MIDI linked by an Apple Macintosh computer. Cover photo: Jim Fagiolo

Whether for cutting quick song demos or for scoring to picture, owning a home recording studio is a dream shared by many. George Petersen solicits advice from retailers on Equipping Home Studios in the under-\$10,000 range (page 35) and correspondent Dan Daley examines guitarist/producer Larry Carlton's Rm 335, his 24-track home facility (page 28).



The spotlight falls on Northwest Recording this month, with studio listings beginning on page 128. Linda Jacobson checks the current state of San Francisco Bay Area Radio (page 50), while Linda Johnson's in-depth report on the healthy Northwest Recording Scene begins on page 114. Pictured at left is Sun Valley Audio, in Sun Valley, Idaho.

Mix Magazine is published at 2608 Ninth St., Berkeley, CA 94710 and is ©1986, by Mix Publications, Inc. This is Volume Ten, Number One, January, 1986. Mix (ISSN 0164-9957) is published monthly. Subscriptions are available for \$24.00 per year. Single or back issue price is \$4.00. Subscriptions outside U.S.A. are \$36.00. Please address all correspondence and changes of address to Mix Magazine, 2608 Ninth St., Berkeley, CA 94710. (415) 843-7901. Second Class postage paid at Berkeley, CA and additional mailing offices. Mix Magazine is distributed in recording studios, pro-audio stores, music stores and other related businesses. If you have a recording or music related business and would like to distribute Mix, please give us a call. Display advertising rates, specs and closing dates are available upon request. This publication may not be reproduced or quoted in whole or in part by mimeograph or any other printed means, without written permission of the publishers.

DREAM MACHINE.

20.0

If mastering or post production is your business, our new MTR-20 is your dream machine. It's the only new 1/2" four-channel with 14" reels, to give you one hour recording at 15 ips. It also comes in 1/4" center-track time code, 3/4" two-channel, and 1/2" two-channel versions. And, the MTR-20 features Otari's exclusive Auto-Alignment for fully automatic calibration of record adjustments.

You can program the "20" to fit your personal style, with over 400 different set-ups. These range from controlled wind speed to a complete re-ordering of the transport control buttons—you can even make it left-handed if you want! You see, there are so many different applications for the MTR-20 that, rather than lock you into just *one* mode, we let you configure the machine to your specific needs.

Call your Otari dealer today, and wake up to the Dream Machine tomorrow. From Otari: The Technology You Can Trust, Otari Corporation, 2 Davis Dr., Belmont, CA 94002. (415) 592-8311 Telex 9103764890.

OTARI®



Circle #077 on Reader Service Card



CURRENT

NAMM Winter Market Educates Dealers

The annual National Association of Music Merchants Winter Market, which draws over 20,000 music and audio retailers to exhibits by several hundred musical instrument manufacturers and suppliers, is being held January 17 through 19 at the Anaheim, CA, Convention Center. A number of seminars are also being offered to the NAMM dealer members for their professional development and technical updating. Creative consultant Glen Ingles will host "Ads That Work—A Study of Today's Advertising, What Works Best and Why," sponsored by the Music Distributors Association. Speaking for the National Piano Manufacturers Association, neurologist Dr. Frank Wilson will lead a discussion on the relationship between the brain and an individual's capacity to play a musical instrument. Passport Designs' Chris Albano will offer an overview of current products and customers, future technologies, distribution channels and potential customers for "MIDI and Music Software—Where are the Markets?" Other seminars currently planned will explore financial management for music businesses and trademark and copyright protection. For more information, contact NAMM at (619) 438-8001.

TV Technology Demo Program

The Association of Maximum Service Telecasters and the National Association of Broadcasters are considering the joint sponsorship of a series of demonstrations of advanced television systems to highlight the terrestrial performance of such recent innovations as an improved NTSC system, an enhanced 525-line scanning system, and high definition television. The goal of the demonstrations would be to showcase potential improvements in television service to the public, Congress and the FCC; as well as to make the needs of local broadcasters known to the broadcast equipment manufacturers. For further information contact Greg DePriest at (202) 347-5412 or Tom Keller at (202) 429-5346.

Consumer Audio Study Released

The Electronics Industries Association's Consumer Electronics Group has released a 254-page study of the pur-

chase behavior, attitudes, listening habits and audio equipment ownership of 1,600 consumers identified as recent purchasers of home, car or portable audio products. Prepared by the firms of Burke Marketing Research and Market Facts, Inc., under the direction of the Consumer Group's Marketing Services Audio Committee, the study is available to non-members for \$750. Inquiries should be directed to EIA/Consumer Electronics Group, 2001 Eye St. N.W., Washington, D.C. 20006, (202) 457-4919.

Television/Broadcast Market Surveys

Two television industry market surveys have recently been developed to quantify the professional broadcast equipment purchasing situation and the market's financial health. The first, a two-part study by the National Association of Broadcasters, consists of a Financial Report on typical television stations' revenues and expenses for many different station types in various market and revenue categories; and a Market Analysis on 1984 revenue and expenses in 97 geographic markets. The NAB's Station Services Department [phone (800) 368-5644] is offering the two volumes to non-members at \$80 for the Financial Report and \$300 for the Market Analysis.

Another survey, a census of in-place equipment at television broadcast stations, is being conducted by the independent research firms of Douglas I. Sheer & Associates and DC&A Market Research. Called the "Broadcast Equipment Marketplace," this survey intends to pinpoint actual ownership of in-place audio, video and ancillary equipment by type, brand, model and vintage. Additionally, issues such as plan-to-buy, format preferences, purchasing policies, features and specifications sought, and media and promotional influences will be studied. The BEM survey, conducted in cooperation with several corporate sponsors, is targeted for completion prior to the April NAB convention. For more information on this study, call (212) 532-5511.

Performance Summit Conference

Performance Magazine, the weekly trade publication for the live entertainment industry, will be hosting their sixth

annual Summit Conference of the concert touring industry January 23 through 25 at the Fontainebleau Hilton Resort in Miami Beach. The Summit will include 12 panel sessions ranging from the changing roles of promoters and facility managers to the importance of showcase clubs as training camps for up-and-coming talent. Also on tap will be a trade show with exhibit booths, artist showcases and a televised awards show recognizing those acts and businesses that have excelled on the touring front, as voted on by touring industry acts, personal managers, booking agents, facility managers, showcase club operators and production companies. For more information, call (800) 433-5569.

Neve Acquired by Siemens

Rupert Neve Incorporated, a wholly owned subsidiary of Neve Electronics Holdings Limited, has announced that Neve Electronics' parent, Energy Services & Electronics, now part of Brammer plc, has reached an agreement with Siemens A.G. Austria and Siemens Limited in the United Kingdom for the transfer of control to them of Neve Electronics Holdings Limited (Neve Audio). It was announced last year that Neve Audio would be sold following the purchase of Neve Audio's parent by Brammer plc.

Concerning the acquisition, Laci Nester-Smith, Neve Audio's Group Managing Director explained that "the removal of the uncertainty about our future ownership will be welcomed by our customers, employees and suppliers alike. The individual product and market positions of Siemens and Neve Audio complement each other well. As a result, the world audio market will get a more comprehensive service from this combined group and it is Siemens' intention to build up the Neve business." Siemens is committed to the further development of Neve's technology in both the analog and digital fields and significant R & D programs are planned.

1986 AES Show Dates

The 1986 conventions of the Audio Engineering Society will be held March 4-7 in Montreaux, Switzerland, and November 13-16 at the Los Angeles Convention Center. For more information, contact the Society, (212) 661-8528.

INDUSTRY NOTES

Bruce Jackson, fresh off the road as chief engineer for the recent **Springsteen** tour, has formed **Apogee Electronics Corporation**, at 2201 Marine St., Santa Monica, CA 90405, ph. (213) 450-8888, to import and distribute professional audio products. . . **Kevin Kent**, former director of sales and marketing at **Linn Electronics**, has launched **K-Muse Inc.**, a high tech musical instrument design and marketing company at 18653 Ventura Blvd., Suite 359, Tarzana, CA 91356, ph. (818) 703-1562. . . **Tom Irby** has been appointed operations manager at **Valley People, Inc.**, in Nashville, TN, responsible for overseeing all aspects of the company's daily activities. . . proposals are being solicited for the **New Music Chicago Spring Festival '86**, April 14-20. For information: NMC Festival Committee, 410 S. Michigan, Suite 618, Chicago, IL 60605; (312) 427-4049. . . the professional video division of **JVC Company of America** has hired **Ray Connelly** as district sales manager. . . At **Soundcraft's** Santa Monica, CA, headquarters, **Kris Jackson** has been appointed technical engineer for the upper range of consoles, **Dan Burns** has been added to the quality control department and **Debbie Bodell** has been named parts coordinator. . . **Dee Farr** has been named new **Akai** national product manager for keyboard products and training clinics. . . **James Rouse** has been appointed technical sales representative in Los Angeles and Orange County for the Magnetic Tape Division of **Agfa-Gevaert, Inc.** . . **Crown International** has added **Herman Mack** to the staff of their Prototype Engineering Group. . . **Hugh T. Landy** has been appointed vice president of special markets at **ElectroSound, Inc.** . . The **Harris Corporation** of Melbourne, FL, has acquired product rights, inventories and equipment of **ADDA Corporation**, a Los Gatos, CA, pro-

ducer of television-studio systems. . . **Sony's** Professional Audio Division has appointed **New York City's Martin Audio Video Corporation** to handle the complete Sony digital audio product line and **Westec Audio Video Ltd.** to handle consoles, mixers, microphones and analog tape recorders. . . **Richard F. Colburn** has been appointed marketing services manager at **Nakamichi USA**. . . **FM Acoustics USA** have moved their office to P.O. Box 854, Benicia, CA, 94510, ph. (707) 745-4444. . . **ICM Video** of Oklahoma City, OK, announced the addition of an exclusive western sales representative, **Mike Schueder** to cover California, Nevada and Arizona. . . **J.L. Cooper Electronics, Inc.** has announced that **Steve Cunningham** has joined the company as sales and marketing manager. . . **Robert A. Slutske** and **John P. Ahrens** have joined **Montage Computer Corp.** as director of marketing and sales manager, western region, respectively. . . **Darmstedter Associates, Electro-Acoustic Marketing, Wilson Audio Sales, Bencsik Associates, RM Associates, Dobbs Stanford Corporation, YoreCo, Northshore Marketing** and **Radon Associates** have been appointed prod-

uct line sales representatives for Nashville's **US Audio Inc.** . . **Richard Evans** and **Jack Perricone** have been appointed to the faculty of the **Berklee College of Music**. . . **Jonathan Vesey Smith** has joined **Movielab Video, Inc.** as staff editor. . . **Mycomp Technologies Corporation** has announced that **Harvey Ray** has been named eastern sales representative for their microprocessor-based machine control components and signal distribution product lines. . . **Jay Iredell** has been named vice president and director of mobile services at **E.J. Stewart, Inc.** in suburban Philadelphia. . . At **Capron Lighting and Sound Inc.**, in Needham, MA, **Howard Resnick** has been named to the position of director of marketing and communications and **Bill Quevy** has been appointed as project manager. . . **Marvin H. Squire** has been appointed executive vice president/director of marketing at **Soundcraftsmen, Inc.**, in Santa Ana, CA. . . **EXR Corporation** of Brighton, MI, has appointed **Sye Mitchell**, of Woodland Hills, CA, to be their new sales representative in the Southern California territory. . .

Audio Intervisual Design, the L.A.-based designers and installers of custom systems for the video and film industries, recently staged a new product preview at Capitol Records' Hollywood recording studios.



M I X M A G A Z I N E S T A F F

PUBLISHER/EDITOR
David M. Schwartz

ASSOCIATE PUBLISHER/ADVERTISING DIRECTOR
Hillel Resner

PUBLISHER/GENERAL MANAGER
Penny Riker Jacob

MANAGING EDITOR
Blair Jackson
ASSISTANT EDITOR
George Petersen
ASSOCIATE EDITOR
Ken Pohlmann
MUSIC EDITOR
David Gans
EDITOR AT LARGE
Mr. Bonzai
FILM/VIDEO EDITOR
Lou CasaBianca
CONTRIBUTING EDITORS
Iain Blair Larry Oppenheimer
Bruce Pilato Elizabeth Rollins
Tony Thomas Neal Weinstock
EDITORIAL ASSISTANTS
Linda Johnson Karen Dunn

ASST. ADVERTISING DIRECTOR/
EASTERN AD MANAGER
Jeffrey Turner
ADVERTISING REPRESENTATIVES:
SOUTHERN CALIFORNIA/
SOUTHWEST
Cecilia Hernandez
NORTHWEST/NORTH CENTRAL
Horton Firmin
ADMINISTRATIVE ASSISTANTS
Jane Byer Susan Wiese
DIRECTORIES/CLASSIFIED
MANAGER
Lauri Newman
DIRECTORIES ASSISTANT
Athena Craig
TRAFFIC MANAGER
Neil McKamey

ART DIRECTOR
Tim Gleason
ASSISTANT ART DIRECTOR
Dave Marrs
DESIGN & PRODUCTION
Patsy Messerer
Anita Wong-Dun
TYPESETTING
Linda Dierking Lynn McCormick
Connie Wiggins
PRODUCTION MANAGER
Anne Letsch
PRODUCTION ASSISTANT
Kathy Badertscher
CIRCULATION MANAGER
Nick Clements
CIRCULATION ASSISTANT
Allison Hershey

ACCOUNTING DEPARTMENT
CONTROLLER/BUSINESS MANAGER
Mark Gunther
ASSISTANT CONTROLLER
Linda Simpson
CREDIT/ACCOUNTS PAYABLE
Cathy Boyum
CREDIT MANAGER
JoAnne Neft
BOOK DIVISION
GENERAL MANAGER
Craig Wingate
CUSTOMER SERVICE
Caryl Sherman
OFFICE MANAGER
Rachel McBeth
RECEPTIONIST
Lisa Jensen

National Editorial, Advertising and Business Offices: 2608 Ninth Street, Berkeley, CA 94710, Telephone: (415) 843-7901
Southern California Advertising Office: 22458 Ventura Blvd., Suite E, Woodland Hills, CA 91364, Telephone: (818) 999-4649



Listen Closely.

 **Dolby**
A Quiet Commitment.

SESSIONS

NORTHWEST

Mushroom Studios in Vancouver has announced the availability of a wide spectrum of services based on the E-mu Systems Emulator II and Apple Macintosh. This complete computer music system, owned and operated by Bradley Doyle, is now located at Mushroom. . . **Starlight Studio** in Richmond, CA had **Ronnie Montrose** producing tracks with technorockers **Teluride**; **Ken Kessie** mixing **Modern Rocketry** for Megatone Records; and **Maureen Droney** behind the board for guitarist/songwriter **Mico Weaver**. . . **Mickey Hart** of the Grateful Dead has been working at **Russian Hill Recording** in San Francisco as a sound designer creating sound effects for CBS's **Twilight Zone** series. **Sam Lehmer** has been engineering. Also, **Rob Wasserman** (formerly bassist with the David Grisman Quartet) has been working on an LP project and has cut tracks recently with Aaron Neville, Rickie Lee Jones, Stephane Grapelli, Dan Hicks, Cheryl Bentyne (Manhattan Transfer), with more to come. The concept is solo bass/solo?—meaning voice or another instrument. . . **Danny Deardorff** finished up his new LP of original material with **Bruce Calder** at **Steve Lawson Productions** in Seattle. . . **John Schreiner**, former keyboard player for Donna Summer, has produced two projects at the **Music Source** in Seattle: one for Casey Treat's **Christian Faith Center**, and another for **Cherylin Mitchell**, vocalist. **Dave Raynor** and **Rick Fisher** were at the board. . . **Powerhouse Recording Studio** in Las Vegas has impressed Los Angeles producer **Lou Medel** enough to choose Powerhouse for two of his new projects: **Darkus Speed**, a single female artist aimed at the Top 40 market; and a mid-western group, **Panic**, geared more to the rock side. . . Working at **Studio C** in San Francisco recently were **Chevron USA**, with two films for posting and final mix, **Mill Valley Animation** with a slew of **Seabert the Seal** shows, **Copeland-Griggs' Going International** and more. . .

NORTH CENTRAL

At **United Sound Systems Recording** in Detroit, gospel recording artists **The Winans** completed their latest album for QWest Records in Studio B with **Win Kutz** and **Tony Ray** engineering. . . The group **Slave** recorded their latest single, "Jazzy Lady" b/w "Don't Waste My Time," at **Refrase Recording Studio** in Dayton. Engineering was by **Gary King** and **Mark A. Frazee**. . . At **Studio A**, Dearborn Heights, MI, **Adrian Silas** cut rhythm tracks on a self-produced jazz project; and former keyboardist for Dreamboy, **Jeff Bass**, worked on tracks for

an upcoming album with **Eric Morgeson** engineering. . . Many of the jazz greats in the Midwest were in **Jewel Recording Studios** in Cincinnati working on a Christmas album for radio station WVXU. **Cal Collins**, **Lou Lausche**, **Dee Felice**, **Jimmy McGary**, **Cliff Lash**, **Rick Bankemper**, and **Frank Vincent** were joined by vocalists **Ruby Wright**, **Mary Ellen Tanner**, **Ron Stewart**, **Marian Spellman**, **Larry Kinley** and **Rob Reider**. The sessions were engineered by **Jr. Bennett** and **Rusty York**. Producer was **Larry Ashcraft**. . . **Chuck Mangione** worked on his new album at **Sound Summit Studio** in Lake Geneva, WI. **Butch Stewart** produced with **John Patterson** engineering and **Jim Bartz** assisting. . . At **Sparrow Sound Design** in Chicago, singer/songwriter/guitarist **Ken Krause** ("Colorado Kenny") completed ten original songs for his debut album on F.R.O.G.G. records. The album was produced by bassist **John Magnan**. . .

SOUTHEAST

A compilation album commemorating the **1985 Atlanta Jazz Festival** has been in the works at **Crescendo Recorders** in that city with **Gary Ham** doing the remix using the new Mitsubishi Digital mastering system. Entitled **Jazz Flavors at the Atlanta Jazz Festival**, the project is being produced by **Mark Johnson** for the Phoenix Arts Society and Fat Cat Records. The album features performances by the Tom Grose Band, Dave Ferguson, Elgin Wells, The B Team, Carol Veto, The Ojeda Penn Experience, Ricky Keller, and Glen Wisenbaker. . . At the **Soundshop** in Nashville, producer **Bud Logan** and engineer **Rick McCollister** have been cutting tracks on **John Conlee** for CBS Records. . . **Grand Central Studio** in Nashville played host to **Poco's** new cuts last month with **John Mills** engineering; **Mickey Basil** was back in the studio with producers **Tom Woodard** and **Pat Patrick** for his new jazz project as well. **Kent Madison** was at the helm. . . **Anita Pointer** and **Paul Worley** have been in Nashville's **OmniSound** doing overdubs on a project they are producing on **John Ritter** for RCA Records. **Ed Seay** was the engineer. **Bill Whittington** was the back-up engineer. . . At **J.B.S. Studio** in Atlanta, **Rod Smarr** from Dr. Hook produced locals **Randall & C.C.** with **Brad Jones** engineering. Also, **Kodak Harrison & Contraband** cut tracks for their second album on an independent label with **Donal Jones** producing and engineering. . . Activity at **Polymusic Studios Inc.**, Birmingham, AL, included **Michael Panepento** and **Davy Moire** mixing and mastering final tracks on **Jan Hunter**, **Assault**, **Daughter Judy**, **Scotti**, and **Randy Hunter**, for Pandem

Records. All tracks were mastered with **Randy Kling** at DiscMastering in Nashville, Panepento and Moire producing, **Andy Bray** assisting. . . At **Bias Recording Company**, Washington, D.C., Flying Fish recording artists **Sweet Honey in the Rock** recorded two albums, **Feel Somethin' Drawin' Me On** and **The Other Side**, which were produced by **Bernice Johnson-Reagon** and engineered by **Rico Petruccielli**. . . **Let's Active** completed its second album for I.R.S. Records, yet untitled, at band leader **Mitch Easter's Drive In Studio** in Winston-Salem, NC. Co-producers were Easter and **Don Dixon**, who shared the engineering tasks as well. The LP is slated to hit the racks in February, 1986. . .

SOUTHERN CAL.

The Truck Mobile Recording Facility of Glendale, CA, completed work for **The Dick Cavett Show** on the USA Network. The Truck provided mobile audio facilities and related equipment at various Southern California locations for the New York-based show. . . **Joe Sample** was in at **Craig Harris Music** in Studio City using the newly upgraded Synclavier to produce tracks for his **Crusaders** album project. Also, Craig Harris processed sounds for **Amazing Stories** and **The Twilight Zone**. . . **Merrell Fankhauser**, the cosmic rocker from Maui, Hawaii, has landed back in Southern California to begin work on his forthcoming LP. Joining him in the **D-Town/Platinum Sound Recording Studios** will be guitarist **John Cipollina**, **Peter Noone** (former lead singer of Herman's Hermits), and songwriter/singer **Billy Foster**, of Rod Stewart fame. . . Producer **Jimmie Haskell** and engineer **Lee R. Miller** were at **Conway Recorders** and **Can-Am Recorders** (both in L.A.) mixing for an album and live cable television concert special called, **Ricky Nelson and Fats Domino Live at the Universal Amphitheatre**. The concert was recently recorded by the Green-Crowe 48-track audio and seven camera video remote truck at Universal's 6000 seat facility. **Don Warsham** was behind the board. The concert was the first videotaped appearance by Fats Domino in many years. . . Producer **Tom Alexander** was in **Skip Saylor Recording** in LA recording an LP on artist **Cindy Perez** for Castle Records. **Skip Saylor** was behind the board with **Tom McCauley** assisting. . . Enigma Records metal artist **Thor** and his guitarist **Steve Price** have begun production on a new LP by popular New York metal outfit **Battalion**. They are producing the band at **Kingdom Studio** in Long Island, NY, where artists such as Blue Oyster Cult, Aldo Nova, and Joan Jett have recently recorded. . . At **Group IV Recording** in Holly-

NOW ALL THE WORLD'S A SOUND STAGE.

No matter what you're recording in the field, from Shakespeare-in-the-Park to "Dancing in the Dark," you'll find a Sony portable mixer that brings the creative control and flawless sonic performance of the studio to wherever you happen to be.



Studio quality is no longer confined to the studio.

12 FOR THE ROAD.

The big difference between the Sony MX-P61 and other studio-quality 12-channel mixers is that the Sony can be tucked neatly into a small case and carried to any location—thanks to its switching power supply, transformerless design and, of course, the fact that it's made by the company that's best at making big things small.

Its myriad professional features include transformerless, electronically-balanced inputs and outputs, complete equali-

zation for comprehensive signal control and modular construction for reliability and easy maintenance. Along with the phenomenal sonic performance with which the name "Sony" has been synonymous for decades.

THE 4-CHANNEL MIXER FOR EVERY CORNER OF THE GLOBE.

The incredibly small and light MX-P42 lessens not only your burden, but the complexities of field recording as well.

That's because each input incorporates a fast-acting compressor/expander with gain make-up control. So input levels can be preset separately, then maintained automatically during recording.

HIGH QUALITY FOR LOW BUDGETS.

The family resemblance between the 8-channel MX-P21 and

Sony's more expensive portable mixers is readily apparent:

The MX-P21 is portable, durable, and has an incredible array of features for its size—including phono EQ, fader-start and cascade interface.



The Sony MX-P42 weighs in at a scant 8 lbs., 10 oz.

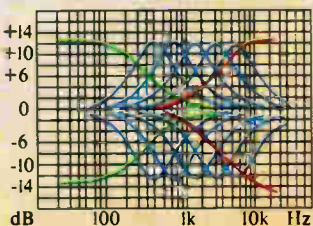
All of which makes the choice between Sony and any other portable mixer a simple one.

Just decide whether you want all your location recordings to be as good as studio recordings.

Or not to be.

For a demonstration or more information, call Sony in the North at (201) 368-5185; in the South (615) 883-8140; Central (312) 773-6000; West (213) 639-5370. Or write Sony Professional Audio Products, Sony Dr., Park Ridge, New Jersey 07656.

SONY
Professional Audio



EQ characteristics of the MX-P61.

©1985 Sony Corp. of America. Sony is a registered trademark of Sony Corp. Sony Communications Products Company, Sony Drive, Park Ridge, New Jersey 07656.



wood, composer **Quincy Jones** and music supervisor **Tom Bahler** recorded the underscore for the film *The Color Purple*, with engineer **Dennis Sands**, assisted by **Andy D'Adario** for Color Purple/Moonsong Productions . . . Island Records artist **Danny Wilde** completed overdubs for his new album with producer/engineer **Peter Coleman**, with assistance from **Robert J. Corti** at **MCA Whitney Studio** in Glendale. . . MCA acts **Ready For The World** and **New Edition** were in overdubbing and mixing new tracks with **Louil Silas, Jr.** producing and **Taavi Mote** engineering. **Stephanie Mills**, also on MCA worked on an album there with **Ron Kersey** producing and **Hill Swimmer** and **Taavi Mote** engineering. Assisting on all three projects were **Toni Greene, Fred Howard** and **Sabrina Buchanek**. . . At **Music Box Recording Studio** in Hollywood, saxophonist **Ernie Fields** and friends recorded "We're With You South Africa," with **Steve Williams** engineering. . . Former Wall of Voodoo lead singer **Stan Ridgway** completed his first solo album for I.R.S. Records at **The Lighthouse** in North Hollywood and in his own **J.C. Studios** in Hollywood. Producing and engineering were Ridgway himself, **Hugh Jones, Lewis Vandenberg** and **Joe Chicarelli**. Ridgway has been working on the LP for three years. It is scheduled for a March, 1986, release. . . At **Commercial Sound Studios** in Honolulu, artist **Jake Hoopai** and producer/engineer **Larry McCracken** completed tracks on the title song of Hoopai's upcoming album project, **Hawaiian Moonlight**. . . Activity at **Master Control** in Burbank included **Latoya Jackson's** upcoming album with producers **Gary Geotzman** and **Mike Piccirillo** for Private Eye Records. **Mark Wolfson** was at the board with assistants **Ron Corbett** and **Dan Nebenzal**. . .

NORTHEAST

Chuck Hammer/Guitarchitecture have been scoring and mixing at **Sync Sound**, NYC, a film called *Energy Odyssey* for the New Jersey Dept. of Energy. At the SSL console was **Ken Hahn**. . . Producer **Rick Derringer** was in NYC's **Quadrasonic Sound Systems** working on several of the cuts that he is producing for the *Wrestling Album* on Epic Records. The album consists of various wrestlers singing songs, including Junk Yard Dog singing "Grab Them Cakes" and Hillbilly Jim singing "Don't Go Messin' with a Country Boy," etc. Engineer was **Tom Edmonds**, assisted by **Tom Gonzalez**. . . **Lothar Segler** produced and engineered the debut album of *Movieland* for RCA Records. Co-producing with Lothar were **Hank Medress** and **Richard Lewis**. **Carol Martino** assisted. . . At **39th Street Music**, **Patty LaBelle** laid down tracks with **Ashford & Simpson** producing, **Tim Cox** engineering, and **John Paul Cavanaugh** assisting. **Ashford & Simpson** were also in doing demos with Cox engineering. . . At **Giant Sound** in NYC, **Steve Winwood** was in recording with **Russ Titelman** producing. Also, **Chemistry** did some recording with **Stephan Galfas** producing. . . At

Inner Ear Recording in NYC, composer **Wendy Blackstone** finished scoring a new film by director Nick Tanis called *In The Dark*. Production was handled by **Tanis & Co.** Engineers on the date were **Steve Vavagiakis** and **Matt Schotenfeld**. . . **Adams Morgan Day**, an annual community event in Washington D.C. that attracts hundreds of thousands of people each year, now has its own theme song. The song was written by **Vicky Troy** and **Charles Ragusa** and sung by **Vicky Troy**. **Lion & Fox Recording**, a 24-track recording studio in D.C., was chosen to record and mix the song. . . At **The Sound Cottage**, Port Jefferson Station, NY, songwriter **Bob Barta** worked on a composition called "The Real Thing," recorded with the Yamaha CX5M Music Computer MIDI-synched with the Roland TR707 Digital Drum Computer . . . **Long View Farm** in North Brookfield, MA, has seen WAAF's **Bob Rivers** of "Just a Big Ego" fame producing an ad for Mt. Snow ski area in Vermont, utilizing Long View's MIDI set-up. **Brian Silva** was on keyboards and **Cliff Goodwin** was guitarist and production assistant. . . **Important Records'** artists, the **Dancing Hoods**, mixed down their LP, *12 Jealous Roses*, at **Tiki Studios** in Glen Cove, NY. Engineering was by **Mark Gaide**. . . **Mingus Dynasty** cut tracks with producer **Susan Mingus** at **Reel Platinum Studios** in Lodi, NJ. Also, **Steve Wyche** was in doing his latest 12-inch rap record. . . At **Greene Street Recording**, NYC, **Phil Jones** and **Kurtis Blow** produced a tribute to Martin Luther King featuring artists such as **The Fat Boys, Run/DMC, New Edition, Stacy Lattisaw, Teena Marie, Stephanie Mills** and **Eddie Murphy**. **Dave Harrington** did the engineering, with **Dave Stillman** assisting. . . **The Nobels** were in at **Sound Heights** in Brooklyn recording two tunes penned by **Wendell Nobel**. Mixing has been completed by producers **Hector Quinones** and **Vince Traina**. Traina engineered, assisted by **Shuan James** and **Frank Cardello**. . .

SOUTHWEST

Artist **Lynn Daye** recorded a mini-album, *My Creator*, at **Precision Audio** in Dallas, done entirely with Precision Audio's MIDI system. . . **Jodie Lyons** and **Lanelle Stevenson** were in **Dallas Sound Lab's** studio A cutting audio tracks to go with their new book *Principles of Pop Singing*, with DSL's **Rusty Smith** at the console and Lyons arranging, conducting, and producing. . . **Joy White**, known for her jingle work in Nashville, recorded back-up music for an upcoming *Star Search* presentation at **Planet Dallas Studios**. Also, songwriter and performer **Dave Guinn** re-recorded album cuts previously recorded in Nashville. . . **Fletcher Wiley** and **Dennis Worley** of Star Song were at **Rivendell Recorders** in Pasadena, TX, mixing a Steve and Annie Chapman choral musical about the family. **Bob Bennett** helped to put the finishing touches on the project by adding some vocal overdubs. . . **Sumet-Bernet Sound Studios'** giant "Studio A" hosted the 200 voice *Together* project (a gathering of world-famous Gospel artists) produced by Grammy Award

winner **Lanny Wolfe**. The project, engineered by **David Booth, Bob Singleton**, and **Tom Adler** was designed to raise money for African relief. . . **Midcom, Inc.** in Dallas recently recorded the world premiere of Benjamin Lee's Symphony No. 4 entitled, "Memorial Candles." The project utilized Midcom's mobile recording facility and was engineered by Midcom's **Mike Simpson** with assistance by **Jeff Jones**. Producer on the project was **Ara Guzelimian**. . . **Studio Southwest** in Dallas was used by producer **Jake Pittman** to complete albums for Christian recording artists **Marsha Andrews** and **Wanda Landrum**. Landrum, of Dallas, was also the subject of a recent 700 Club TV segment, shot at Studio Southwest. . .

STUDIO NEWS

Soundwave Recording Studios in NYC have acquired the new Studer A820 digital controlled analog master recorder with the latest mastering standards, 1/4-inch and 1/2-inch tape at 30ips. . . **Glen Glenn Sound** of LA, one of the largest film and television post-production houses in the country, has just taken delivery on their 14th Otari MTR-90 multi-channel recorder. . . Dallas-based **Goodnight Audio** upgraded its control room—replacing an MCI 528 with a Neve 8128 recording console, featuring Necam 96 automation. . . **Mokan Productions Ltd.**, Kansas City's newest state-of-the-art audio recording facility, has completed expansion. The latest addition to complement the existing \$500,000 facility is designed primarily for broadcast and industrial commercial production. . . **SynHarmonic Productions**, Orlando, FL, a 16-track synthesizer-oriented studio, recently completed construction on a 10' x 12' vocal booth which will complement the live-sounding Studio A. Recent additions to the equipment list include a Lexicon PCM60, 360 Systems MIDI-Bass, Ludwig drum set, and a second set of JBL monitors for re-mixing synths in the live room. . . **Master Control** in Burbank, CA, has added a pair of Pultec MEQ-5 mid-range EQs, a pair of EQH-2 program EQs, and a Hi/Lo filter to their existing collection of Pultecs. . . **Image Recording Studios** in Hollywood, CA, have opened their new "Studio B." The new room is a fully equipped 24-track studio featuring a Trident Series 80-B console and an MCI 24-track machine. In addition, plenty of outboard and video gear is available. . . **Studio A** in Dearborn, MI, has moved into a 4,000 sq. ft. facility designed by **John M. Storyk Associates** of New York City. With a 700 sq. ft. control room, 800 sq. ft. studio, two isolation rooms, and three live chambers; it is the newest recording studio in the Detroit area. Wiring and installation of equipment was coordinated by **Pat Schneider Productions** of Jackson, MI. . . **OTR Studios** in Belmont, CA, has expanded to 24 tracks with the addition of an Otari MTR 90-II with Autolocator, purchased from Sound Genesis of San Francisco. Other recent purchases include the Lexicon 224XL digital reverb and latest software update, AMS Digital Reverb, and DX7, TX7 synthesizers.



THE LEGEND CONTINUES

When you're in the studio, tape that's good enough is not enough. Which is why for ten years Ampex has continued pushing the potential of recorded sound. Through a decade of increased fidelity and reliability, Grand Master 456 remains an audio tape obsessed with performance. Which is why more top albums are recorded on Ampex tape than any other tape in the world. For Grand Master 456, the beat goes on.

AMPEX

Ampex Corporation, Magnetic Tape Division, 401 Broadway, Redwood City, CA 94063, 415-361-3939 Ampex Corporation • One of The Signal Companies

AND THE BEAT GOES ON

AUDIO APPLICATIONS

by Ken C. Pohlmann

People go to an Audio Engineering Society Convention for many reasons, some of which I could discuss in these pages, and others I'd rather not. But after the exhibits have been dismantled and sent on their way to the next show, after the new control room plans drawn on a cocktail napkin have been converted to vellum, after all those completely unfamiliar business cards have been discarded, at least one piece of tangible history remains—the technical papers. And while even the presentations themselves might have passed into

the nether world of blurry slides, the preprints remain as documentation of the work, to surface later in the *Journal*, or at least stay on paper as footprints in the evolution of audio.

As a former papers chairman, I can attest to the challenges of assembling a dozen or so enthusiastic sessions chairmen, and uncovering 70 or so well-intentioned papers. Of course, those tribulations pale in comparison to the task of securing the preprints themselves; when you're finished, the collected 50 have become incredibly precious indeed. Judging from the quality of this year's preprints, I can state that papers

the effect of auditory masking, the noise and distortion components near the fundamental are ignored. Finally, typical human hearing and environmental masking effects are considered to establish the effective hearing acuity; the noise and distortion spectrum of an audibly perfect system would lie below this threshold. This objective test is subjectively quantified by artificially reducing output noise and distortion to determine the threshold of audibility. When applied to an adaptive delta modulation system, and two PCM systems, the tests were in agreement. Four conclusions were drawn: degradation could be pinpointed in a PCM system, pre- and post-emphasis is effective in reducing noise in a digitally companded system, dither is useful, particularly if it is removed from the output signal, and linearity at low levels is important for a conversion system.

"On the Signal Format for the Improved Professional Use 2-Channel Digital Audio Recorder" (preprint #2270) was authored by Yoshinobu Ishida, Ken Onishi, Kazuhiro Sugiyama, Tetsuya Yamaguchi, and Tohoru Tanaka of Mitsubishi Electric Company. Citing recent advances in error protection methods, LSI chips, magnetic tape and heads, tape-cut and electronic editing, etc., the authors have re-evaluated stationary head signal format requirements. The basic "PD" parameters include: 12 total tracks with eight digital audio tracks, two analog tracks, one time code track, and one auxiliary digital track, 1/4-inch tape width, 7.5 and 15 ips speed, RSC-IV error correction code, 2/4 modulation, 44.1/48 kHz sampling, and 16-bit linear quantization. The same block configuration is used for either tape speed; total frame length is 360 bits, with 16 synchronization bits, 8 bits for control, 320 bits for digital audio signal or C2 check code, and 16 bits for C2 check code. A 16-track on half-inch tape and 32-track on one-inch tape "PD" format was also introduced in a joint announcement by Mitsubishi, Otari, and AEG.

"Thin Film Head for Multi-Track Tape Recorders" (preprint #2287), authored by Shigeyoshi Imakoshi, Hideo Suyama, Tetsuo Sekiya, and Yoshikazu Tsuchiya of Sony Corporation, describes the characteristics of the read and write heads for a 48 channel digital audio recorder with half-inch tape. The write head is designed so that coils are wrapped five times in two spiral layers around the

THE 79TH A·E·S CONVENTION PAPERS

After the exhibits have been dismantled and all those completely unfamiliar business cards have been discarded, one piece of tangible history remains—the technical papers.

chairman Daniel Queen persevered mightily. The subject matter ranged from perception to polymer piezo film, the authors were both old and new to the Society, both domestic and foreign, from companies large and small. Since a comprehensive summary of all the preprints would require a year's worth of columns, I can only single out a few for honorable mention. Let's consider the cutting edge in digital audio technology, as exemplified by a selected few preprints from the 79th Convention.

"Assessing the Low Level Sound Quality of Digital Audio Systems" was the title of a paper presented by Louis Fielder of Dolby Laboratories (Preprint #2268). The problem of establishing a set of performance levels to guarantee audibly satisfactory sonics has still not been tackled by the digital audio community. The author proposes a worse-case technique of applying sinewave signals to digital audio systems, then using the critical band concept to divide the output signal to study the audibility of low level noise and distortion due to conversion nonlinearities. Low level sine-waves are used as input because harmonics would otherwise provide auditory masking of distortion. The output is analyzed in 24 bands; to account for



AT THE STARTING LINE YOU CAN'T TELL SEATTLE SLEW FROM MR. ED.

Until the horses bolt from the gate, you can't tell a champion from an also-ran.

Likewise, equalizers "line up" evenly when covering the same "flat" terrain. It isn't until you demand "peak" performance that you can measure what an equalizer is truly made of.

JBL/UREI's 5547 Graphic Equalizer and 5549 Room Equalizer are made of the most advanced electronics ever packaged in an equalizing system. Their proprietary hybrid circuits deliver unprecedented low noise. Discrete active filter circuits provide the highest dynamic range ever achieved under real world operating conditions.

More headroom and less

noise is also a function of the 5547 and 5549's unique, headroom circuit. A special LED display and two gain structure controls allow you new precision in optimizing headroom and signal-to-noise ratio.

The 5547 Graphic Equalizer is the ultimate tool for creative equalization, offering both "Boost" and "Cut," while the 5549 is the ideal corrective

"Cut Only" Room Equalizer.

While both equalizers are at home in the studio, each is built extra-rugged for reliable road-ability. And perhaps best of all, the 5547 and 5549's ultra-efficient hybrid technology gives you breakthrough performance at a breakthrough price.

Compare the JBL/UREI 5547 Graphic Equalizer and 5549 Room Equalizer to anything on any "track". Because when "peak" performance is paramount, the 5547 and 5549 simply leave other equalizers standing in the gate.



JBL Professional
8500 Balboa Boulevard
Northridge, CA 91329

JBL UREI
ELECTRONIC
PRODUCTS

Available in Canada through Gould Marketing

Circle #003 on Reader Service Card

pole piece with a thickness of 10 micrometers composed of Sendust-Sputtered film which has a saturate flux density of 12,000 Gauss and a permeability of 2,000. Pulse train recording is employed to minimize recording power, suppress crosstalk, and simplify circuitry. The write head is driven by a pulse signal instead of a rectangular wave; recording power is reduced proportionally to the duty ratio of the pulse train. Crosstalk is reduced by shifting the duty cycle of one track in relation to its neighbors. The read head is of MR type; the output of a MR is independent of tape speed thus it is more sensitive than a thin film head at slow tape speeds. A yoke type structure is used for greater reliability; the MR element is inside the head and is not exposed to the tape running surface or corrosive elements. With AC bias and magnetic feedback, the MR head may be used for high fidelity auxiliary analog tracks. The new head is fully applicable to the DASH format.

"Digital Audio Sampling Frequency Converter Employing New Digital Signal Processors" was the paper presented by Yasushi Katsumata and Osamu Hamada of Sony Corporation (Preprint #2272). The authors have developed a sampling frequency converter capable of transcoding any stereo digital audio signals between 30 kHz and 50 kHz,

with up to 24 bit words. Two new audio DSPs are used in a four stage signal processing architecture; they are used in the first oversampling stage, and in the remaining three stages of oversampling, FIR, and linear interpolation. The two DSPs are a processor chip with 28-bit ALU, microprogram sequencer, and peripheral interface, and a 16-bit x 32-bit multiplier chip. These chips are further described in preprint #2269 entitled "Digital Signal Processor LSIs Suitable for Digital Audio Equipment." Sampling frequency conversion using an arbitrary ratio is achieved by using a combination of interpolation and decimation. The magnitude of interpolation is much greater than in fixed ratio converters; a 2^7 times interpolator is designed with a multi-stage FIR filter. The first FIR stage doubles the sampling rate, as does the second, the third FIR stage performs interpolation and decimation; the sampling rate is effectively increased to 32 times the original rate, then reduced to the output rate; in practice only two sample points immediately beside the output sample point are computed. The fourth stage uses linear interpolation to compute the output sample from the two previous samples. The prototype uses three A4-size boards, and has AES/EBU format I/O.

"One-Chip Digital Signal Processing

Large-Scale Integrated Circuit for the Compact Disc Player" (preprint #2288) was authored by a team of Matsushita engineers. A single LSI chip for CD players has been developed with the following functions: EFM demodulation, synchronization of EFM and signal detection, subcode demodulation, CRC decoding, CIRC decoding, error concealment with interpolation, and spindle motor servo control. The chip also features a new (triple) error correction algorithm and new Galois field architecture to achieve an uncorrectable probability of 10^{-19} . The CMOS LSI contains approximately 40,000 transistor gates in an 84 pin flat package. The new chip replaces previous designs using three digital chips, and incorporates the motor servo control as previously accomplished by an analog chip. The internal state of the LSI is controllable by an external system microcomputer through an on-board interface. The improved degree of integration increases function, performance, and reduces power consumption and cost.

"Over-Sampling Filter for a Digital Audio Use" (preprint #2289) was authored by a team of Matsushita engineers. This paper describes another LSI chip designed for CD and other digital audio applications. This oversampling filter CMOS chip is a 95 tap FIR type digital filter with passband ripple of ± 0.01 dB and stopband attenuation of -85 dB. It has the additional ability to attenuate digital audio signals with a multiplier. A two-times oversampling algorithm is utilized. Computer simulation showed that a coefficient length of 17 bits would be optimal. One output sample is obtained after 24 multiplications. The number of transistors on the chip is approximately 29,000; multiplier, ROM, RAM and PLA are all included on the 42 pin flat package chip.

"Four-Channel Digital Mixer/Equalizer for Mastering" (preprint #2292) was authored by Toshinori Mori, Takashi Matsushige, Yasuo Sato, and Yukimitsu Sakurai of Victor Company of Japan (JVC). This paper describes the development of a digital audio mixer/equalizer with four input and two output channels, designed primarily for digital audio mastering applications. The mixer can be connected to a compressor/limiter, and the AES/EBU interface. DSPs using LSI technology are used for reliability and cost effectiveness. The PCM signal first passes through a 0 to 20 dB attenuator to prevent overflow, passes through the pre-emphasis/de-emphasis equalizer with a time constant of 50 microseconds/15 microseconds, then passes to a 4-band equalizer. Each equalizer consists of seven DSPs (PD77P20) to maintain 16-bit accuracy, a 32 bit PCM signal is transmitted serially between each DSP. The attenuator/mixer module

THE SYSTEM FROM AIC



THE SPECIALISTS IN

Programming
Interfacing
Consulting
MIDI Systems Design

FEATURING

E-mu Systems
PPG/DigiDesign
Macintosh
Southworth Music Systems
Garfield Electronics

AIC
PRO AUDIO

1717 SOLANO WAY #31
CONCORD, CA 94520
(415) 686-6493

Circle #004 on Reader Service Card

Some People Actually Enjoy Sitting at Their Desk for Twelve Hours a Day.



Of course, their desk is an SL 4000 E Series — a classic example of responsive technology and engineering know-how. Mixers tell us it allows them to perform their craft with extraordinary freedom and precision. Producers say it serves their work in ways no other console can.

There is something about this console that goes beyond the clarity of sound, the agility of its software, the scope of its possibilities. Something that can't be shown in pictures, diagrams or words.

When you sit behind an SSL, there is recognition. It's more than knowing that this is the best. It's a discovery that someone actually understands the procedures and the pressures of your job. And that they've developed innumerable ways to make it easier, faster and better.

We'll be happy to send you our 40 page brochure on the SL 4000 E, or to arrange an audition. But a word of warning. Once you sit down at *this* desk, you may want to stay longer than you had planned.

Solid State Logic

Oxford • New York • Los Angeles • Hong Kong

Oxford, England OX7 2PQ • (099 389) 8282
200 West 57th Street • New York, New York 10019 • (212) 315-1111
6255 Sunset Boulevard • Los Angeles, California 90028 • (213) 463-4444
22 Austin Avenue, Tsim Sha Tsui • Kowloon, Hong Kong • (03) 721-2162

uses a TMS32010 DSP; the input/output module provides for parallel digital outputs or analog cue sends to peripherals. The mixer/equalizer can be used for digital tape copying, editing, CD cutting, and digital mixing.

"Digital Tape Transfer Console" (preprint #2276) was authored by Paul Lidbetter of Neve Electronic Laboratories; it describes a two channel transfer console for use in CD mastering. This console is specifically designed with two serial input and two serial output ports interfaced to the Sony 1610, pre-emphasis and de-emphasis filters, 4-band semi-parametric equalizers, second order high and low pass filters, dynamic range control including limiter, compressor, expander, and noise gate, and level con-

trol. The console also features switchable sampling rate and snapshot memory. Each module (equalization, filters, level, etc.) contains a single 8048 microcontroller communicating on a 22-bit parallel bus. The system controller is based on the NEC BP-0186 single board computer. Three such DTC consoles are under construction for Sterling Sound, New York, Masterdisk, New York, and Disc Mastering, Nashville.

"A Technical View of a Totally Digital Audio Mixing Console" (preprint #2277) was also authored by Paul Lidbetter; it provides technical details of some of the 25,000 integrated circuits which comprise the already-famous 48 channel Neve DSP console. A sampling frequency of 48 kHz, and 16-bit quantiza-

tion is used; the stop band is set at 20 kHz. Because of an operation rate of 60 MHz, each audio processor can perform two filters, equalizers, and dynamic range controllers in each sample period of 20.83 microseconds; the 4-band equalizer alone executes 34 software instructions for every sample. Mixing might require 128 multiply accumulates every sample period. The duplex fiber optic cable link operates at 24.576 MHz (NRZ) with complete error detection, correction, and frame synchronization. Four 16-bit microcomputers are used in the main processing rack, in addition to approximately 100 single chip microprocessors in the console and fader modules. All processors share 512Kbyte of data base memory, and a further 64K-byte of firmware. All programs are written in PLM86; approximately 350K-bytes of code presently reside in the console main processors alone.

"Development of an Erasable Magneto-Optical Digital Audio Recorder" (preprint #2296) was authored by A. Kurahashi, K. Hasegawa, Y. Mori, T. Kogure, and M. Fukai of Matsushita Electric; it describes an erasable magnetic-optical disc (MOD) compatible with the Compact Disc, using the Kerr Effect to control the polarization angle of laser light beams. Like magnetic recording, magnetic-optical recording relies on inversion of the magnetized direction of perpendicular recording media under the influence of a magnetic field to digitally record the data. However, with MOD the required power of magnetization is about one-tenth that of ordinary magnetic recording; in addition high density is possible because only a spot of magnetic material heated to its Curie temperature by a focused laser beam has its magnetic orientation altered by the magnetic field. The recorded signal is also read with a laser beam; its angle of polarization detects the orientation of the recorded spot and results in a difference in light intensity. The disc uses an amorphous thin film magnetic material; it is pre-grooved with one pre-recorded address sector block on each track. The information signal can be recorded over the address sector by superposition. The medium could support over 10^8 successive erasures and recordings. The prototype has a recording time of 60 minutes, however, future plans call for a lowered linear velocity, and a recording time of 75 minutes. Because of a common optical block, the CD and MOD would have read compatibility.

Preprints may be obtained from the Audio Engineering Society, 60 East 42nd Street, New York, NY 10165. Cost is \$2.50 each for members, and \$3.00 each for non-members; a complete set of 50 preprints from the 79th Convention may be ordered for \$50.00. ■

FIRST TIME. ANYTIME.

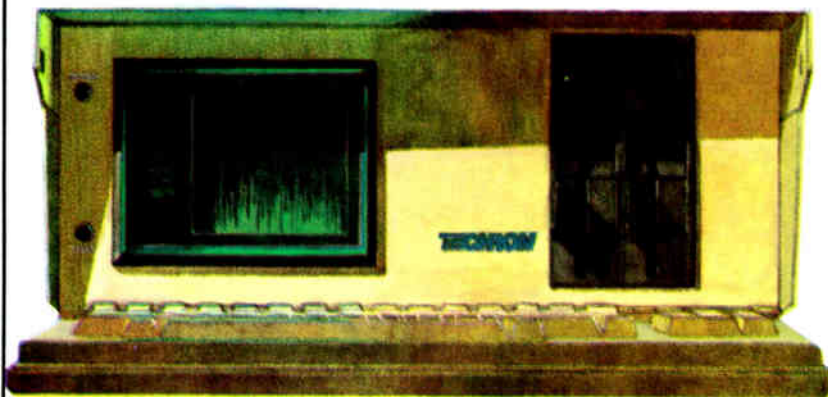
TEF[®] System 12 means pinpoint accuracy in acoustic analysis. Even in the presence of other noise.

TEF System 12 determines areas of reflection or origin within parts of an inch. With this increased accuracy and the ability to document your work, you'll be able to reduce costly call-backs by as much as 75%.

TEF System 12 also utilizes Time Delay Spectrometry (TDS), a test technique that ignores ambient interference. That means you'll spend less time waiting for a quiet measurement situation and more time scheduling new jobs.

TEF System 12 is actually a portable measurement system with a complete range of displays that allow analysis of phase, frequency and time characteristics independently or in combination with each other. The TEF System 12 also has measurement storage capabilities. You get all the tools you need to present your clients with an accurate, proof-positive analysis. And, you can get the TEF System 12 starting at less than \$10,000.

To find out more about the first time, anytime acoustic analyzer, call or write.



TECHRON[®]

1718 W. Mishawaka Road, Elkhart, Indiana 46517 • (219) 294-8300

Circle #005 on Reader Service Card

*Now, a Lexicon for those
who always wanted a Lexicon.*



Lexicon digital reverb sound. Big. Clean. Hot. The sound used by the top artists. Found in the top studios. But, frankly, unaffordable to many who wanted it.

Until now.

Because now, with the new Lexicon PCM 60 digital reverb processor and room simulator, we've brought Lexicon sound to even more artists and studios. At a very affordable price.

And quality? We made no compromises. Every sound is a Lexicon sound. In fact, we put 128 of the most imaginative, most useful Lexicon plate and room sounds into the PCM 60. Despite such flexibility, we made it exceptionally easy to operate, with simple pushbutton controls. And by custom designing our own digital chips, we achieved high performance for the PCM 60, while keeping its price low.

When you audition the PCM 60 at your Lexicon dealer, you'll hear for yourself its superb Lexicon sound. The exact same sound you hear on your favorite recordings. And now, a sound that is yours.

Your dealer is waiting to demonstrate the PCM 60 just for you. And a descriptive brochure is yours for the asking. Lexicon Inc., 60 Turner Street, Waltham, MA 02154, USA. Telephone: (617) 891-6790. Telex: 923468. Lexicon International, Althardstrasse 238, 8105 Regensdorf, Switzerland. Telex: 59222.

Lexicon sound. Affordable at last.

lexicon

SPECIAL OFFER
See Your Dealer for Details

In 1968, an obscure documentary sound recordist by the name of Chris Newman was changing planes at the Los Angeles airport returning from a shoot in India, when he was paged over the PA system. The operator instructed him to call Haskell Wexler. Recalls Newman, "I called expecting this to be some kind of fantasy come true. Wexler said, 'I heard a lot of things about you. I'm doing a movie in Chicago; it's called *Concrete Jungle*. Are you interested?' As he was saying, 'Are you interested?', I was overlapping him and saying, 'Yes, I'm interested.' I would have done it for nothing. It was a feature film. It was Haskell Wexler, who was a hero to me."

“A CHORUS LINE” COMES TO THE SCREEN

An Interview with Sound Designer Chris Newman



Director Richard Attenborough presides over his actors at the Hellinger Theatre in New York.

by Nicholas Pasquariello

The picture, later retitled, *Medium Cool*, was Newman's first theatrical feature job, and proved to be one of the more successful experiments in the newly-invented genre of "docu-dramas." *Medium Cool* indeed marks the point at which Newman made an enormously successful transition from documentary sound recordist to theatrical feature film recordist. In 16 years, he has supervised the location and studio sound recording of 28 feature films under directors the caliber of Coppola, Forman (three pictures), Friedkin (two pictures), Ashby, Passer, Pakula (three

pictures), and Attenborough. His peers have publicly acknowledged his achievements as an audio craftsman by awarding him two Academy Awards for Best Sound (for *The Exorcist* and *Amadeus*).

In the late 1950s, Newman used recording merely as a means to support himself while making short films. (By his own admission, he is largely self-taught in his profession.) By the early '60s, he found himself so successful at recording work that he abandoned filmmaking entirely to devote himself to audio work. There followed television and documentary recording jobs such as *Brimstone: the Amish Horse* (for Disney) and an independently produced documentary on Ravi Shankar, filmed in India. When Newman returned from making this film, he met Wexler.

This interview covers the making of the film, *A Chorus Line*, directed by Richard Attenborough (best known for the film *Ghandi*). Largely because of cost (and somewhat unconventionally), *A Chorus Line* was shot in a theater—the Mark Hellinger in midtown Manhattan. As a result of this fact alone, Newman was faced with many interesting (often unique) sound recording situations.

Mix: Would you describe some of the problems you had to solve because you were shooting in a theater instead of on a soundstage?

Newman: Mostly problems associated with background noise. The stage was such that there were skylights up above, which were almost impossible to seal up; and noise comes in any case. There were many shots in the script that called for the street doors on the side of the stage to be open.

FROM HAIRPIN TURNS TO STRAIGHTAWAYS, THE SPEED OF SOUND HAS NEVER BEEN SO SMOOTH.



For years, sloppy tape transportation and handling have made the audio engineer's day much harder than it had to be.

This tormenting state has come to an end with the introduction of Sony's APR-5000 2-track analog recorder, available in a center-track time code version.

The APR-5000's precise handling and numerous advanced features make the audio engineer's day run much smoother. For example, the APR-5000's 16-bit microprocessor manages audio alignment with a precision that's humanly impossible. And the additional 8-bit microprocessor opens the way for extremely sophisticated serial communications. In tandem, they reach a truly unique level of intelligence.

Not only does the APR-5000 do its job well; it does it consistently. The die-cast deck plate and Sony's long-standing commitment to quality control maintain that the APR-5000 will hardly need time off.

All of which results in a consistent sonic performance that'll stand even the most critical audio professionals on their ears.

For a demonstration of the recorder that transports analog audio to a new fidelity high, contact your nearest Sony office:

Eastern Region (201) 368-5185;
Southern Region (615) 883-8140;
Central Region (312) 773-6000;
Western Region (213) 639-5370;
Headquarters (201) 930-6145.

SONY
Professional Audio



© 1985 Sony Corp. of America. Sony is a registered trademark of Sony Corp.

Circle #007 on Reader Service Card

World Radio History

Fortunately the cameraman only required a light effect out there. And [director, Richard] Attenborough never really saw people making elaborate entrances from the street. So they built a little house out onto the sidewalk—they got permission from New York City

situation where there aren't jarring changes of background from cut to cut and scene to scene. And the easiest way to do that is not to have any background noise to begin with. We could have elected to wire people with radio mikes to cut down the background sub-

which is big and cumbersome, and always in the way, but will permit you to make a big reach, a 16-foot reach. I had two very good boom men: Vito Ilardi and Arthur Bloom, who are both first boom men. I also had a terrific playback operator by the name of Neil Fallon.

When you do a job like this, more so than a lot of other jobs, you really need to have very skilled people helping you because there are so many elements going on. We did constantly playback/live, playback/live; segueing in and out; music cue after music cue; changing cues, making splices and edits in the tape as we went. And, unless you really have good people, like this fellow, Fallon, or the boom people, you can't do a good job. You look like a total fool.

Mix: Would you describe how you did the playback/live?

Newman: A song would be sung on stage and then there would be a stop. The actor would speak and it would be recorded live, then the music would continue. In some cases, we ducked the playback, meaning we just took it out for those two seconds, and then brought it back in again.

Mix: Was there live music on the stage while the singing was going on?

Newman: No, unlike other movies that I've done—for example, *Fame* or *Ama-deus*—there was no singing recorded live. There were lots of discussions about doing some songs live, but ultimately the decision was tempered by the fact that things would only be done live if the respective actors or actresses could not lip sync well.

Mix: So, what was recorded in the theater?

Newman: Only the dialogue.

Mix: No dancing either?

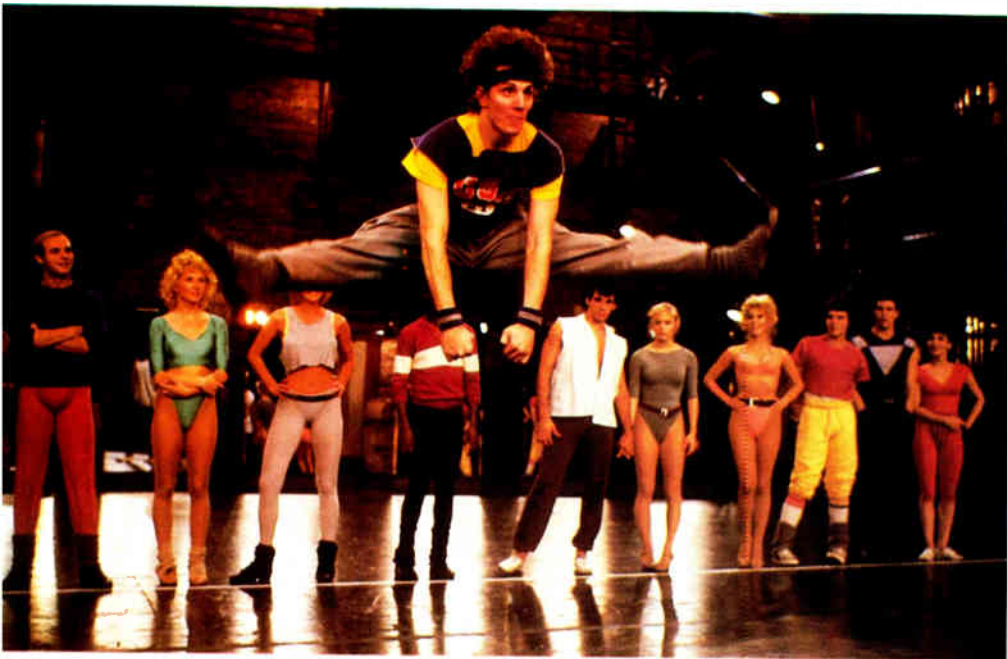
Newman: Dancing, that's a whole other story. What we did was, while the production was shooting and when some less important things were going on, I went with my crew to another theater with John Bloom, the editor, and Jonathan Bates, who's their supervising sound editor, from England. We showed some of the cast people a video copy of various parts of the first and second edited reels of the picture. And they, in fact, did Foleys. We used a wireless headphone system. We played Q-tracks for them right from the cut sections. And we recorded their Foleys in stereo at this other theater. Those Foleys will be used in the picture.

Mix: What was on the video copy they were looking at?

Newman: They could see themselves dancing.

—PAGE 24

Young hopefuls strive for *The Big Time*



—with double insulated walls; stuff like that. And there were lights inside that house. But the truth of the matter is that no matter how well you construct something like that, there's a point of diminishing returns. And you cannot shut out the noise if there's a lot of noise. It varies from day to day. Wednesdays are the worst because they're matinee days [the Hellinger Theater is located in the theater district of Manhattan]. And you could tell, if you listen in the background, what day it was shot on.

Mix: That didn't go into the picture, though?

Newman: Well, mostly we were able to either fit lines in from closer takes, and some stuff was looped. It wasn't perfect, and we knew going into it that it wasn't going to be like a soundstage. But the tracks that we produced, I thought were pretty good, quite good, as a matter of fact. If we had been on a soundstage it would have been much easier and, probably, other kinds of problems would have arisen. But certainly the one enormous advantage you have working on a soundstage is that you never have any serious background [noise] problems. You might have all kinds of other problems but you don't have background noise.

And that's one of the big problems in mixing a feature film: you try to set up a

stantially. But most of these kids are dancers. Most were wearing very tight outfits, leotards of one kind or another. In most cases, they segued from speaking into dancing. And I thought, considering that there were 16 principals plus Michael Douglas, that it was absolutely the wrong way to go in terms of a technique. I thought about it for a long time.

Mix: Why was it the wrong way to go?

Newman: Because it's too inhibiting. If you're shooting on a set, one of the considerations is money and time. One of the things that I get paid for, in addition to making a good sound track, is to execute my work pretty quickly. And, if I'm up there constantly fiddling, adjusting, fixing, specing out faulty noise, moving a transmitter because the camera sees it on somebody twirling around—as the boom man (two boom men, in this case) also is—that's a waste of time.

It unsettles the artist. It makes everybody very nervous and it's a negative way to go. If the people were wearing conventional costumes, then it would have been a very serious consideration. And we did use radios occasionally, when we had to.

Mix: So you used boom mikes entirely?

Newman: Yes. We used Sennheiser shot-guns, for the most part. We used an extra long boom made for television work,



THE POINTER SISTERS NEVER WORRY ABOUT THEIR WIRELESS

Even though the Pointer Sisters take plenty of chances on stage, they never gamble with their equipment. They use Samson professional wireless systems because of their proven reliability. Samson's long range, no dropout performance gives them the freedom of movement they need in concert. The Pointers have built a career by making smart moves. Like choosing Samson Wireless.



Joe Mumford, Musical Director, plays with Samson's Broadcast Series Guitar System.

SAMSON

WE TOOK THE WORRY OUT OF WIRELESS™

Samson Products Corporation, 124 Fulton Avenue, Hempstead, New York 11550 (516) 489-2203 TLX 284696 SAM UR In Canada: Omnimedia Corporation Ltd., 9653 Cote de Liesse, Dorval, Quebec H9P 1A3 514-636-9971 © 1985 Samson Products Corporation

Circle #008 on Reader Service Card
World Radio History

Introducing the Tapeless

No Tape to Wind... No

Recently, at the AES Convention in October, New England Digital made history by premiering the first tapeless recording system.

Using a combination of 16-bit polyphonic voice samples, FM synthesized timbres, and "live" instruments and vocals recorded direct-to-disk, a complete multi-track recording was made. In other words, the functionality of a modern studio at a fraction of the cost, and **it's all digital!**

The Direct-to-Disk™ multi-track system provides a non-tape contiguous recording medium, fully expandable from four to sixteen tracks, featuring full 96 dB signal-to-noise ratio.

Depending on the size and number of hard disk (80 and 140 megabyte Winchester) drives per system, each track will record a minimum of ten minutes to a maximum of *one full hour!*

No Tape to Wind... No More Razor Blades!!

In an instant you're back to the top of the recording ready to record your next take. No tape to rewind: no creative energy lost...dramatic cost savings!

When it comes time for the laborious and expensive process of editing, you won't require the blade of a skillful tape surgeon. All editing can be accomplished using software techniques.

Initial system software features will offer *variable length cross fade splicing, automatic punch-in, fast-forward, and SMPTE-based editing.*

Other Synclavier® Features

- **Polyphonic Sampling** - The first 16-bit polyphonic sampling system is still the best. The system can support up to 32 fully polyphonic voices and 32 megabytes of RAM. The polyphonic option offers 96 dB signal-to-noise ratio and a sampling rate of up to 100 kHz.
- **MIDI** - The Synclavier offers the most extensive MIDI system in the world. For example, control 32 different MIDI systems with one key depression. The Synclavier MIDI

option, in addition, is free from the delays which have plagued most MIDI systems on the market.

- **Multi-Channel** - Each track of the Synclavier's 32-Track Digital Recorder can have a separate output directly connected to your recording console.
- **76-Note Velocity/Pressure Keyboard** - Definitely the most advanced and easiest keyboard to use, offering independent velocity and pressure, complete programming and a built-in 32-track digital recorder. Plus, extensive real-time effects.



ess Recording Studio

ore Razor Blades!!

MPTE - Each Synclavier offers MPTE compatibility which includes software that can edit sound effects musical passages down to the subframe.

Guitar Interface - Owned by John McLaughlin, Pat Metheny and Al Di Meola. Listen to their latest records for the best possible demo of this amazing option.

Automated Music Printing
The first ever automated music printing gets better still, offering complete transcription of scores, parts and lead sheets. Plus, coming soon: laser printing!

• Instructional Video Cassettes and Documentation

If you're interested in relaxing in your home or studio and learning the basics of the Synclavier system, you can now purchase three video cassettes which guide you through its basic features and operations. Send your check for \$175 per set of three (not sold separately). Complete printed documentation is also available for \$200 for each set of manuals.

Synclavier is a registered trademark of N.E.D. Corp.
Direct-to-Disk is a trademark of N.E.D. Corp.
Copyright 1986 New England Digital

If you haven't seen or heard the Synclavier lately, you owe it to yourself to get a demonstration. Please call New England Digital or one of our authorized distributors and check out the leading edge of digital music.

New England Digital

White River Jct, VT 802/295-5800

Los Angeles

New England Digital 213/651-4016

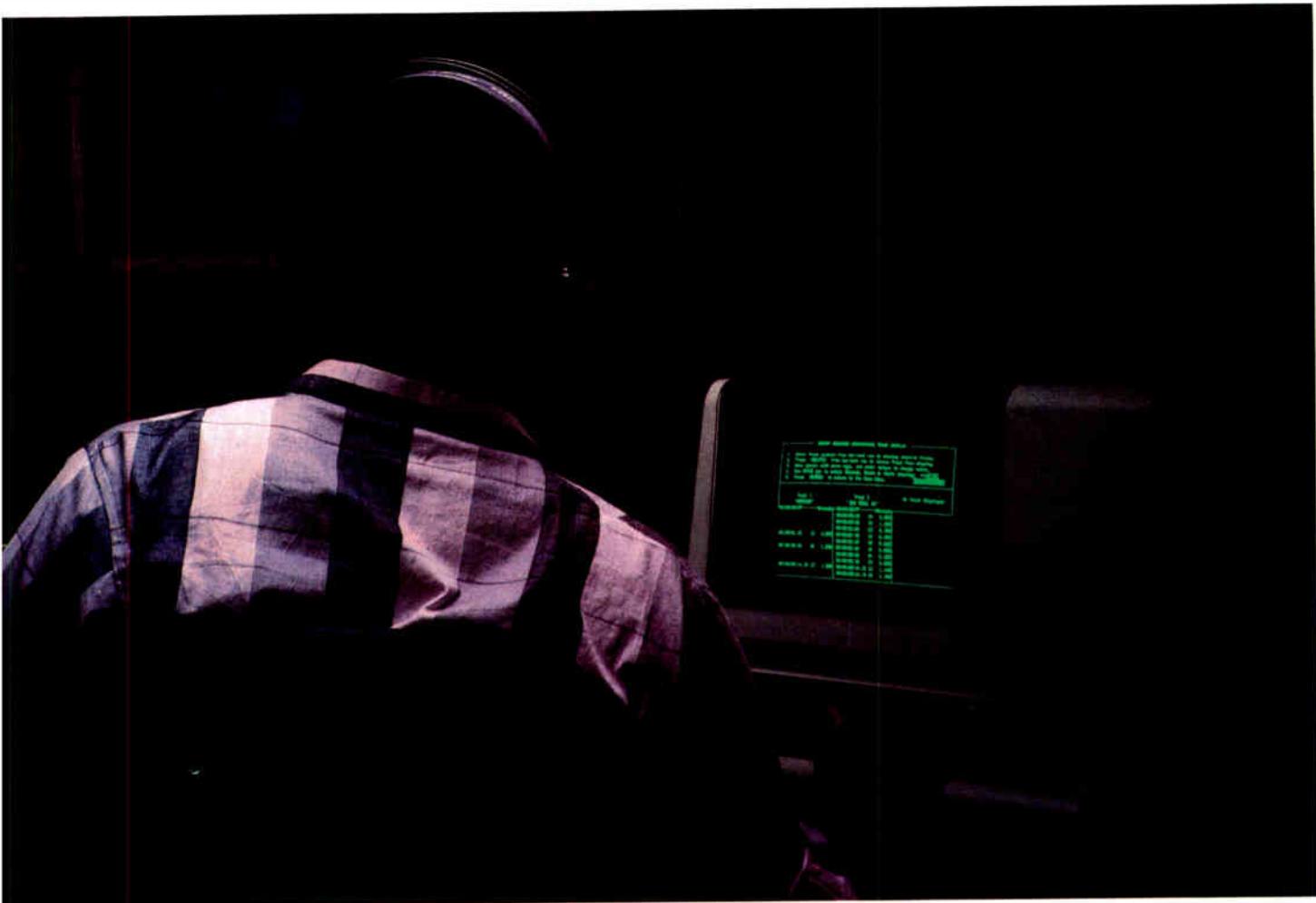
New York

Digital Sound Inc. 212/977-4510

Please note: The new Direct-to-Disk™ multi-track system is available by appointment only in New York and Los Angeles.

Synclavier®

DIGITAL MUSIC SYSTEM



Synclavier operator captures continuous live vocal overdub

—FROM PAGE 20, NEWMAN

Mix: So they did Foley to their own dancing?

Newman: Yes, exactly. And even they had trouble remembering their routines! So, if we had brought new people in to do the routines it would have been that much more difficult. And we were lucky enough to find a theater where the acoustics were very similar to the theater we were shooting in.

Mix: Have you recorded in theaters before?

Newman: Yes, but never an entire picture, I'm happy to say. I hope never to do another picture in a theater because it's very tricky and difficult. The noise problems are such that people look at you and say: "What could you possibly be hearing? We don't hear any noise." They always say that to soundmen, anyway, because everyone knows that soundmen are totally crazed. Well, the truth of the matter is that the noise is there and you don't hear it. It's not like going outside or being in a noisy apartment. What's maddening about the theater is that you can never tell where the noise is coming from! It's a huge space. And, for example, the air conditioner would go on in an adjacent building to cool off a restaurant, and you absolutely go nuts.

Mix: How many of these problems did you anticipate?

Newman: I predicted the noise. My feeling was that we would get away with it and we did in all but ten percent of the cases. In most situations, in addition to having the directional microphones and people who know how to handle them, we always had actors who were projecting with a fair amount of voice. They were playing from the stage to Zack, who sits at some distance from the stage. And we could rely on that.

We could also rely on the editorial department to take medium and close-up shot tracks and fit them into extremely wide shots, where people were very, very small in the frame. And since John Bloom, the editor, was cutting as we went, we knew pretty much as we went what we needed, what we didn't need, what was going to be fixed, what wasn't going to be fixed.

When you have that kind of grown-up approach to filmmaking where no one is afraid of what they're doing, then you're in a position to deal very openly and say: "We screwed up on that one but we can use that track in there. And this one we have to loop, and this one will be OK if Rick at the transfer house noise suppresses it." It's only when you have a situation where people are very unsure of themselves or put off things, that it becomes very difficult to figure out what to do.



SANKEN INTRODUCES FOUR MORE MICROPHONES

Maker of world-acclaimed CU-41
double-condenser microphone releases
new products to international market.

Sanken Microphone Co., maker of the CU-41 two-way condenser microphone, famed among sound engineers throughout the world for the transparency of its recording qualities (which make it perfect for compact disk recording), is pleased to announce the release of four more of its high quality microphones to the international market. The microphones are:

CMS-6 MS Stereo Microphone A small, lightweight, hand-held microphone for high quality outdoor radio, TV and movie recording. Comes with portable battery power supply and switchable matrix box. Freq. response 50Hz to 18kHz, dynamic range 108dB, self noise less than 19dB.

CMS-2 MS Stereo Microphone For quality music, radio, and TV studio recording. Small and lightweight, it has been widely used in Japan for more than eight years. Freq. response 20Hz to 18kHz, dynamic range 129dB, self noise less than 16dB.

CU-31 Axis Uni-Directional Condenser Microphone and CU-32 Right Angle Uni-Directional Microphone For music, radio, TV and movie studio recording. Renowned for their high performance and remarkable reliability. Freq. response 20Hz to 18kHz, dynamic range 129dB, self noise less than 19dB.

For more information on these new microphones, as well as on the famous CU-41, contact your nearest Sanken dealer, as listed below.

New York: Martin Audio Video Corp.
423 West 55th Street
New York, New York 10019
TEL (212) 541-5900
TLX 971846

Nashville: Studio Supply Company, Inc.
1717 Elm Hill Pike, Suite B-9
Nashville, Tennessee 37210
TEL (615) 366-1890

sanken

Japan's most original microphone maker

Sole export agent: Pan Communications, Inc.
5-72-6 Asakusa, Taito-ku, Tokyo 111, Japan
Telex J27803 Hi Tech/Telephone 03-871-1370
Teletax 03-871-0169/Cable Address PANCOMMJPN

Circle #010 on Reader Service Card

AND NOW, FOR YOUR NEXT PERFORMANCE



Celebrity™ Series Electret Condenser Microphones

The EC™ 10, EC™ 11 and EC™ 15 electret models are the latest addition to our popular Celebrity Series. Their condenser design offers enhanced transient response and reduced sensitivity to mechanically generated handling noise.

Cardioid patterns of the EC-10 and EC-11 are well-defined and smooth to provide superior rejection of unwanted off-axis signals. The EC-10 is designed to have a flat, natural sounding frequency response when used in close proximity to the sound source. The EC-11 has a wide, flat frequency response when used at a distance of six inches or more and a mild, controlled bass emphasis when used as a hand-held vocal microphone.

The EC-15 omnidirectional microphone has broad bandwidth and uniform response which recommend it highly in situations not requiring a unidirectional polar pattern, such as broadcasting and recording.

The Celebrity Series microphones from Peavey. Quality and performance at prices you'll applaud.

Peavey PS™ 2B and PS™ 4AC Phantom Power Supplies are available as optional equipment for use with the Celebrity Series Electret Microphones when the mixer lacks integral phantom power.

Peavey Electronics Corporation / 711 A Street / Meridian, MS 39301 / Telephone: (601) 483-5365 / Telex: 504115 / ©1985



World Radio History

Circle #011 on Reader Service Card

*Hand-Crafted
in the USA*

Mix: You say there was no music played in the background while the acting was going on...

Newman: That's not entirely true. What happened was—I don't know if you're familiar with some of the songs in *Chorus Line*—but with some of them there are kind of "vamps" or musical interludes that go on while there are soliloquies. In some cases it's necessary for the actors to hear the tempo to get back into tempo or into key when they begin to sing. But, for the most part, since we wanted to try to preserve the dialogue of the soliloquies in between, we would either take the playback down to an almost inaudible level and hope that their voices would drown it out, which it did in some cases and it didn't in others; or you'd take it out completely. Mike Tronick, the music editor, would count off stage or wave his hand off stage. Then he would direct the playback operator to bring the playback back in as close to the beginning of the playback cue as possible so we could keep as much dialogue as possible. The way I see it, my job is to preserve as much of the live dialogue as I possibly can.

In some cases we would use something called a "thumper," which is basically a digital metronome that, if keyed by a variety of things on the playback track, will keep the tempo of the music and will produce a very, very low frequency thump on the stage. I went out and I bought some sub-woofers which were mounted on the edge of the stage. It's very upsetting for some people to listen to—it sounds like a heartbeat. What happens is you hear the music, the music goes off, then you hear: "Boomp, boomp, boomp." In some cases, dialogue was going on and people were dancing to the tempo of the thump. So we had to give the dancers something on the stage [to dance to] because we saw their legs moving and it's very, very, very hard to fake that kind of dancing unless they have something to motivate them. On the other hand, you don't want to screw up the dialogue totally by having to loop a three-page scene of dialogue. And if you start to use little ear pieces for the dancers, you're talking about 16 ear pieces and people running around putting them in, taking them out, putting spirit gum on them so they don't fall out when the dancers turn around.

Mix: So the purpose of the thumper is to motivate the dancers?

Newman: Yes, and to keep them in tempo. Then—and this is all quite hypothetical—in the post-production, if you put the music back in on top of the thump, the thump becomes part of the rhythm track of music.

Mix: You don't hear it?

Newman: You hear it as part of the music so you don't know what it is. Suppose, for example, there was a solitary bassist on the stage and he was playing a very low note in tempo and the dancers were cueing off that low note. Or suppose there was a kick drum and he was just going: "thump, thump, thump," keeping time for them. Sup-

The list below contains all of Chris Newman's theatrical motion picture sound recording credits, thus far released. A single asterisk (*) indicates Academy Award nominations for Best Sound, a double asterisk (**), an American Academy Award, and a triple asterisk (***), a British Academy Award. The name following date of release is that of the director.

Medium Cool (1969) Haskell Wexler
The Landlord (1970) Hal Ashby
Little Murders (1971) Alan Arkin
*French Connection ** (1971) William Friedkin
Klute (1971) Alan Pakula
Heartbreak Kid (1971) Elaine May
*The Godfather ** (1972) Francis Coppola
Cops and Robbers (1972) Aram Avakian
Shamus (1973) Buzz Kulik
*The Exorcist *** (1974) William Friedkin
The Taking of Pelham 1-2-3 (1974) Joseph Sargent
Law and Disorder (1974) Ivan Passer
Mickey and Nicky (1976) Elaine May
Who'll Stop the Rain (1978) Karel Reisz
Comes a Horseman (1978) Alan Pakula
All That Jazz (1979) Bob Fosse
Hair (1979) Milos Forman
Winter Kills (1979) William Richert
Power (1980) Barry Shear and Virgil Vogel
One Trick Pony (1980) Robert M. Young
*Fame **** (1980) Alan Parker
Ragtime (1981) Milos Forman
Sophie's Choice (1982) Alan Pakula
Soup for One (1982) Jonathan Kaufer
Tender Mercies (1983) Bruce Beresford
Beat Street (1984) Stan Latham
*Amadeus *** (1984) Milos Forman
A Chorus Line (1985) Richard Attenborough

pose, when the thing is in fact mixed, you bring in either a piano or a rhythm section. The minute you bring any kind of music back in, you obliterate the thump. The thump becomes part of the musical elements.

Mix: It doesn't interfere?

Newman: There were times when it worked and times when it didn't work. Most of the time it worked. We only used it three or four times. From the reports that I get, it seemed to work very well. I think it's just another technique for shooting dialogue with music going on.

Mix: How would you decide when to use the thump and when not to?

Newman: We made educated guesses. The criteria was: could we hear it and how loud was it in comparison to the dialogue? And in a couple of cases, since I was making 2-track recordings because I always work with a stereo Nagra, I was able to take a direct feed from the playback track and feed the playback in on another track and listen to the dialogue rehearsal and listen to the playback to see if I could hear any thump. If I didn't hear any thump or if it was way down under their voices, then we assumed it would work. And it did.

And the other criterion was whether the dancer could keep time to it. See, one of the problems of the thumper is that the attack of the thump on a big stage is not very sharp. It's not like a click track. It doesn't have the bite that the leading edge of the click has. It's very dull. And the only way to make it sharper is to raise the frequency. But the higher the frequency the more audible it is; also you have to make it louder. So somewhere there's a compromise between how high you make it and how loud you make it. Between Jeffrey Hornaday and Mike Tronick, and all of us working with the dancers and rehearsing them, we were able to get them to be sharp enough in the background, so that they in fact were dancing in tempo and a dialogue was going on in the foreground.

Mix: What's the frequency range?

Newman: From about 25 Hz to about 400 Hz.

Mix: What was the approach to the pre-production planning on *Chorus Line*?

Newman: It consisted of discussing with Sir Richard, the music people, and Jeffrey Hornaday, things such as: we are going to do this dialogue live, we are going to do this dialogue to playback; we are going to do this line to playback. We are going to try to use the thumper here. We are going to try to use earpieces on "Hello 12," because people have

—PAGE 173

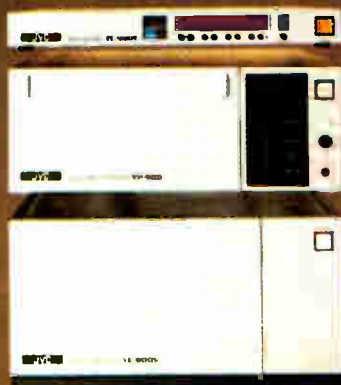
JVC Digital Audio. The artist's editing system.

Digital audio editing takes on new speed, simplicity, and flexibility with JVC's 900 Mastering System. Anyone with a trained ear can learn to operate it in minutes and be assured of professional results of outstanding fidelity, accuracy, and clarity. And while sonic excellence is surely the 900's most persua-

sive feature, flexibility runs a close second. For not only will the 900 operate with 1/4" VCR's, but with VHS cassettes, too, with total safety and confidence, making it ideal for mastering digital audio discs and the increasingly popular hi-fi video discs. The DAS-900 consists of four principal components.

VP-900 Digital Audio Processor.

Two-channel pulse count mode processor. Several 16-bit micro-processors make it compatible with other professional production equipment such as cutting lathes, synchronizers, and encoders. Dynamic range of more than 90 dB. Frequency response from 10 to 20,000 Hz (± 0.5 dB), and low recording bit rate of 3.087 Mbits/s at 44.1 kHz. Transformer-less analog I/O circuits further improve sound quality, and the analog-to-digital, digital-to-analog converter reduces distortion to less than 0.02 per cent, while an emphasis circuit improves signal-to-noise ratio. Logic circuit uses CMOS LSI chips for high reliability, compactness, light weight (48.6 lbs) and low power consumption.



Audio Editor Control Unit.

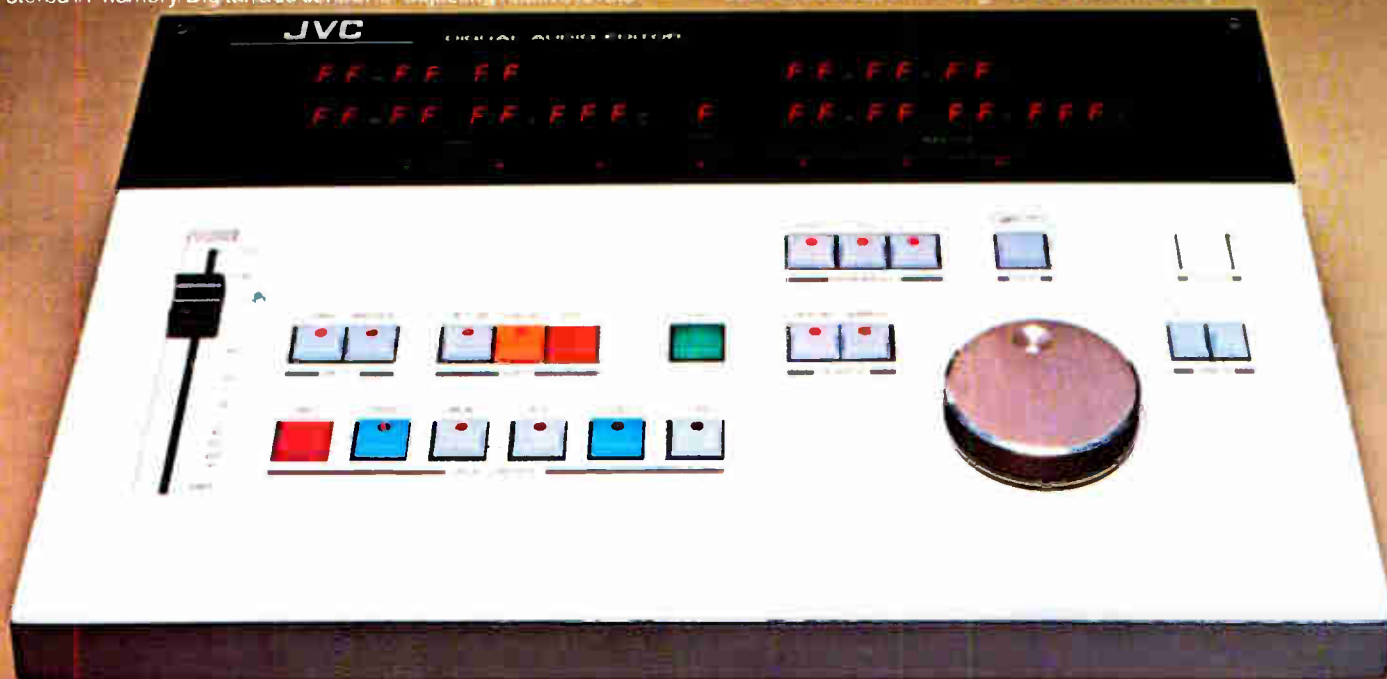
Electronic governor for routing, coordinating, and executing all edit functions, both automatic and manual. All commands, from digital dubbing of original to master for continuous programs, to repetitive point-to-point manual cueing are regulated here.

TC-900V Time Code Unit.

Actually two time code units in one, this unit reads and generates SMPTE standard time code and synchronizes the JVC exclusive BP (bit-parity) time code. Thus, the DAS-900 will operate effectively with both time codes; a necessity when the System is to be synchronized with video equipment.

AE-900V Digital Audio Editor. Simplicity itself to operate, this little number puts editing right in the hands of the artist, if need be. Precise to within microsecond accuracy, edit search can be carried out by manual cueing, automatic scan, or direct address. It will confirm cut-in, cut-out points independently by recalling signals stored in memory. Digital fade control for adjusting relative levels

between original and master tape. Shift function for changing edit points backward or forward in 2-msec steps for super-fine adjustment. And variable-gradient cross-fading function for smooth continuity at the edit point; variable in 0, 10, 20, and 40 microsecond steps. Auto tape locate function enables the user to locate the desired address on the original tape automatically.



For a demonstration of the DAS-900 Digital Audio System, a Spec Sheet, or JVC's complete catalogue, call, toll-free

1-800-JVC-5825

JVC COMPANY OF AMERICA,
Professional Video
Communications Division,
41 Slater Drive,
Elmwood Park, N.J. 07407

JVC

JVC COMPANY OF AMERICA
Professional Video Communications
Division



PHOTO: RICK GOULD/IN CONCERT PHOTOGRAPHY

Carlton at the console of Rm 335.

Larry Carlton's Rm 335

by Dan Daley

First, you cross an anonymous bridge spanning the Hollywood Freeway. A sharp left turn, and an even sharper right lead you onto a winding, semi-surfaced road that eventually gives way to dirt as it ascends a steep hill overlooking West Hollywood. Ruts grooved into the grassy side of the plateau show evidence of some serious dirt bike action. You reach the crest—still in second gear—and are confronted by a crossroads. Just before you flip a coin to figure out which way to go, a woman and two kids pull up next to you in a station wagon. You give her the address you're searching for and she responds, "Sure I know where that is. I live there."

So you follow Mrs. Larry Carlton, little Katy Lou, and Travis James up to a house set on the edge of the hill and surrounded by olive trees and hedges. She leads you through the house and points you down the stairs to the basement where Larry Carlton sits amidst the homey environs of Rm 335, a sophisticated recording studio featuring, among other things, perhaps the friendliest dog on the West Coast.

After the pooch finishes with his sloppy greeting, Larry himself welcomes you into the studio, where he has been working on his own records and those of other artists for eight years now.

Under one roof is the Carlton family home, the studio, and the offices of Larry's personal manager, Charlie Lico. But the pervading ambience here is familial, not corporate. Devotion to his family has brought the business and recording mountain to Mohammed, so to speak.

The appellation "Rm 335" should not be a mystery to devotees of Carlton's guitar wizardry; the Gibson 335 guitar is still his trademark. (Mike McGuire of Valley Arts Guitars is his current luthier of choice, and his best friend to boot, though.) And the *raison d'être* for the studio is two-fold, according to its creator. "I started doing record dates in 1970," says the Torrence, California, native. "I was one of the fortunate musicians who got very, very busy very quickly, which always leads to the potential to burn out." After a pause, he adds, "Well, I burned out."

"By 1975 I was already thinking that I had reached a peak financially and artistically. I knew that I eventually wanted to get into record production, and that was the first reason for building the room. The other reason was that I wasn't happy with the guitar sounds other people were getting on me when I did dates. So I thought if I had my own place I could make my guitar sound like I wanted it to. In order to have control over my sound and over entire proj-

ects, it made sense that I needed my own place to do it."

The recording area is a former recreation room which once housed ping pong and pool tables. In their stead are a rack of synthesizers, a funky baby grand and an isolation booth. "[The isolation booth] was originally designed for drums," explains Carlton. "It has a 2-foot trap behind it and a 2-foot trapping above it." But the booth proved too confining for drums, and a wall was later knocked down on one side of the room and a larger, open area for drums was constructed. The iso booth now is used for vocals and acoustic guitars.

The adjacent control room is about three-quarters the size of the recording room, separated from it by sliding double glass doors. An MCI Series 500 console (28x32x55, automated) is positioned so that the engineer has to look to his left to view the live action.

"We're constantly tweaking things, given the amount of space we have to work with," says Carlton. "The thing we continue to upgrade is the equipment."

Like any other studio, Rm 335 had an evolution all its own. But since Carlton began construction in 1977—prior to the big explosion in home recording technology—he went for a professional approach in terms of hardware.

"I started with a Quantum console—8 in, 4 out," he says. "It was Quantum's first small console. And I bought a used 16-track machine, an Ampex M-1100." With a patch bay built by a friend, he could monitor 16 channels, but record on only four at a time. "I started with no outboard EQ, just the treble and bass that's on the console. I started out writing jingles. Never placed any, but it was the start of my diversification."

In time, Carlton's vision exceeded the equipment's capabilities. "When we started to get more serious," he recalls, "I got George Augspurger and Howard Weiss involved. George built Studio D at Village for Fleetwood Mac and did work for A&M and Motown. We were on a limited budget and decided to put 70 percent of the money into the control room," (acquiring their current MCI console purchased from the Osmond's studio).

Getting into full swing in 1978, Rm 335 had three albums to its credit by the end of that year. (All of Carlton's solo albums have been recorded there.) The MCI transformerless 24-track machine was added, along with some additional outboard gear, Tannoy M1000 monitors and a room tuning.



THE TASCAM MS-16: FOR THOSE WHO'VE HEARD IT ALL BEFORE.

We designed our new 1" 16-track especially for the skeptics. Those who have heard all the other 16 tracks... and all the other claims. Hearing is believing, and the MS-16 delivers enough audio quality to convince the most critical ears. But that's just part of the story. The fact is, the closer you look into the MS-16, the better it gets.

The MS-16's superlative performance begins with our new micro-radii heads. They virtually eliminate "head bumps" and ensure flat frequency response. Put this together with direct-coupled amplifiers throughout, plus ultra-quiet FETs, and you get exceptional transient and low frequency response with extremely low distortion.

Unlike most tape machines, the record/sync and playback heads on the MS-16 are identical in performance, so you can make critical EQ and processing decisions on overdubs or punch-ins without having to

go back and listen a second time. You get what you want sooner and with fewer headaches.

Record Function switches for each track allow effortless, one-button punch-ins. Input Enable allows instant talkback during rewinds. With the MS-16, you're free to concentrate on the project at hand... rather than on your tape machine.

The MS-16 takes the grief out of locking up with other audio and video machines as well. The 38-pin standard SMPTE/EBU interface affords speedy, single-cable connection with most popular synchronizers and editing systems. And the MS-16's new Omega Drive transport stands up to continual shutting while handling tape with kid-glove kindness.

Take a closer look at the MS-16. See your TASCAM dealer for a demo, or write us for more information at 7733 Telegraph Road, Montebello, CA 90640.

THE TASCAM MS-16 SIXTEEN TRACK



TASCAM THE SCIENCE OF BRINGING ART TO LIFE.

Space is the big consideration at Rm 335, though; there's just not a whole lot of it, and Carlton tried various innovations to get the most out of what there was to work with. But, he acknowledges, "That wasn't as fruitful as it could and should have been because during the first several years down here, I did all the engineering." And after a pause and a wry smile, he adds, "And I'm not an engineer. I had never engineered anything in my life before I started making records down here. And the records show it. There's some phenomenal music on my first few albums, but if the sound had been as good as the music was, I think it would have been a much better package."

Working with an assistant, Carlton would get all the sounds, set levels and EQ, run the machine, and play on the date. Beginning with the *Friends* album, he brought in Michael Verdick to mix, "because I thought it was the best album I ever made and I knew I wasn't capable of presenting it the way it needed to be," he recalls.

Since then, Carlton has used others to engineer for him. Rik Pekkonein, a freelancer who began his career at Wally Heider's in the late '60s and more recently has worked with Joe Jackson and Womack & Womack (and drawing

a nomination in 1985 for a *Mix* TEC Award for Engineer of the Year), is at the board for Carlton's new solo project. He echoes the inherent spatial limitations of the facility, but finds them to be more of a challenge than a hindrance.

"You have to make a lot of acoustical compensations because the room has very low ceilings," he points out. "You're not going to get John Bonham drum sounds in here. And on this particular album where Larry's playing acoustic guitar and we have a set of drums in a tight environment, it's very tough to get separation that is usable. The way we do it is to close off the booth with the acoustic in it, judiciously choose our mics and go for it that way."

"In this particular environment, we have to close-mic a lot and we have to use that technique to its fullest because the room just doesn't help you out too much."

The original patch bay is still in the control room, and Pekkonein acknowledges that, "it needs a little help now and then, but what patch bay doesn't?" He adds that he has encountered some acoustical problems in the control room, but that those are being resolved. "We've just added some Sonex baffling to the ceiling because we had wooden treatment (in the area near the monitors)

and it wasn't working; we were getting a little too much midrange splattering all around. Then we had to retune the speakers with white (noise). It's not a big control room," he sums up, "but all in all it works out quite well."

335 is a room with a view, but while everyone enjoys the fresh air, there is a humidity and dust problem, especially annoying when you have so many acoustic instruments. "We always have to leave the air on," says Carlton. "We never let it get below 70 degrees."

Carlton hasn't limited the studio to his exclusive use. Recently, he produced tracks on records by Bill Withers and Larry Gatlin and the Gatlin Brothers, and the score to the movie, *Against All Odds*, at the studio, which he did with Michael Columbier. Virtually all the work was done in Carlton's basement studio; only the mix was done elsewhere (at Record Plant with its sync-lock equipment). Carlton also has a penchant for live strings, and for those he will also head out for bigger spaces, but otherwise he feels he is completely self-contained in Rm 335.

While some artists prefer to keep their work and home environments separate, the aspect of Rm 335 that draws enthusiastic responses from everyone is its home-like atmosphere. "What's really

FINALLY, SAMPLING MADE SIMPLE!

No longer do you need to be a computer whiz kid to unleash your sampling creativity. Now in just 8 seconds you can sample anything (from a Model "T" to a Boeing 747 . . . or permanently store your favorite sounds . . . from a C.D. to a \$25,000 synthesizer!!)

The only limit with the AKAI S-612 is your own creativity. Of course, we offer hundreds of pre-recorded samples to get you started.

Write to us for additional SAMPLER™ info or visit your local AKAI dealer.

AKAI S-612 SAMPLER
\$995.00

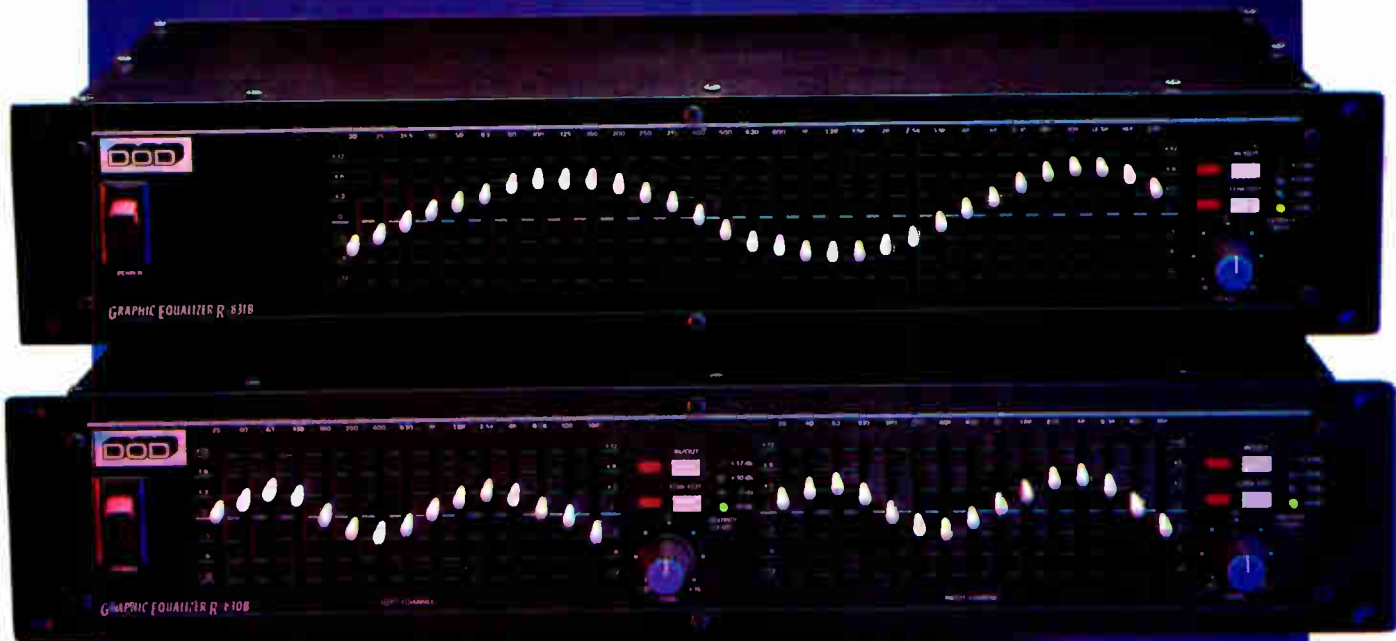
Another Product of **IMC**

AKAI
Professional Products

P.O. Box 2344 Fort Worth, TX 76113 817-336-5114

Circle #014 on Reader Service Card

TRUE EQUALITY



In the past, low price has often been equated with low quality. No longer!

DOD's R-830B and R-831B EQ's feature computer aided design, low noise, high slew rate, low distortion, and extremely accurate controls. Add to this DOD's low prices, and the result is two of the most popular EQ's on the market today.

- Modular PC board construction
- Center detented, linear potentiometers
- All metal chassis
- Four-level LED output indicators
- Low cut filter
- Bypass switch
- 12 dB boost or cut
- Signal to noise greater than 95 dB
- IM distortion less than 0.01%
- One year warranty

If you haven't yet discovered the true equality, you owe yourself a visit to your nearest DOD dealer for a demonstration.



5639 South Riley Lane Salt Lake City, Utah 84107 Telephone (801) 268-8400

nice about the place is that it's so comfortable," says Pekkonen. "When you get here, Katy Lou and Travis James meet you at the door. Musicians who come here really don't feel like they're in a studio atmosphere."

"One thing I can say about the studio being in the house," says Carlton, "is that I haven't run into one artist that has worked here that isn't comfortable from the minute they walk in. There's nothing pretentious about the room, but it still sounds wonderful. And since the vibe is so relaxed, I think the artist really responds."

The sessions with Gatlin illustrate the snug and intimate ambience of the studio. "Gatlin came into town and said, 'Let's just see what happens,'" recalls Carlton. "He said he wanted to do something different. He flew in with no songs; just a couple of lyric ideas and an acoustic guitar. We sat in the room and traded ideas and the tune was finished—with a vocal—within 20 minutes. He got his lyrics together right here, sang it, and that became the vocal on the record, a song called, 'Can't Stay Away From Her Fire,' from his *Smile* album.

"I produced three tracks on that record down here. Barry Gibb and I co-produced one tune, so half of that was done in Miami and half here. But it was a very creative feeling. As a matter of

fact, I was driving back to meet Larry at the studio one day, and on the way I came up with a section of a song. I started playing it for him, he started singing and just like that, we had a song."

That anecdote underscores the point that Rm 335 is not simply a recording studio, but an artist's studio—a technologically advanced version of someone's living room where creativity occurs unhampered by clocks and other worldly intrusions. "It's always here," says Carlton, "and having the abundance of equipment, the quality of sound, the working knowledge and the 24-hour access is wonderful. I come down here to write (for my new record) and I set up a drum machine, patch everything in, decide what kind of a mood I want, and usually within an hour I've got a song well under way. Everything I have so far for this record I wrote down here. I keep everything ready for when I get an idea."

But does it ever get too close to home? "I haven't had a problem with (that)," he responds. "I'm not a workaholic. When the studio was new, I used to spend a lot of time down here. It was an amazing toy. But then it settled down to becoming what it is: a tool to make music with. The studio doesn't own me; I own the studio."

According to Carlton, what makes Rm 335 more than the sum of its parts

are the people who create there. "A lot of players I've worked with the majority of my career—Jeff Porcaro, David Paich, and so many others—we all started together down here in this little room."

He recalls an incident from the recording of the *Friends* LP, when he decided to go into another L.A. studio to try for a more sonically perfect album. After the first session, everyone wanted to get into the control room and listen to the take. "Jeff (Porcaro) came up to me and said, 'Carlton, I don't care what it sounds like in there. We gotta go to your place to make your music and kiss your kids goodnight.'

"That's the whole thing—they come to my house and we make music in this intimate little room and the kids come down and say goodnight. Everyone here is family. And it shows in the music. How do you get that in another studio?"

Studio Equipment: MCI Series 500 console w/automation, MCI transformerless 24-track, Ampex ATR 102 2-track (1/2-inch and 1/4-inch), H&H, Macintosh, BGW and Crown power amps.

Monitors: Tannoy M1000, JBL 4311, Auratone and Visonik David 9000.

Outboard: API 550 equalizers, EMT 140 echo chambers, MXR digital echo, UREI limiters (LA 2A and 1176), Kepex II noise gates (4), Lexicon Prime Time (2), DeltaLab DL-2 w/Memory Module delay, Eventide 949 harmonizer, DeltaLab Super Time Line Delay.

Microphones: Neumann U-67 and U-64 (tube) and U-47 (FET), AKG 414, 451 and C-24 Stereotube and assorted dynamic and condenser mics.

Musical Equipment: DMX and LinnDrum computers, Dr. Click, Yamaha DX-7 (2), Roland Jupiter 8 and Juno 106, MiniMoog, Yamaha CP-80, Fender Rhodes (Eddy modified), Gretsch drums, various guitar and bass amps.

In keeping with the intimate atmosphere around Rm 335, Carlton says he is "very selective" about making the studio available to outside clients. "I allow friends to use it," at a variable rate. Since the studio is part of the house, he is understandably protective of his family's privacy. "I would be open to letting people use the studio," he says, "but only if they had a record deal. In other words, I don't want bands coming in to do demos. I want it to be... professional... to keep it on a certain level."

For information, contact: Charlie Lico at (213) 876-6536.

—Dan Daley

At work recording in Rm 335.

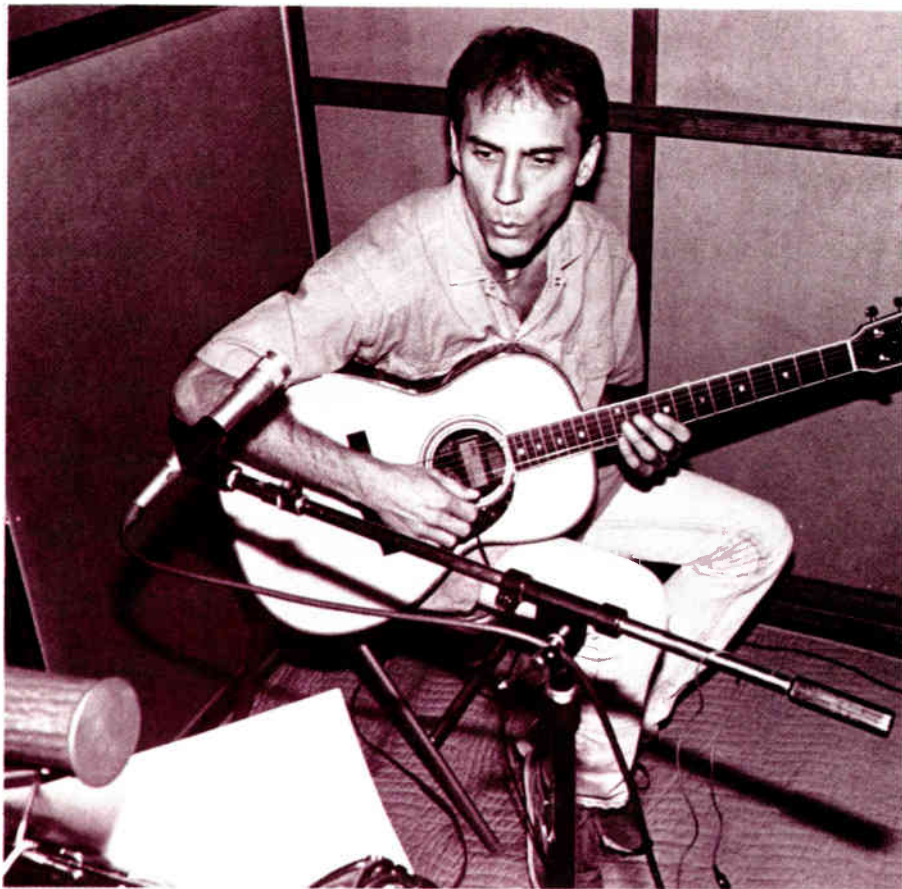


PHOTO: RICK GOULD/IN CONCERT PHOTOGRAPHY

FOR THE NEXT STAGE IN YOUR CAREER.

The band has paid its dues. Played the garages, the dives, the schools. But now you're into some good-paying steady gigs. And ready to go for broke. Without going broke.

You're ready for a Yamaha MC mixing console. A full line of new consoles that have many legendary M-Series features and reliability. And are affordably priced.

There are three models in the line—the MC1204, MC1604 and MC2404.

Which one you choose depends on how many channels you need. The first two numbers after the MC tell you how many input channels that model has. The last, how many output channels.

Whichever MC mixer you choose, you get input channels that are modularly constructed in blocks of four for easy access.

Each channel has a pad switch and gain control with peak LED, three-band EQ with sweepable midrange, two pre-EQ and pre-fader

foldback sends, two post-EQ and post-fader echo sends, pan control, group 1-4 assignment switches, cue and channel on/off switches, and a 100-millimeter fader.

All are color-coded and logically grouped for easy operation.

With four group outputs that are assignable to the master stereo outputs. And two echo and two foldback sends.

There are even two MC monitor models, the MC1608M and MC2408M. They offer the additional capability of on-stage monitoring. So each member of the band can hear exactly what he or she needs to hear.

Now that we've set the stage, why not visit your Yamaha Combo dealer for a demo of the MC consoles. Or write: Yamaha International Corporation, Combo Products Division, P.O. Box 6600, Buena Park, CA 90622. In Canada, Yamaha Canada Music Ltd., 135 Milner Ave., Scarborough, Ont. M1S 3R1.



Circle #016 on Reader Service Card

World Radio History

IF YOU'RE A MUSICIAN

If you're a musician, your profession is more challenging and exciting than ever before. New technologies are giving you tools for self-expression that no one dreamed of just a few years ago. Digital synthesizers, portable multi-tracks and signal processing equipment have brought a whole new dimension to composing and performing; digital recorders and improved sound systems have made it possible to capture your music with remarkable clarity and dynamic range.

MIX is the publication that can best help you stay informed about this revolution in music technology. Every month MIX brings you columns and feature articles about subjects like MIDI, computer music systems, and how top performers get the sounds that keep them on the charts. MIX also features new product columns, reviews the newest instruments and other gear, reports on new artists and recording projects, and interviews the top names in music today. And MIX directories are your best source for information on industry services and facilities!



If you're a musician, you're in the MIX!—the magazine that ties together the worlds of creativity and technology. If you're not a subscriber, take advantage of our low subscription rates to receive MIX at home. Because in today's changing industry, you need information as never before...

...YOU'RE IN THE MIX

EQUIPPING THE HOME STUDIO: A Forum

by George Petersen

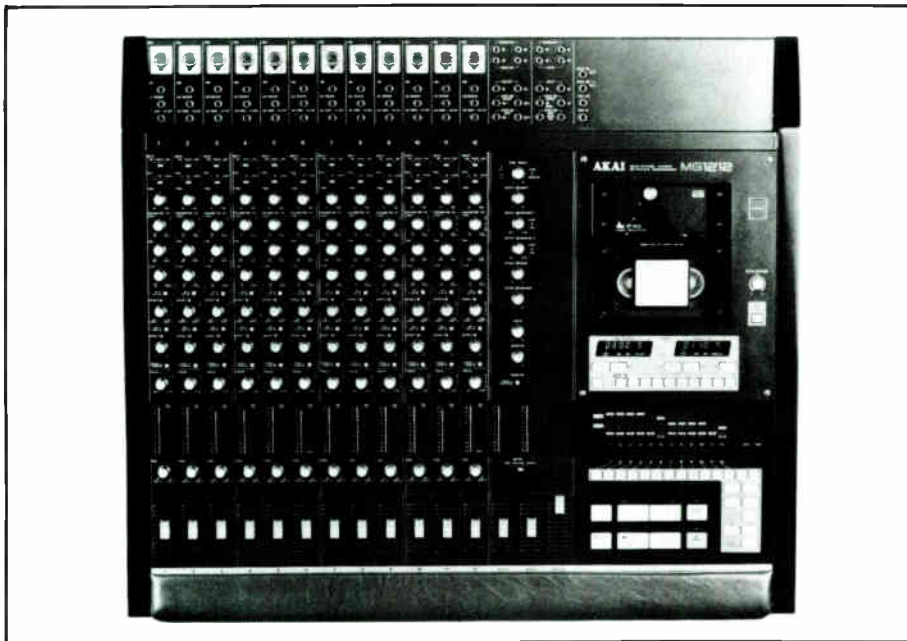
The look and performance of the home recording studio has changed considerably over the past decade. Today's advancements in both electronic instruments and recording technology allow the home recordist to create some amazing sounds for a comparatively modest investment. In fact, the effect of imperfect room acoustics (one of the major drawbacks of the home recording environment) has been all but completely eliminated via the emergence of direct input recording, drum machines, sampling devices, near-field monitoring, and the proliferation of inexpensive, yet good sounding digital reverbs. Another point which cannot be ignored is the advent of MIDI communications, offering not only an almost unlimited number of tracks, but also control over performance parameters and effects devices, note-by-note editing, and SMPTE synchronization capability.

Today, home studios come in as many

forms as there are musical styles. From a 4-track cassette/mixer pulled out during impromptu jam sessions to a full-blown 24-track facility, a home recording package can be assembled to fit nearly anyone's budget. We asked a number of retailers around the country for their recommendations about equipping under-\$10,000 studios. Some outlined specific packages they recently assembled, while others gave more general guidelines for selecting a system.

We chose the under-\$10,000 budget for three reasons: this is less than what even the least expensive 16-track setup would cost; this amount is approximately the borderline figure between the costs of a part-time "hobby" facility and the lower end commercial studios; and there is a substantial amount of reader interest in this area. Since the selection of keyboards, MIDI gear and other instruments is a matter of personal choice and individual needs, the dealers we queried were not asked to specify musical equipment, but instead focused on recording necessities.

Akai MG1212 12-track cassette recorder/mixer



John Sugnet, Bananas at Large, San Rafael, California

"The Akai MG1212s are really popular and we've sold lots of those—both Sean Hopper and Chris Hayes of Huey Lewis & The News have bought them to do song demos. It retails for \$7,000, leaving you with \$3,000 to spend on a 2-track, monitors, outboard gear, etc. The new Fostex equipment is useful both for song demos and people doing video, because all their stuff is SMPTE-ready—they've brought out synchronizers [Models 4030 and 4035] and an autolocator [Model 4050] with a wonderful SMPTE-to-MIDI interface.

"A good console to go with the Fostex 80 [8-track] is their Model 450, which would cost under \$3,000 with the recorder. It has eight inputs, but you can fudge it to give 12 in. It's got a lot of nice features—individual phantom power, sweepable low and mid band EQ, with fixed highs—so if you're not doing a lot of sequencing and synth playing during the mix to the 2-track, the board would be fine. If you need more inputs and want to go upscale a bit, good choices are the Ramsa 8118, or for something really small and portable, the Hill Multimix. It's a rackmount 12-input board with four switchable subgroups that could be used to give 16 inputs. An intermediary step would be a Ramsa 8112, which is basically the same as the 8118, but with 12 inputs. It also works well as a sound reinforcement board.

"It used to be that if you didn't have JBL or E-V monitors, people wouldn't take you seriously—now there are a bunch of inexpensive monitors from TOA and Fostex that are very good. There are a lot of near-field monitors in the \$500 to \$1,000 per pair range that work well in the home situation. For amplifiers, the Peavey DECA 700s, Crown 150s and 300s, and the new QSC models are popular.

"The Roland SRV-2000 [MIDI Digital Reverb] is one of our hottest items—we've found that if you work with it enough, it can sound like a Lexicon PCM60, yet you can do more with it. The PCM60 has fewer possibilities, but is easy to use and sells well. There are a lot of good values in digital delays—the new Boss series of half-racks have RCA jacks, sound good, and are specifically oriented at the Portastudio through Fostex 8-track market. Another company I particularly like for straightahead outboard gear is Symetrix—very well made, and a good value: their 522 limiter/expander/ducker/gate is really neat. The Rane ME40 $\frac{2}{3}$ octave graphic EQ is a nice piece, and the Furman PQ-3 is a good, yet inexpensive parametric.

"With a microphone budget of \$700 to \$800, you can get a couple of really good mics and some less expensive ones. For a good single mic, I'd recomm-



Fostex Model 80: 8 tracks on 1/4-inch tape

recommend an E-V RE20, a Sony C-48 or an AKG 414EB. There are lots of good mics for the home studio: Audio-Technica dynamics, Sennheiser 421s. The ECM condenser mics from Peavey are very good for acoustic guitar, and I also tell people to look at the new TOA mics, particularly the condensers. They're just now beginning to come into the country and are a good value.

"There are always hidden expenses in equipping a studio that you often forget, such as cabling—Hosa from Los Angeles makes very good multi-track snakes that are inexpensive; direct boxes—there are good ones made by Audio Envelope, Roland and Countryman; and headphones. Accessories are also useful: Roland makes a box called the Multi-jack—an adapter with mini, RCA, and 1/4-inch jacks; headphone extensor; cables and boxes; short interface cables and adapters; head demagnetizers—you've got to demagnetize, even if you don't set-up. If people are interested in learning how to do their own set-ups, LofTech makes the TS-1 test set which comes with a pretty complete manual on how to do most tests."

Craig Fennessy, CSE Audio, Rochester, New York

"In the past year-and-a-half, we've seen a big thrust in the area of keyboardists' home studios, with a lot of

clients getting into the Tascam 8-track series. We're suggesting the Tascam series because we feel you get a little better fidelity out of the half-inch format. A lot of these people are also doing film work, so SMPTE also comes into the picture, and we've had a lot of interest in the new Fostex system: it's broken the price barrier, along with the SMPL System: you can get into synchronization for about \$1,500.

"The small digital reverbs are a big plus, with big sounds for small dollars. The \$1,500 units are very popular and the ART series of smaller ones in the \$800 range are also popular in the home studio. A lot of studios are going with a good package of noise gating, like the [USAudio] Gatex gates. The Orban EQ and some of the Orban effects are also really big with our clients—the response we get is that they're very musical sounding. Of course what you EQ is based on what you're hearing, and we're a big supporter of the new Tannoy NFM-8 near-field monitors, as well as the 10Bs, which are a little larger.

"We've been selling Amek consoles for four years, and I feel it's one of the best sounding consoles on the market. They've got boards in the \$100,000 range, but their TAC Scorpion line has mid-priced consoles in many configurations—16x8x2, 24x16—that fit into almost any situation. One nice thing about

it is that the EQ is so musical—it has the Amek EQ—and the sonic clarity and transparency of the board is just like their big ones.

"One of our clients has over \$100,000 invested in his home set-up, with a Synclavier, a Linn 9000—everything in his facility is digital. He's cut out the analog process, and now he's in the final stages of getting a good digital 2-track. He started in his home, and it just grew and grew. He's now scoring for national accounts like TWA. The potential is there."

Gary Gand, Gand Music, Northfield, Illinois

"There are a couple of ways to approach this, depending on how the customer will use the studio. You can put together a nice studio for \$10,000. I recommend sticking with a half-inch recorder—one of the Tascam machines or an Otari machine—because the wide track format gives better isolation and signal-to-noise ratio. The Akai MG1212 also sells well, and you could probably put together a \$10,000 studio with one. The Tascam Studio 8, with eight tracks on 1/4-inch tape, could be used for a nice \$6,000 studio with good monitors, power amp, reverb and mic. Often a customer will come in here and get that, along with a drum machine and a sampling synth, like the Ensoniq Mirage, and wind up spending \$10,000.

"I suggest investing in a good digital reverb and a good recording microphone: a person doing home recording is usually doing a lot of overdubs, and won't have to worry about owning a lot of microphones. When people listen to your recordings, in addition to the song itself, they listen to the quality of the vocal sound and the quality of the reverb, even if they're not conscious of it. We recommend spending at least \$400 to \$500 for a good vocal mic, and \$1,500 to get a nice digital reverb. The Lexicon PCM60 and the new Roland [SRV-2000] units are nice. A good reverb makes a big difference on a home studio tape.

"There are a couple of different ways you can go with consoles. Tascam has always had good things in various sizes: their new 300 series is very nice. Soundtracs from England are coming on strong with their T-Series. It has an interesting approach: it's a modular mixer you can buy in a 16x4 format, and then get expander modules to make it 20x4, or sub-master modules to make it 16x8 or 20x8.

"Monitors are usually the last thing a customer looks at for a home studio and JBL is the way to go when monitoring. They now own UREI, and you'd really have to carve on your \$10,000 studio budget to fit them in, but their Model 809s are physically small like a 4411, but have Time Align co-ax speakers with excellent imaging."



***Yamaha.
Leo's.***

***Heads you win.
Tails you win.***

***Northern California's most
complete selection of
Yamaha recording, sound
reinforcement and
keyboard products.***



***leo's audio
and music
technologies***

***Anticipating the needs of musicians
and audio professionals since 1956.***

5447 TELEGRAPH AVENUE • OAKLAND • CA 94609 • (415) 652-1553

Circle #017 on Reader Service Card



Tascam Studio 8, an 8-track recorder/mixer

Frank Offenstein, Filament Pro Audio, San Dimas, California

"In the \$10,000 range, you'd probably be looking at the Fostex 8-track or the Akai MG1212. Consoles in that package might be a Fostex console, a Hill Multimix or a Studiomaster 16x4x2. The hottest console we have in that price range is the Allen & Heath CMC-24, with the built-in microprocessor: we're selling the most of those right now and the customers are real happy with them.

"For monitors in that price range, customers usually go for the small two-way E-Vs, JBLs, Fostex, or TOAs. The TOAs are a really good sounding speaker, and are very cost-effective. They don't have the track record that the E-Vs and JBLs have, as industry standards, but they're starting to catch on.

Digital reverbs are very hot now, like the ART, Alesis, and the Ursa Major digitals. The DeltaLab CompuEffectron, 1030 and 1024 digital delays are popular, and in compressor/limiters, we get most of our requests for the Valley People units, the Symetrix 522s and the dbx 166s."

Richard Avery, Midcom, Irving, Texas

"\$10,000 is really squeezing it to the bare minimum, because we primarily deal with the upper end of the audio spectrum, but you could get a good *start* towards a nice 8-track studio for that amount. For the recorder, we'd recommend an Otari 5050 Mk III-8; an Otari 5050B-2 2-track; Ramsa 8112 console; and ART01 digital reverb. Then you would be right around \$10,000, which is at list prices. I'm sure that if somebody came in with \$10,000, we could squeeze in a couple more items. This is really the bare minimum, but it's a studio you wouldn't outgrow in a year. If you had a bit more money, you might want to go with a console in the Soundcraft line—the 200B or the 600, which would give you the capability of going to 16 tracks eventually.

"After a digital reverb, a nice option would be a dbx 900 or Valley People card frame to which they could add noise gates, Gain Brains, noise reduction, parametrics, comp/limiters, etc. There is a cost savings in the card racks, since all the components share the same power supply; another advantage is using only three rack spaces for what is essentially nine pieces of gear. For a single microphone to go with this system, I would choose an AKG 414. It lists for \$795, but it's hard to beat."

Rob Grubb, New World Audio, San Diego, California

"Here's a hot little system for the home: the Tascam Studio 8 1/4-inch 8-track, Lexicon PCM70, dbx 166 compressor/limiter, Aphex Type-C Aural Exciter, Neumann U89 with power supply, E-V Sentry 100A monitors, Hafler P225 amp,

LINK UP WITH NEW WORLD FOR THE FINEST AUDIO CHAIN.

KEYBOARDS

The Phenomenal Kurzweil 250



Plus . . . Roland Ensoniq Casio

MICROPHONES

The Neumann U89i

Plus . . .

- Audio-Technica
- Shure
- AKG
- Electro-Voice
- Beyer



CONSOLES

The Soundcraft Series 500

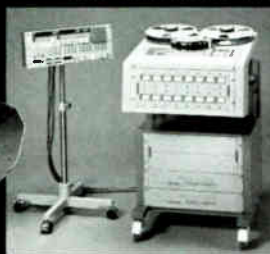
Plus . . .

- Tascam
- Neotek
- Soundtracs



RECORDERS

The Tascam MS-16



Plus . . .
Otari
Soundcraft

MONITORS

The JBL 4425



Plus . . .
Community
Electro-Voice
Klipsch
CSI
UREI

POWER AMPS

The Crown PS-400

Plus . . .

- Carver QSC
- Hafler BGW
- JBL UREI



NEW WORLD

4877 Mercury Street San Diego, CA 92111

TOLL-FREE ORDER DESK:

1-800-854-2005

MULTI-TRACK • FOR • MUSICIANS

Circle #018 on Reader Service Card



In the early morning hours of November 15, 1984 tragedy struck the Bethany Lutheran Church of Cherry Hills, Colorado. A faulty electric organ was blamed for a multiple alarm fire that claimed much of the structure. Thankfully no one was injured in the blaze that caused over one million dollars in damage.

In the ensuing clean-up operation a Crown amplifier was discovered under charred timbers. Owing to the intense heat of the fire the chassis had warped and the AC cord was a puddle of wire and rubber.

The amplifier found its way to John Segó at Listen Up, Inc. of Denver. Armed with insatiable curiosity and a knowledge of Crown dependability John installed a new AC cord and proceeded to verify operation on the test bench. The amplifier met factory specifications in all functions.

In the photo above we offer you another glowing report of Crown durability.



CROWN[®]

1718 W. Mishawaka Road, Elkhart, IN 46517
(219) 294-8000

Circle #019 on Reader Service Card

Optimize — don't compromise:



If you demand optimum performance from your tape recording equipment . . . you need our services!

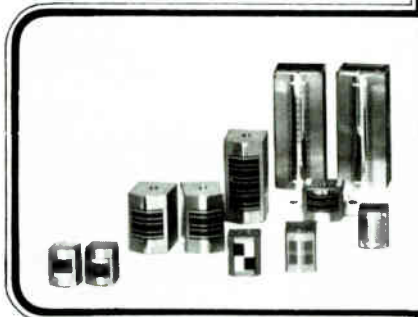
JRF maintains a complete lab facility insuring precision relapping and optical alignment of all magnetic recording heads and assemblies. Worn unservicable heads can be restored to original performance specifications. 24-hour and special weekend service available.

- Broadcasting
 - Mastering
 - Recording Studios
 - Tape Duplicating

New and reconditioned replacement heads from mono to 24-track . . . Many in stock.

For repair or replacement, we're at your service!

Call or write.



JRF/Magnetic Sciences, Inc.

101 LANDING ROAD, LANDING, NJ 07850 • 201/398-7426

Circle #020 on Reader Service Card

THE RACK 'N ROLLER

A rack style equipment console designed to consolidate recording and signal processing gear into one compact and mobile unit. Its expandability, portability, durability and functional design make the Rack 'N Roller ideal for in-home or on-location recording applications.



STANDARD FEATURES:

- Canted racks provide for optimum viewing angle.
- Single and double rack configurations available.
- Casters and handles.
- Textured-black industrial finish.

CUSTOM OPTIONS:

- Road covers and heavy duty casters.
- Patch bay or power wiring.
- Single point grounding network.
- Multipin interconnect system.

Single Rack Unit \$425 Double Rack Unit \$625
(plus shipping)

S K ENTERPRISES 6705 North Lamar Suite 293 Austin, Tx 78752
For product and ordering information call: (512) 442-7033

Circle #021 on Reader Service Card

two AKG 141 headphones, three Sennheiser 421 mics, Audio-Technica 836 dynamic mic, Countryman direct box, Tascam 32 2-track, racks, stands, cables, etc. The great thing about this package is the Studio-8 is compact and flexible, without a lot of patchcords, and the outboard gear lets you get a very decent sound.

"Other possibilities with this might be a Tascam Model 38 8-track with a Tascam 512 or 520 console—you might have to cut back a bit on the outboard gear, but it would otherwise be the same. Tascam also has the Model 48 8-track, which would probably fit in there; and the Otari 8-track would be nice, but then you'd be looking at half your budget for a tape machine."

Ed Alves, Showcase Audio, San Jose, California

"Tascam has a full line that fits into just about any budget under \$10,000. They've also got the Studio 8, an all-in-one 8-track with mixer that would be a good basis for putting together a studio in the \$5,000 to \$6,000 range. The Akai MG1212 also sells well—it's a lot of tracks for the money. You can get that for under \$7,000 and still have \$3,000 left for everything else in a \$10,000 studio package.

"The three main pieces of outboard gear to consider are a digital reverb, a digital delay, and a compressor/limiter. Yamaha and Roland delays and reverbs are good. We sell a lot of dbx limiters—it's a name people trust and are familiar with, but the Yamaha GC2020 compressor/limiter also fits into the low-end home recording situation.

"We get a lot of people walking in who say they plan to use their home stereo speakers for monitoring, and educating them gets to be a challenge. I always suggest getting some good near-field monitors, and we sell a lot of JBL and Fostex."

Elliot Rubison, Thoroughbred Music, Tampa, Florida

"I've got two 8-track studio packages that are popular here: one has a Tascam Model 32 2-track, Tascam M30 console, E-V Sentry monitors, Hafler amp, dbx 160x, Roland SRV-2000, AKG 414 mic, Audio-Technica ATM31 mic, Symetrix SE-400 stereo parametric, and an eight channel multi-track snake. The other package has a Fostex 80, Fostex 20 2-track, Fostex 450 mixer, Hafler amp, JBL 4312s, Lexicon PCM60, Sennheiser 421 mic, Shure SM81 condenser mic, Symetrix SE-400 stereo parametric, and an eight channel snake.

"A lot of people don't realize they can't use their stereo speakers: they need good studio monitors with a flatter response. Another problem is using sound reinforcement power amps with

BANANAS IN TAHOE

(A true story)



**It's a
little more
than 200 miles**

...from Hallmark Recording in South Lake Tahoe to Bananas At Large in San Rafael, but those who know Bananas also know that we've never let time and space get between us and our clients. That's why Steve Hallmark called us for his first eight-track demo studio, and once again when he decided to move up to a full blown 24-track installation.

Like a growing number of engineer/producers Steve decided to equip his studio with MIDI software and instruments and an Emulator II digital sampling synth, as well as a large array of more traditional outboard gear. The MIDI/SMPTE sync capabilities make things easier and faster for his clients, and give his recordings that extra edge that you can only



LAKE TAHOE, A NICE PLACE

get by going direct to two-track.

Of course all of this MIDIified recording requires lots of inputs in mix-down, so Steve selected a Soundcraft 2400 longframe console which gives him 52 equalized line inputs in mixdown. After considering a number of 24-track recorders Steve settled on a new Soundcraft SCM-76; Mark III machine because of the ease of interface. The prewired Soundcraft interface cables made getting the studio up and running a snap and the extra sync head output provided an additional cue mix as well as a great controller for gates. Dollars for dBs it's a great machine.

Brent Hurtig, Bananas Technical Sales director, oversaw every phase of Steve's upgrade. He provided the basic information needed for product selection, recommended MIDI software & hardware that would enhance Steve's recording setup, and flew up to Lake Tahoe to assure that the final installation went smoothly.

Moral of the Story I

If you want to concentrate on a recording project there is a place in the mountains, miles



STEVE'S STUDIO, A NICE PLACE

from the work-a-day world that has all the tools of the trade plus that little extra magic that's Lake Tahoe.

Moral of the Story II

The audio dealer down the street might as well be a million miles away if he's not taking care of you, but the people at Bananas are *always* just around the corner.

**Get serious,
go bananas.**



Hallmark
RECORDING &
PRODUCTION
(916) 577-4073

BANANAS AT LARGE

Audio/Musical Co.
802 Fourth Street, San Rafael, CA 94122
415-457-7600
Circle #022 on Reader Service Card

loud fans and mechanical noises. Interfacing is yet another problem, especially with -10 and +4 gear—that's one reason why we keep similar manufacturers together, with Tascam packages, Fostex packages, and Otari packages with their 8- and 2-tracks in the \$15,000 studio range."

Jim Hovey, Victor's Pro Audio, Ridgewood, New Jersey

"Our average sale is a bit more than \$10,000: we sell quite a few studios in the \$12,000 range. For \$10,000, I'd recommend an Otari Mk III-8: it's a real workhorse and once it goes out the door, the only other time I see the customer again is for tape—it's super-dependable. A board that really fits into that price range is the Soundcraft 200B, and someone on a tight budget could short-load it. Since it's a modular board, you could start with 12 inputs and expand into it. It's a great little board—a super-clean, no frills board.

"Another thing to look into would be one of the incredibly-priced reverbs out now—possibly squeezing the Lexicon PCM70 into a studio of that caliber—it's a fantastic effects processor. After getting a good reverb, most people start getting some good gates—Kepex or Drawmers—but it depends on the needs of the studio. Once they have the bas-



Otari MX5050 Mark III/8 1/2-inch 8-track

— HEADPHONE SALE —



K240M ONLY

\$65.00 ea.

Suggested List \$99.00

beyerdynamic



DT-220 ONLY

\$55.00 ea.

Suggested List \$75.00

LIMITED TIME LIMITED SUPPLY

Remodeling Sale In Progress
Call for Complete List of Specials

- SALES • SERVICE • DESIGN • INSTALLATION

**Milwaukee
(414) 785-9166**



**Chicago
(312) 549-4824**

2323C BLUEMOUND ROAD WAUKESHA, WISCONSIN 53186

Circle #023 on Reader Service Card

ics, they may go to a Lexicon PCM95 delay, an Orban parametric, or an Aphex Aural Exciter. I also recommend getting one good mic: the AKG C414, or a Neumann TLM170, U87 or U89.

"A large percentage of the \$10,000 studios are bypassing the 2-track stage and mastering directly to cassettes, or are borrowing a Tascam 32 or Otari 5050B from other friends who have home studios. I'm fond of the 5050B, but I sell more of the Mark III-2s—people like the overbridge format, but the other nice feature is it's easier to lock up for SMPTE work. For the extra \$500 the MkIII costs, three to one customers are choosing it.

"The other end of the \$10,000 studio market is the customer that wants to fill his walls with signal processing, and for them the Fostex systems are really popular, going with the Fostex 80 and 20, and the Ramsa 8210A—a board I've had real good luck with. Then they could afford a digital delay, digital reverb, a couple of good mikes and some external sequencing."

John Wise, Wise Music, Florissant, Missouri

"Basically, the \$10,000 and under studio is the market we primarily sell to. In that range, Tascam is pretty much the way to go, although the Akai MG1212 is making a lot of headway, because you've got 12 tracks, noise suppression, and computer busing built-in: it's a nice package. It's possible with the MG1212, a set of good monitors, and some rack gear, to put together a very decent, respectable studio for ten grand. The Fostex gear goes mainly to the under-\$6,000 studios, although their monitors are even going to studios in the \$30,000 to \$40,000 range. I strongly recommend their monitoring gear.

"In terms of outboard gear, the Aphex units are doing well, as are the ART, with their DR1 for the better studios and the DR2a at \$795. We sell a lot of Orban compression to the higher end studios, while dbx has the under-\$500 compressor market locked up. There have been some wild-card entries, like the Korg SDD-2000 MIDI delay, which has been really hot with studios: it's MIDI programmable—64 memory, and it does a little sampling act too, at an under-\$500 price range. The single hottest piece of gear for the upper-end studios is the Lexicon PCM70: it's going through the roof; we're moving as many as we can get.

"Allen & Heath have a console, the CMC-16, that is very strong. It's a bold step, a very innovative board, and a joy to work with. It's an understatement to look at, but after someone sits down with one here, it's gone. It's not 48-track or anything, but at about \$3,300, it's very good for the home studio." ■

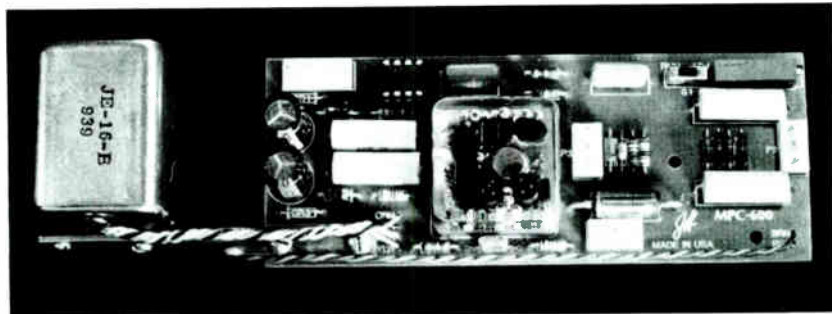
ATTENTION MCI 600 OWNERS:

Your mic-inputs will sound much better with the MPC-600 Mic-preamp card!

990 DISCRETE OP-AMP: Faster, quieter, more powerful and better sounding than the stock 5534. Performance that monolithic op-amps can't approach. The 990 is the best op-amp.

JENSEN JE-16-B MIC-INPUT TRANSFORMER: Better than transformerless because it eliminates input capacitors that degrade sound quality. Ultra-low distortion, ultra-high linearity and signal levels. If you thought transformers were a compromise, you haven't heard the JE-16-B! It significantly outperforms all other transformers.

SERVO CONTROL OF DC OFFSET ELIMINATES CAPACITORS: Coupling and gain-pot capacitors are eliminated along with their signal degradation, resulting in much better sound.



THE HARDY CO. □ P.O. BOX AA631 □ EVANSTON, IL 60204 USA
(312) 864-8060 □ TELEX 910 380 4670 ANSWERBACK JOHN HARDY CO.

Circle #024 on Reader Service Card

“ I've been building studios for twenty years. Though the technology has changed dramatically, my philosophy remains the same. Every studio must be a fully integrated system designed with the right sound for today and the right equipment for tomorrow. —Wes Dooley ”



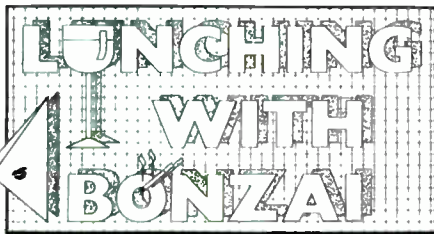
audio
engineering
associates

1029 North Allen Avenue
Pasadena, California 91104
818/798-9127, 213/684-4461



JAMES LEE STANLEY

Racing the Moon



by Mr. Bonzai

James Lee Stanley is a hardcore romantic. His life is his art, and his heart is his burden. For 15 years he's pushed it in Hollywood dives, he's lugged it to college concerts in Tucson and Milwaukee, he's opened up his chest to monstrous crowds as the "opener" on major national tours.

For those of you who've missed his sweet pain and sensitive, naughty raps in person, he's made an album that will bring tears of yuks, tappings of toes

and palpitations of feeling for your listening pleasure. The album, recorded live at that hip haunt, McCabe's in L.A., is hard to find—so stay tuned for details.

Bonzai: Did you always have a career in music in mind?

Stanley: Well, I started out early—performed while I was still in high school and had a recording contract when I was 14 with Frank Guida, who worked with Gary U.S. Bonds. I even started a 200 seat club in Virginia so I could get out of school early to work in "show business." Then I joined the Air Force and became a Chinese linguist. After that I started feeling that maybe I should stay at home and write music rather than go out on the road and suck the eggs. Living a life out of a suitcase can be rough and I don't see where being famous is any damn good anyway. Having money is more fun than being a celebrity.

But I make my living from performing. I have a Toyota with a quarter of a million miles on it from driving back and forth across the country. I stay with friends from Seattle to Miami and peddle my records wherever I go. I just got back from a three-date mini-tour and sold out my entire back seat warehouse at the first stop. I'm more pleased with this record than any before, and I'm real pleased that it's selling so well.

Bonzai: How have your records changed since your first album in '72?
Stanley: It's been cyclical. My first album was very acoustic and the lyrics were more cerebral than the following. You have to understand that when I first signed a deal, the company told me to make the music I wanted and it was their job to find an audience. This made perfect sense to me but when I gave them the record, they said, "Where's the hit?" I felt like I missed a chapter in the book. From that point I tried to make more commercial albums—music that was "instantly accessible."

I like to think that I make intelligent music. If you listen for awhile you'll notice the patterns, the textures—and once I've got you, you won't go away. In this culture, an artist rarely has the opportunity to be listened to in depth. People listen for a few seconds and if they get it—terrific! If not, they want something else. You have to listen to a symphony 500 times to really get it. When I started, I expected people to listen to my first album the way they listened to Beatles albums. I made what I thought was an interesting record—where there was a tambourine one time in a song—stuff like that. Time passed, the records evolved and I tried to make sure I could go on to make more records.

By the time I got to this live album I had come full circle. It's an album of me being me and I didn't really care if strangers would like it. I've been touring for 15 years and I have a pretty loyal audience. They have been asking for a record that was me, that had my comedy, and didn't have all that "stuff" on it.

Bonzai: Did you have a person in mind when you were making this record?

Stanley: Yes, to be honest with you, I had myself in mind. A record of me doing what I do best. None of my records have really done this, and not many people are making records like this. It used to be common—when I was growing up I had records from groups like The Limelighters and The Kingston Trio. They would play their music and talk to the audience. In popular music today, I can only think of one artist who really works with his audience—Bruce Springsteen, and even he has become stylized.

How to make a living as a recording engineer.

It's no wonder that being a successful recording engineer is so appealing. In the magic environment of the studio, today's top engineers make a very good living by knowing how to bring music to life.

If you're serious about becoming an engineer whose services are constantly in demand by the music industry, there's something you should know. More than ever

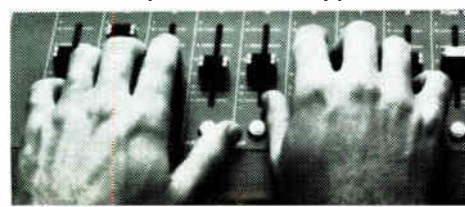
before, the hottest engineers will be those with the skills of both a technician *and* a musician. And now there's one place where you can develop your technical and musical awareness hand-in-hand—at the acclaimed Grove School of Music in Los Angeles.

Grove's new Recording Engineering Program is an intensive one-year course of study that gives you an exceptionally well-rounded approach to making music sound better. Grove instructors are working professionals based here in the entertainment capital of the world, where opportunities are at your doorstep in more studios and concert halls than you'll find anywhere else. Students from more than 30 countries have found the Grove School to be the most *practical* place to launch their music careers.

1. Meet the versatility challenge.

Every recording, mixing and sound reinforcement situation is different. That's why the Grove program gives you such a broad range of experience, getting you comfortable engineering everything from 5-piece rock bands to 18-piece big bands to 40-piece orchestras.

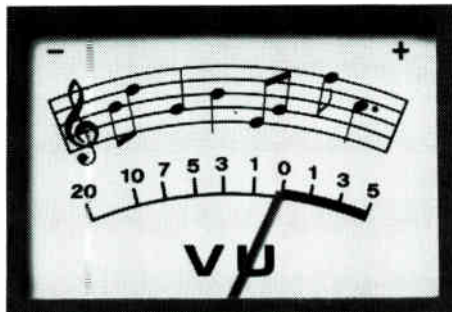
You'll work with a full spectrum of acoustic to electronic music, from Top 40 to film and television scores. And you'll learn sound reinforcement techniques for a wide variety of live music applications.



2. Get consistent hands-on experience.

There's no substitute for learning by doing. So you'll regularly have projects in Grove's two in-house studios, as well as taking advantage of the program's ongoing access to state-of-the-art 24-track facilities in the Los Angeles area.

To get the most from your time in the studio, you'll cover your technical bases with courses in acoustics, electronics, studio installation and equipment maintenance. You'll also learn studio management procedures to help prepare you for the business end.



3. Hear music through a musician's ears.

The most talented engineers are usually musicians as well. The Grove program is designed to insure that you'll *understand the music* you're recording, and that you'll be able to *effectively communicate* with musicians on their own terms. Grove's outstanding courses in eartraining,

harmony, sightreading and rhythm section arranging will result in some great advantages for you when you're behind the board.

4. Prepare for related opportunities.

Successful engineers often expand their careers into related fields like record production and music video. Grove offers professional workshops in both these areas, as well as many others ranging from Songwriting to Synthesizers to Drum Machine Programming. You can build these into a customized course of study, and we'll help you tailor a complete package to fit your personal career goals.

5. Get a competitive edge.

The Grove Engineering Program begins each January and July. You may qualify for financial aid. And if you're concerned about getting a college degree, our accredited courses can be part of your B.A. in Commercial Music through our affiliation with Laverne University.

So if you want to make a living as an engineer, we'll send you more information. Just send us the coupon below to see how you can get a competitive edge, or call us at (818) 985-0905.

Grove School of Music.

Mail coupon to: **Grove School of Music**
12754 Ventura Boulevard
Studio City, California 91604

Please Print:

Name _____

Street _____

City _____

State _____ Zip _____

Phone () _____

MX 1/86

I'd like to know more about the Recording Engineering Program.

I'd also like more information on the other programs checked below:

Songwriting Program

Synthesizer Program

General Musicianship Program

Vocal Program

Keyboard Program

Guitar Program

Bass Program

Percussion Program

Composing and Arranging Program

Film/Video Composition Program



Circle #026 on Reader Service Card

**IF YOU ARE LOOKING TO BUY
MUSICAL OR SOUND EQUIPMENT**

CALL FOR SAM ASH

**TOLL FREE: 1-800 4•S•A•M•A•S•H
(NY STATE 1-800-632-2322)
OR 1-718-347-7757**

Sam Ash has everything all musicians need, from playing to recording at *consistently low prices*. For over 61 years, if you want it you'll find it at **Sam Ash**.

SAM ASH MUSIC CORP.
124 Fulton Avenue Hempstead, N.Y. 11550

Circle #027 on Reader Service Card

Bonzai: That's inevitable when you're relating to 80,000 people.

Stanley: I guess you're right—a problem I haven't yet had to face. I enjoy talking to the audience and telling them how I got the song. And I'm delighted when they have fun with my archeology. I originally started rapping because I was in groups that had to tune onstage and I was compelled to overcome the boredom with entertainment. They laughed but I never thought of myself as a comedian. It's the music that interests me, but I just played Chicago and one of the biggest stations in the Midwest requested a copy of my album so they could play the comedy. What can I say?

Bonzai: You say quite a lot—at least a third of this record is "spoken word." How 'bout the songs—why did you choose this material?

Stanley: All the songs on the album are songs I love to sing. I wrote all but two of them, and I've been doing the Stephen Bishop song for 12 years. I just surrendered to myself, instead of to an anonymous producer, or label or radio station.

Bonzai: Why the short haircut?

Stanley: I had my head shaved because my hair was thinning. It got to the point where I couldn't pass my reflection in a window without checking to see if I could see my skull. I just said to myself, "C'mon—it's not your brain that's falling out, it's just your hair." I walked into a barber shop and asked for the close clippers. They wanted to give me a style job but I said I didn't want to talk about nice hair—I want to talk about little black dots.

Bonzai: What essence of your parents is in you?

Stanley: My mother is completely musical. She loved to sing and would actually do musicals for us at breakfast—"And now the pancakes!" Her father had a band and I remember trying to play along with him when I was about three years old. My father, on the other hand, reads a lot and writes a lot of poetry. He won my mother during the war with the beautiful letters he wrote. My father is a poet and my mother is a singer—I never thought about it before, but there you are.

Bonzai: What was your first record experience?

Stanley: Frank Sinatra. I grew up in a house in Philadelphia with four generations of Italians. Frank's voice was "*bel canto*."

Bonzai: Why do you play the guitar?
Stanley: Because it's mobile. When I

was growing up, everyone was playing the accordion and I didn't want to be bowlegged.

Bonzai: Who taught you to play?

Stanley: I guess I taught myself by playing along with records, but my Uncle Dick played the ukulele and taught me some chords. My grandfather played jazz guitar and I learned finger-picking from Milt Chapman, a bass player in a folk group. My upbringing was a mixture of Frank Sinatra, light jazz, and folk music. I never got Elvis and I still don't.

Bonzai: Who are some of your musical heroes?

Stanley: Dave Brubeck, The Beatles, Steely Dan, Little Feat—lately I like Phil Collins...

Bonzai: Who is your favorite human being?

Stanley: My sister, Pamela. She's just the most talented, loving person I know. She's younger than me but is older in a lot of ways.

Bonzai: Do you believe in magic?

Stanley: (laughs) In a young girl's heart? Yes, I believe in it a lot.

Bonzai: Who is the most amazing artist you've worked with?

Stanley: Ricky Scaggs. I'm not a bluegrass fan but I did a show in Santa Cruz with Emmylou Harris and Rickie was accompanying her. I was playing a Steely Dan song that took me forever to figure out—the relationship between the melody and the progression was a mystery at first—and Ricky came out with a fiddle and just sat in and played his ass off. I remember him saying with a down home drawl, "Hey, that's a good tune."

Bonzai: Do you have any advice for musicians about the music business?

Stanley: Play what you believe in and not in what you think they believe in.

Bonzai: Do you know any good business tricks?

Stanley: Carefully plan your album so that you go in with a reasonable amount of money to spend. When you finish, double that amount and sell it for that price. If the record company can't sell it, at least you've made a record and you're making a living. Actually, you should probably triple the figure and then come down to double the cost.

I can't believe what this record cost, though. This is my big artistic statement but I didn't plan on spending so much. I thought that I would reach a karmic state of grace by going for the highest quality and not expecting any recompense. We'll see...

If you want to make an anonymous hit record aiming for the radio, go right ahead. But if you want to be an artist, you have to make music for a long time—at least long enough to find your voice. And you have to be true to that voice. Some people with this approach are still with us—Van Morrison is still doing it, and Bruce Springsteen isn't doing so badly.

Bonzai: When did you discover your "voice"?

Stanley: When I put together my *Eclipse* album from material that was no longer available from my first three RCA albums. I discovered that I had a compo-

sitional and performance identity that was cohesive and consistent.

Bonzai: What is your most powerful tool of expression?

Stanley: There are two palettes for me to work with. I don't feel that I am a master of the guitar, but that I am a really good player. I think my most powerful tool is my voice.

Bonzai: What is the most important question that you can ask yourself?

Stanley: Could I be doing this a year from now, or five years from now, and be happy...?

—PAGE 48

AMERICA'S MOST
ADVANCED RENTALS

AUDIO AFFECTS

213/871-1104 818/980-4006
800/252-2010

SPECIAL FX

DIGITAL DELAYS
&
PITCH CHANGERS

AUDIO/VIDEO
TAPING/SYNCING

ANALOG 24 DIGITAL 32

COMPUTER
KEYBOARDS

MICROPHONES

DIGITAL
REVERBS

DRUMS

NOISE
REDUCTION

COMPRESSION

AUDIO AFFECTS

AMERICA'S MOST ADVANCED RENTALS
P.O. BOX 6327 BEVERLY HILLS, CA 90212

Circle #028 on Reader Service Card

—FROM PAGE 47

Bonzai: Do you have an image of what you were in the past?

Stanley: I don't seem to be preoccupied with questions of prior existence or purpose. That question is perplexing to consider. For example, if I am in Cleveland waiting for a plane that's six hours late, I will enjoy the situation. I'll talk to people, I'll take a cab downtown and have a meal. Whatever I am doing in the present is enjoyable to me.

Bonzai: I think the truest test is waiting in line at the post office.

Stanley: Well, you can always enjoy the assortment of people who gather there, or you can experience the incredible energy-zapper. I wish that my summers would go as slowly as time at the post office. I think they must give the clerks a special test and their energy must be below a certain level. If the world runs at 78 RPMs, the post office is running at 16. If the Catholics want to know where purgatory is, send them to the Hollywood station on Wilcox. I spent some time there the other day mailing out 150 records that were ordered in advance.

To think that many people ordered an imaginary record astounds me. I just

sent out a letter to my mailing list when I was months away from having a record and the response was startling. It was terrific—it filled me with purpose.

Bonzai: Can you explain gentleness?

Stanley: There's a French word, "doucement," that describes for me the way you can make the guitar ring. A lot of musicians aggressively attack the guitar, but there is a special way of barely touching the strings and the notes just ring...

Bonzai: If we had 25 hours in a day, how would you spend that extra hour?

Stanley: If I had an extra hour, I hope I would use it for making love...

Bonzai: What is the most dangerous situation you've ever found yourself in?

Stanley: I was walking down the street at three o'clock in the morning somewhere north of Kittyhawk, North Carolina, with a friend of mine. I had just played the Folk Room-a-Go-Go—no shit. It was 1963, and the headlining act was a juke box. Would you like to talk about paying dues?

Anyhow, we had driven from the gig in one of those old VWs that didn't have a gas gauge—you had to flip a lever with your foot to turn on the reserve

tank. We had already done that, so we were definitely in trouble. We also probably had the only marijuana on the East Coast at the time. It was very dark, overcast, and no moon. We didn't know where we were, so we sputtered to a stop and pushed the car off the road into what we thought was a secluded little glade. There were three of us, and we left Milton, who taught me how to finger-pick, in the car. He fell asleep with a shoebox of dope in his lap.

We took off walking down the road and a car passed us, whipped down a sidestreet and reappeared. I turned to Richard and suggested we might be in trouble. The good ol' boys were coming. The car pulled up beside us, the doors flew open and out came such a collection of thundernecks—these guys couldn't land a role in *Deliverance* because they were too scary. These were genetic fuck-ups from generations back—they should have drained the gene pool.

They jumped towards us and I turned toward Richard but he was already a mile-and-a-half down the road. I just said to them, "Let's discuss this like rational adults. I have no axe to grind with you people." They stopped and one of them said, "huh—what?" I did a solid ten minutes on them and when I got to

Why do Jensen Transformers have Clearer Midrange and Top End?

The high frequency rolloff of a *Jensen Transformer* is optimized, by computer analysis, to fit the *Bessel Low Pass Filter* response. This means *minimum overshoot and ringing* and *flat group delay* for best *time alignment* of all spectral components of the musical waveform.

In other words, the harmonics arrive at the same time as the fundamental frequency.

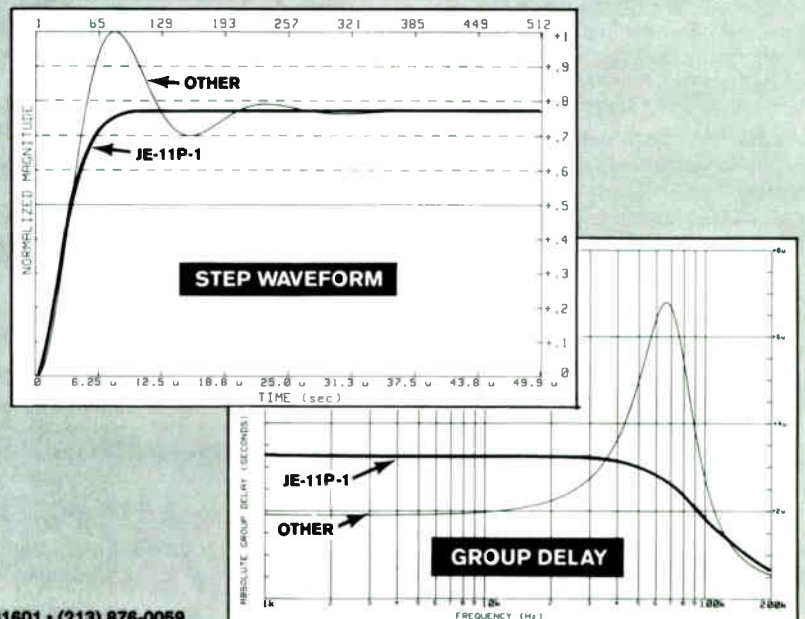
The result is a clear midrange and top end without the harsh, edgy sound which has been one of the most objectionable sonic complaints about transformers.

There's no "midrange smear."

Only *Jensen* has this benefit of hi-tech computer optimization.

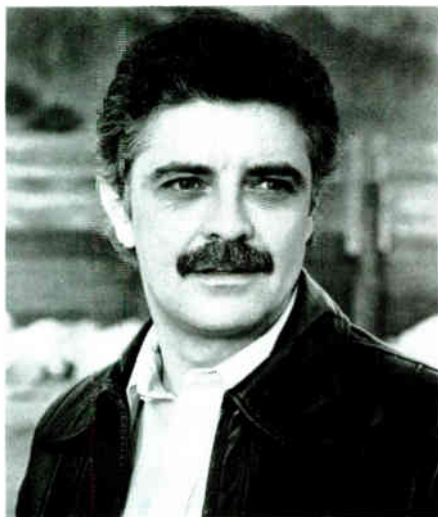
Visitors by appointment only. Closed Fridays.

10735 BURBANK BOULEVARD • NORTH HOLLYWOOD, CA 91601 • (213) 876-0059



jensen transformers
INCORPORATED

Circle #029 on Reader Service Card



BRYSTON

BROADCAST PHONO PREAMPLIFIER

REQUIREMENTS

- Musicality
- Serviceability
- Low Distortion
- Balanced XLR Outputs
- 27dBm RMS 600 ohms balanced
- Cartridge load adjustment
- High Overload Threshold
- Linear Frequency Response
- Reliability
- Low Noise
- 1 Space Rack Mountable
- Accurate RIAA ($\pm .05$ dB)
- 21dBm RMS 600 ohms unbalanced
- Non-reactive Phono Stage
- Fully Discrete Gain Blocks
- Drive Loads as low as 300 ohms

SOLUTION



BRYSTON BP-1

(BP-5 also available with 3 switchable high level inputs)

In the United States:

 VERMONT
RFD #4, Berlin, Montpelier, Vermont 05602
(802) 223-6159

In Canada:

 MARKETING LTD.
57 Westmore Dr., Rexdale, Ontario, Canada M9V 3Y6
(416) 746-0300

Circle #030 on Reader Service Card

the part of running out of gas they just offered to help. We caught up with Richard and all drove to a gas station—they even left the deposit on the can.

When we got back to the VW, there were six patrol cars with flashing lights. Our new redneck friends dropped us off a block away. It turned out that we had pushed the car onto the mayor's lawn and he had called the police. Walking up to the cops was the scariest moment of my life—I thought I was going to be killed. But they had no knowledge of marijuana and there was absolutely no problem—except that Milton had poured all the dope into his pants.

Bonzai: Thinking back again to the early days—what did you think when you discovered puberty?

Stanley: When I was 14 I was introduced to the world of sex. Up until that time I had straight A's in school—an older woman of 16 showed me those gates, and it took five years and ten high schools to graduate. All the blood ran to my pants. I remember she was wearing a wraparound skirt and we went to the drive-in. She drove. It was the most wonderful 12 seconds of my life—actually, I'm bragging—it was only 11 seconds.

Bonzai: What old saying do you hate the most?

Stanley: "You can't have your cake and eat it, too." What good is the cake if you can't eat it, too?

Bonzai: You awake in the morning—there is a beautiful view. What do you see?

Stanley: The person I love—that's the view I like the best. All the others come after that.

Bonzai: Is there anything from your childhood that is still with you?

Stanley: Is there anything from our childhood that isn't still with us? ■

studio consultants, inc.

321 West 44th Street, New York, NY 10036 (212) 586-7376

A wide range of equipment and services for professional audio facilities and broadcasters

We offer the products of a small number of quality-conscious manufacturers, design systems and studios, and provide extensive technical support both before and after sales.

- **Bryston**—Superb, reliable power amplifiers from 50W/channel stereo to 800W bridged mono, with balanced inputs, modular channel electronics, and dual independent power supplies. Professional preamps also.
- **API**—Classic audio module designs, including the 560A graphic and the all-discrete 550A three-knob program equalizers. Powered racks for these and other components.
- **White**—Equalizers and crossovers, active and passive, including third and sixth octave room EQ.
- **Westlake**—High-quality monitor speakers, large and small.
- **Fostex**—Phase-coherent coaxial reference monitor speakers.
- **Audio Digital**—Digital delay and effects, including the TC-3 Pre-Delay.
- **Ursa Major**—Digital reverb and signal processing, including the new MSP-126, which synthesizes a rich, convincing stereo image with excellent mono compatibility and **no coloration**. Seven other delay-based effects programs as well.
- **Audio Kinetics**—Versatile, intelligent Q-LOCK audio/video synchronizer systems.

—and other fine products.

Circle #031 on Reader Service Card

THE CHANGING FACE OF BAY AREA RADIO

by Linda Jacobson

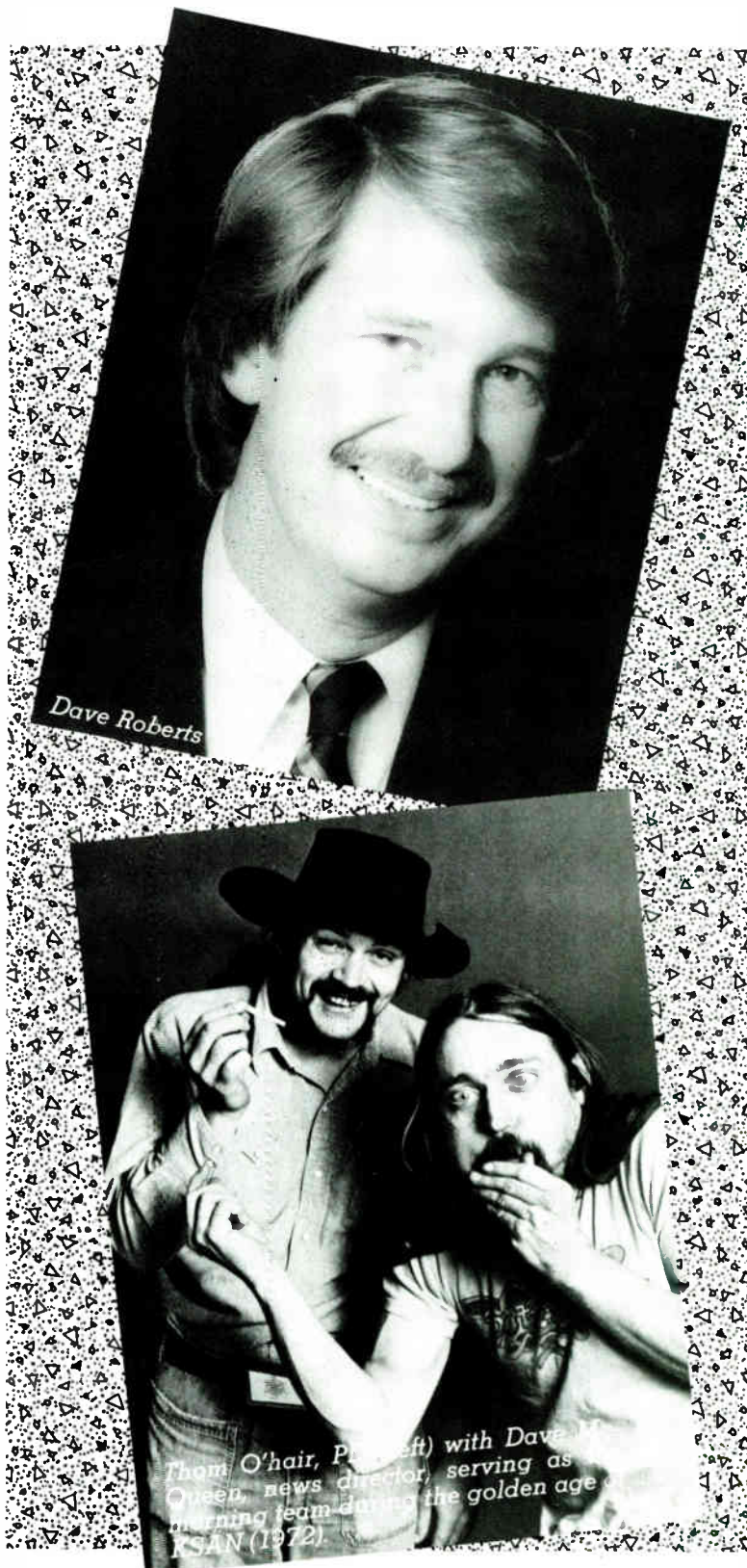
Twist and turn, turn and twist—the radio dial, that is. Drive around the San Francisco Bay Area, and you can't go ten miles or twist that dial a quarter-inch without hearing the Starship declaring "We built this city on rock and roll!" Radio here is indication of that statement's truth. San Francisco residents have their choice of five—count 'em, *five*—solid rock radio stations: the Rocker (KRQR), the Camel (KMEL), K-fog (KFOG). They used to have the Quake (KQAK), but that collapsed a few months ago, and the City (KKCY) rose in its place. There's progressive rock originating from the local college campuses: KUSF, KALX, and KFJC. Then there's the soft rock and pop rock stations, not to mention all the contemporary music stations that don't transmit from San Fran; there's one in San Rafael, and three in San Jose. From San Francisco, you can hear them all, as long as Twin Peaks, Russian and Nob Hills, and Pacific Heights aren't in the way.

The Bay Area: a spawning ground of rock, pop, and new wave; the bands of Jerry Garcia, Steve Miller, Grace Slick, Huey Lewis, Jello Biafra, Debora Iyall... Home of the first successful FM rock station, KSAN... Home of the first stereo FM broadcast, and the first quadrophonic broadcast... Home of the national radio trade mag, the *Gavin Report*.

The following paragraphs contain the views of three leaders in Bay Area radio, each representing a different faction of the business. As you'll see, they voice strong—and sometimes opposing—feelings about how contemporary music is treated on Bay Area airwaves.

Dave Roberts

Dave Roberts, who's equipped with a PhD in communication research, has worn a few hats in the radio business. He's been both a PD (program director) and DJ in AOR (album oriented rock), AC (adult contemporary), and CHR (contemporary hit radio/top 40). He's sat in several times for Casey Kasem on *American Top 40*. Since 1980, Dave's hosted the RKO network's *Hot Ones*, an interview show with top artists, and he was the program director of San Francisco's KRQR, from 1982 until 1984. Now Roberts is in business for himself, work-



Dave Roberts

Thom O'hair, PD (left) with Dave Roberts, news director, serving as morning team during the golden age of KSAN (1972).

dbx

Stand up and be counted.


If you think you can't afford a dbx compressor/limiter, think again.

With the 166 now you can.

Total dynamics control in a brand new product from dbx, the world's number one manufacturer of professional processors.



dbx PO Box 100C, 71 Chapel Street,
Newton, Mass. 02195 USA.
World Radio History



**THE
FOREFRONT
OF NEW
TECHNOLOGY**

IN STOCK FOR IMMEDIATE SHIPMENT

AKG	Fostex	Oberheim	Simmons
Aphex	Hill	Otari	Soundcraft
A-T	JBL	QSC	Symetrix
Countryman	Klark	Ramsa	Technics
Crown	Teknik	Rane	Turbosound
dbx	Lexicon	Roland	UREI
Emulator	Linn	Sennheiser	

MAIL ORDER
WORLDWIDE

**THOROUGHbred
MUSIC**
2204 East Hillsborough Ave
Tampa, FL 33610
(813) 237-5597

Circle #032 on Reader Service Card

**ALTERNATE
SOUNDS for the LINNDRUM**

- 100 Sound Library
- Acoustic & Synth drums
- Hi-Hat, Ride, Crash & Spash Cymbals
- Percussion & Sound Effects
- Sounds start at \$25.00
- Custom Chips

*Demo Cassette \$3.00
(can be applied toward 1st order)*

MasterCard & Visa Accepted



dot digital
sound
technologies

301 East Farris Avenue
High Point, NC 27262
(919) 882-1368

Circle #033 on Reader Service Card

ing as a radio research consultant.

"What you really need in order to make a success of a radio station is a mass audience. A PD knows what kind of sound he wants from his station based on what he knows about his format and audience. The music industry can say, 'That's ridiculous, who are you to say something doesn't belong on the radio station?' But the PD is on the front line, along with the music director, of making the radio station a mass appeal product.

"The mass audience is unsophisticated. I don't mean that negatively. In the kind of research I do, we actually interview people who listen to KRQR, KFOG, and the City—this type of research, instead of the ratings, is qualitative as opposed to quantitative. Most people don't name more than three of their favorite artists, and they're always in the top ten. So they're not going to miss new acts [if they're not played].

"We're in the fourth or fifth largest market where a PD is going to say, 'Since I'm in a major market and since this is a highly competitive situation, I'm going to watch smaller markets where they're more willing to take a chance,' and that's exactly what a *Gavin Report* is for, or *Radio & Records*.

"Radio used to be a mass appeal thing; there were very few radio stations. With the onslaught of television in the '50s, radio had to do as magazines did. Radio was like *Look* or *Life* magazine, offering many things to many different people. What happened to *Look* and *Life* is what happened to radio. *Look* and *Life* went away, but the magazine business has never been healthier—because it said, 'We'll do *Field and Stream* and sell lots of products.' The magazines became specialized and they reached a target audience. Radio did the same thing. Everyone became narrowcasters, as opposed to broadcasters.

"We used to talk about 'progressive rock,' which was only found on the FM band. That takes you back to the days of KPCC-FM in Pasadena, and the early days of KSAN. Back in those days, only on FM could you get away with playing no commercials and an entire album, because the FM band had not been popularized yet. Then, as we moved into the '70s and '80s, we had greater competition. The FM band became popularized and we had many more radio stations. There was a need to become even more specialized. We had CHR and AC, and then we had AOR. We had stations representing country, top 40, AC, album rock, which is now splitting off. All these are on the FM band, competing for an audience.

"If you're in a major market, like the Bay Area, you've got more competition, so you can't afford to take a lot of chances. When we signed on at KRQR in

1982, we carved out our niche—straight-ahead rock and roll; we weren't going to play a lot of the pop cuts which the only other major rock station at that time, KMEL, was playing. So when Romeo Void or Bonnie Hayes & the Wild Combo, or even, at first, Flock of Seagulls, came out, we said we weren't going to play this, this is not what our audience expects when they come to us.

"You know for a fact that your audience is coming to you for a familiar, consistent product. And when we say familiar, there's a whole range of variance there. If they're *too* familiar, all you would hear is Journey, Foreigner, Boston, Kansas, Huey. So what you do is add texture to your radio station by adding cuts from the roots of rock, or ones that were three cuts in on an album from ten years ago.

"The Rocker has a weekly show called the 'Best of the Clubs,' and a local act can get exposure on that. People who are interested in hearing some new stuff will go there. Keep in mind that a quasi-jazz group or world-beat group with an African beat, something totally esoteric, won't get on that show. Those world-beat groups would like to get on that show, because they want to become mass appeal, but once they become mass appeal they're no longer cultish and hip. And the people who are into cultish groups will move onto another one.

"Four or five years ago, Huey Lewis couldn't get *arrested* on most Bay Area radio stations. It took awhile for him to catch on. For years you couldn't find that garage-band, early rock-type sound on the radio. At KRQR, we were among the first to play Huey's second album, long before he became mass appeal, but that's because he was known in this market. He paid his club dues, and we felt comfortable featuring him. He had good promotion, perseverance, and played some good opening shows.

"There's always a very vocal force in any marketplace, particularly here because so much music has been born here, that says good music is not being heard. I challenge that because it is getting heard, where that small core can hear it, on college stations that are able to be adventuresome.

"If we all said, 'I'm sorry, I've got to play this because it's good music and I'm not going to go with the flow,' if every PD did that, every station would sound the same, and unfamiliar, and there would be no value to 'making it.' There's got to be those finicky outlets that only play mass appeal within a certain range, because they define success."

Thom O'hair

Thom O'hair, one of San Francisco radio's true mavericks, programmed the pioneer FM rock station, KSAN, from

1970 to 1974. Today, KSAN is a country music station which collected a 3.2 in the last *Radio & Records* Ratings Report. Compare that to the number one station, news and personality radio station KGO, which scored a 7.8. The only rock station that came in higher than KSAN was the Camel (coincidentally, O'hair also programmed KMEL's start-up), with a 3.4.

Today, Thom is the marketing director of Rip 'n Read, a feature published five days a week, written in radio script format, that goes out to stations all over the country.

The success of KSAN in the early '70s led to the birth of countless new FM stations that played cuts from rock albums, as opposed to hit singles. But free-form radio, where the DJ was the person who defined the station's existence, became a lost art. Money, not music, was what mattered. Says Thom, "Radio is like real estate today. People are buying stations for 60 or 70 G, then turning around and selling them for six-digit sums.

"It used to be the music that gave a station its identity. Now, the morning personality is the cornerstone. Commercial-free radio is an old warhorse. There just isn't anything going on like it used to be. Look what happened to the Quake; it tried to play new, exciting stuff, includ-

ing local bands, but their morning sign-on, the talk show, the part that gets people listening, had negativity as its foundation."

When Thom was the PD at KSAN, "local acts could get airplay, yes, but there were musical qualifications. The road was not without its circuitous routes. But compared to anything else today, as well as then, it was wide open. In fact, in 1972 or '73, the Pointer Sisters cut a demo tape, the one that got them noticed by David Rubinson, in our production studio at KSAN. Then we did a 'Texas' weekend where the Pointer Sisters got to jam and they did scat-singing that made everyone in the room go 'Whoa! This is serious!'

"Today San Francisco is media chauvinist to the max. There was a point back in the time of the old KSAN where everything happened at once, everything blossomed, not only with the radio, but the groups, the record companies, the ballroom presentations and festivals, etcetera. San Francisco is probably recognized as a center of the FM revolution, sharing that co-existence with New York and Cleveland. But today, the San Francisco sound, or the San Francisco media experience, is like the prodigal son. Everybody's sitting around the family dinner table waiting for him to come back."

Of AOR radio in the Bay Area, Thom

says: "If it walks like a duck, quacks like a duck, and looks like a duck, it better well be a duck. And they're walking like a duck with some of the music they're playing, and they're quacking like a duck with some of the people that they have on the air and some of what they're allowed to say, and they're looking like a duck by constantly referring back to KSAN either with the music imprints, or with the interviews. . . but they're not a duck, they're a chicken. What keeps them from being a duck is media and regional chauvinism. The people who were listening to that experience back in the KSAN days recognize that it's not a duck. They're aware of the manipulation that's going on, that this is a yuppified thing."

These days, Thom is enthusiastic about the concept of non-format pirate radio. That, and college radio. He names KUSF as one of the rare examples of exciting, experimental, modern-day radio.

Augie Blume

Augie Blume, of Augie Blume & Associates, deals with promotion and marketing for independent artists and small record companies. The company recently published the *1985 California Music Directory*, Northern California edition, and is preparing for the Southern California edition's release. Augie now main-

Only Swintek GIVES YOU A CHOICE in wireless microphone systems

- Choice of mics—Beyer M500, Shure SM57, SM58, SM78, SM85
- Choice of finishes—chrome, black chrome or gold
- Integral antenna or rubber duckie
- Systems for hand held mics, lavalier mics, electric instruments or ENG/EFP/LPTV

Unsurpassed field-proven reliability assures the high audio quality that professionals demand. VHF high band and narrow RF signal bandwidth permit numerous systems to be simultaneously used on nearby frequencies without interference or receiver desensitizing by local TV or radio broadcast signals. All metal construction assures durability and RF shielding. dB-S compressors permit wide dynamic range without unnatural compression. Swintek—the proven performers.

alan gordon enterprises inc.

1430 Cahuenga Blvd.
Hollywood, Ca. 90078
(213) 466-3561

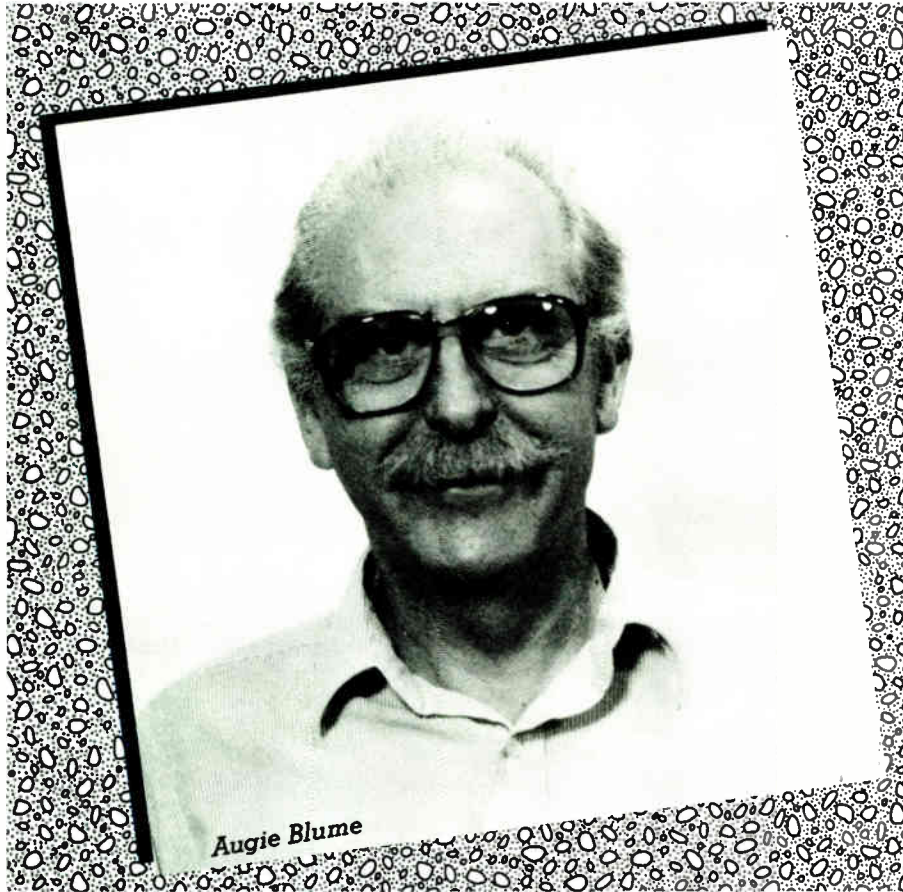


Circle #034 on Reader Service Card

tains a wide variety of music business-related databases on computer.

"I track 4,400 stations, all that would be considered musically meaningful," he says. "If someone called me up and

ple were a lot more accessible. In many cases, you'd walk in, identify yourself, and go right on back into the studio. While another record was playing, the DJ would cue up the record you were



said, 'I need a list of all the top 40/CHR stations that report to *Radio & Records*,' I could slice them out immediately. I keep track of changes in call letters, formats, music or program directors. I have a database of record company execs, promoters, distributors, and self-employed A&R people. Also, as a consultant, I help singer/songwriters focus on reality, giving them evaluation and guidance.

"For 26 years I've done record promotion on the regional and national level. I went to work for RCA in 1959; I did regional record promotion in the Baltimore/Washington/Virginia area. As a promoter, my priorities were servicing the market and going on the road, driving from radio station to radio station.

"At that time they didn't have what they call 'format specialists.' There were no specific album-oriented stations or promoters in the sense there are today. There was a helter-skelter of pop formats with slightly varying focuses. Individual announcers had the freedom to pick their own music within the format of the station, and they were not so nearly formatted as they are now. Radio peo-

ple were a lot more accessible. In many cases, you'd walk in, identify yourself, and go right on back into the studio. While another record was playing, the DJ would cue up the record you were pushing, and if he thought it had something going for it, it would be the next tune up. Most of the radio people at the time were really into music. Today, too many radio people see a record in terms of its potential to be entertainment business, as opposed to a song or musical form.

"In 1962, RCA transferred me to the Chicago region, where I was working the entire upper Midwest. In '68 I was transferred to NY, where I became the head of national promotion. At times, there were too many releases to work on, some of them of inferior quality, but nonetheless we had to promote them to give the company, and the artist, an opportunity to get some feedback.

"In '70 I left RCA to come out to California and work with Jefferson Airplane; I was in charge of national promotion. Then in 1973, I left to form our promotion company. We've had every major label for an account, and also worked for smaller labels. If we didn't think we could truly get behind the record, or if it didn't have some chance out there, we would try to convey that to the record company.

"I'm working myself out of the promotional field, because record promotion today is a far cry from what it used to be. There are some unsavory elements in the business, mostly in the independent record promotion area. Sleazoids. There are some unsavory elements in the record industry, and there are some unsavory elements in radio. And it takes three to tango... not everyone is unethical, but this has changed the way records get played.

"A lot of pop/rock-oriented radio programming is conceived by answering the question, 'What can we sell? Who's our target audience?' Station managers and owners go above the program director. They see the audience as stupid sheep, and that's one of the big problems radio faces. Stations play four, five, six tunes with no announcements in between, no names of songs or artists, and the DJ isn't allowed to say anything. So who's playing the song? This *must* affect record sales.

"At most commercial radio stations, 60 percent of what they play are oldies, hits of the past, plus what are called recurrenents, hits of the recent past. Forty percent, or less, is current music. There's a lot of good music that never gets a chance for airplay. There's an old cartoon that shows a bird sitting on a branch, and the bird is saying 'What if all the tunes in the forest came from the top 10 birds?'

"Essentially, the major market commercial stations, stations that report to the trade publications, and the smaller markets, look to the major labels. There are six major corporations—CBS, Warner-Electra-Atlantic, Capitol/EMI, MCA (which covers Motown), RCA (which now encompasses Arista and A&M), and Polygram/Mercury—all of whom manufacture, distribute, and promote about 100 labels. The commercially oriented radio stations look to these 100 labels for their product, because they know that those six corporations will push those records they're releasing on a national level. So the commercial stations are not as open as they could or should be to locally produced or regionally oriented product.

"The radio industry and the record industry have a symbiotic relationship; it's you scratch my back and I'll scratch yours. What the record company wants is radio stations that will add their record to their playlist and then report it to the trades, making it a hit before it even sells in the stores. If the major companies have something that appears to be commercially successful, the radio station that plays that record is going to get the advertising time buy from the store that carries that record, or they'll get the time buy from the local promoter when the band comes into town to

Ramsa™ just pulled the plug on your patchwork.

The Ramsa 8-Group Recording Consoles with program mix control.

Why struggle with wires and plugs, when Ramsa lets you go from record to mixdown by just adjusting a few switches. Both the Ramsa WR-T820 and WR-T812 have an eight-group output section. To give you control over each

track, through each phase of production. With minimal repatching.

The exclusive program mix control allows you to mix both tape and live tracks simultaneously. Effectively increasing the number of inputs for overdubbing.

You can also record and overdub through the eight-group output section, or go directly out from the input modules. And on the WR-T820, the eight-group output sections have two outs. So it literally functions as a 16-out console for 16-track recording.

Both boards have separate inputs for mike, line and tape.

To let you mix any vocal, instrument or tape track you want.

And if you need to isolate any part of the mix, just hit the stereo-in-place solo switch. And the tracks you want will come up in stereo.

You'll also find that both consoles have a powerful three-band EQ with sweepable frequency to give you greater precision.

And to help you keep an eye on everything, you've got the option of combination LED and VU meter bridges so you can monitor all inputs and outputs.

So if you'd rather spend more time making music and less time making patches, discover the recording consoles that'll make the most of your time. And your money. The Ramsa WR-T820 and WR-T812.



Program Mix Control



Pushbutton Input Selection



Please send me more information about the Ramsa™ WR-T820 and WR-T812.

Name _____ PLEASE PRINT

Company _____

Address _____

City _____ State _____ Zip _____

Phone (_____) _____

Return Coupon To: Panasonic Industrial Company, Communications Division, One Panasonic Way, Secaucus, New Jersey 07094.

MX

Panasonic
Industrial Company

See us at NAMM Booth 1330

★EASTCOAST SOUND

40 MAIN STREET, DANBURY CT 06810

(203) 748-2799

**WE SERVICE WHAT WE SELL
WE SHIP SAME DAY!!**

*Huge Selections of PA Systems,
Tape Recorders And A Large
Used Equipment Department*

*Get A Used Piece Of Equipment
And Save Big!*

**HUGE KEYBOARD DISPLAY
LIBERAL TRADE-IN POLICY**

EMU	SYNERGY	CRUMAR
OBERHEIM	PASSPORT	MOOG
SEQUENTIAL	DIGIDRUMS	KORG
ROLAND	BIT ONE	SIEL

MAIL THIS COUPON TO GET ON OUR MAILING LIST AND
RECEIVE A LISTING OF USED EQUIPMENT EVERY TWO MONTHS

NAME _____

ADDRESS _____

CITY _____ STATE _____ ZIP _____

In A/B tests, this tiny condenser microphone equals any world-class professional microphone. Any size, any price.

Compare the Isomax II to any other microphone. Even though it measures only $5/15"$ x $5/8"$ and costs just \$189.95,* it equals any world-class microphone in signal purity.

And Isomax goes where other microphones cannot: Under guitar strings near the bridge, inside drums, inside pianos, clipped to horns and woodwinds, taped to amplifiers (up to 150 dB sound level!). Isomax opens up a whole new world of miking techniques — far too many to mention here. We've prepared information sheets on this subject which we will be happy to send to you free upon request. We'll also send an Isomax brochure with complete specifications.

Call or write today.

* Pro net price for Omnidirectional, Cardioid, Hypercardioid, and Bidirectional models.



COUNTRYMAN ASSOCIATES INC.
417 Stanford Ave., Redwood City, CA 94063 • (415) 364-9988
Canadian Distributor: Gerr Audio, 363 Adelaide Street, Toronto, Ont. M5A 1N3



play. The radio stations are being spoon-fed music."

There are exceptions to every rule, and in this case Blume names one: San Francisco's Howie Klein, a KUSF DJ, local producer, and founder of 415 Records, the label that introduced America to Romeo Void, Translator and Wire Train. Klein, says Augie, is a "very bright guy, a real street-oriented person who hit the clubs and found artists with commercial and artistic value, started a record label, then went with his music to the larger commercial stations. None of them would give him the time of day. So he had to concentrate on different areas: having working bands, which is the best possible promotion, and college radio, which was very supportive of him and his music, and he worked the press. I heard that he had sold 40,000 records in the greater Bay Area in roughly one-and-a-half years. So Columbia Records became aware of him, and worked out a distribution deal with him. Because of his distribution arrangement, his records became acceptable by the standards of major market stations.

"I think radio has gotten caught in a narrow way of perceiving the audience and perceiving music. In the good old/bad old days, there were programmers who flew by the seat of their pants and were willing to take chances. Not anymore. General job paranoia, fear of losing your job prevents this. I think also the growth of 'super programmers/consultants' hurt the station programmers. These are the people who graduated out of successfully programming radio stations, set up their own consultancies, and wound up usurping a good deal of the power from the local programmers, because the owner or station manager thought here was the person with the halo around their head. I think that's been unhealthy for radio; too many programmers are creative people without the opportunity to be creative.

"I'm not trying to paint a bleak picture, just realistic. Because our radio market is also blessed. We have a lot of wonderful, wide-open college radio stations with bright people who are really into the music. It's all music to me, all those market names cooked up to describe it are really a shame. College radio isn't forced into playing the same games that commercial stations have to, and is very supportive of local acts that aren't on major labels, because college stations are not up against Arbitron and the other ratings services. Programmers know that if the numbers go up, they may get a raise or even get to keep their job. But if the numbers go down, watch out. That pressure isn't on college radio, so there's greater freedom.

"I'm hopeful because of college radio. There are people in college radio now with talent, with good intentions. They're the shining candles in the night." ■

Circle #036 on Reader Service Card

When Choosing Quality The Choice Is LEMO Electronic Connectors



LEMO Audio-Video Connectors

Designed to maximize communication capabilities within a minimum of space. Available in coax, triax, multipin and mixed coax-multipin configurations.

RELIABILITY: Positive locking mechanism and gold plated contacts assure consistent signal transmission to 1.5 GHz.

SPACE SAVINGS: Only finger clearance needed to engage and disengage connectors. No need to twist or turn locking ring.

RUGGEDNESS: Connector components are precision machined. Locking mechanism is totally protected by outer shell, virtually eliminating accidental disconnections and damage to locking mechanism, cables and contacts.

SPEED: Connectors engage and disengage simply and quickly by pushing and pulling axially on the outer shell of the plug.

Over \$1 million inventory stocked in Santa Rosa, California, sold by a network of representatives in North America.

For technical data and catalog, as well as the name of your local representative, please call or write LEMO U.S.A., INC. (707) 578-8811, TELEX 340-933, P.O. Box 11006, Santa Rosa, California, 95406.





Tri-Amp System C24-2000 DIRECT \$5469 List \$9695

The new tri-amp C24-2000 Concert system produces a wall-of-sound that's earth shaking! Components include; the new 24 ch MX2422 pro stereo console, 2 dual 15" 2000M folded horn sub-woofers, 2 1220M mid-range enclosures, 2 R540H Carvin/Renkus-Heinz radial horns, 2 DCA800, 1 DCA300 power amps (1900 watts rms), and 1 XC1000 electronic cross-over. Also, our ultimate **SC24-2000 Super Concert** tri-amp system features twice the speaker components and sound coverage. **DIRECT \$7699**



System S16-1330 DIRECT \$2579 List \$4995

Carvin's popular 16 ch S16-1330 System delivers clarity and power for the most discriminating audiophiles. It's crystal clear highs from Electro-Voice drivers and deep bass punch from horn loaded Carvin HE15 woofers, exceeds equivalent systems. Components include; the new MX1622P stereo powered mixer with 400 watts rms, 2 1330M woofers, 2 R540E radial horns and cables.

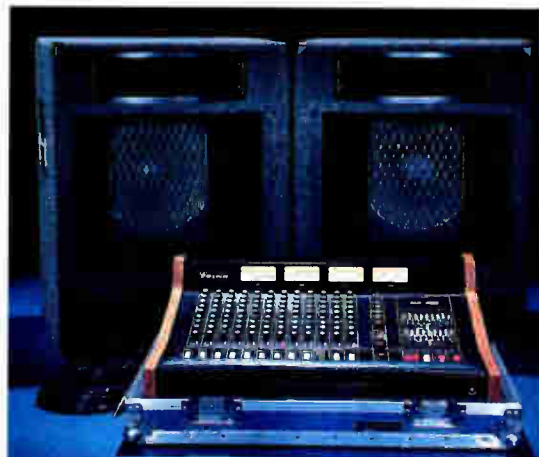
Carvin Sound Systems . . .

Sound System S12-980

System S12-980 DIRECT \$1979 List \$3895

Our best compact 12 ch sound system, S12-980, features the same speaker components as used in our large S16-1330 system. Tremendous volume levels are obtainable with a sound that's second to none. Components include; the MX1222P stereo powered mixer with 400 watts rms, 2 980M speaker enclosures, and cables.

The 980M speaker enclosure features the Carvin high energy HE15 woofer and Electro-Voice DH1202 radial horn compression driver. **DIRECT \$369 List \$695.** Add \$50 ea. for the optional 980E model with the Electro-Voice woofer.



Sound System S8-960

System S8-960 DIRECT \$1449 List \$2695

One of our best performance values is the 8 ch S8-960 system featuring the 960M enclosures. The 960's offer Carvin's high energy HE15 woofer in a tuned port enclosure for smooth, deep bass output. Carvin's HE490 compression horn delivers superb highs. Components include; the MX1222P stereo powered mixer with 400 watts rms, 2 960M enclosures, and cables.

The 960M speaker enclosure has a high power capacity of 150 watts, 300 watts peak. An exceptional value at **\$269 ea. DIRECT List \$495.** Add \$50 ea. for the optional 960E model with the Electro-Voice woofer.



Pro Monitors



Carvin's Pro monitors are incredibly powerful, projecting a clear full-range sound to your ears when everything around you seems deafening. The 12" 750M model sells **DIRECT \$179 List \$295.** The 15" 790M model sells **DIRECT \$219 List \$395.** Optional Electro-Voice woofers, add \$50.

DCA800 Power Amp



The stereo DCA800 amp clearly demonstrates uncompromising performance. Its' 800 watts rms (bridged) output drives speakers from sub-audible sounds to explosive levels without distortion. Pro features include balanced inputs and fail-safe protection. **DIRECT \$549 List \$1095.**

Join the Pro's who use Carvin mixers or P.A. systems

- Tony Brock (Rod Stewart)
- Brad Gillis (Night Ranger)
- Danny Gottlieb (John McLaughlin)
- T Lavitz (The Dregs)
- Peter McIan (prod. Men at Work)
- Missing Persons
- Oingo Boingo
- Earl Slick
- Steve Vai
- Frank Zappa

MX2422
\$1999 List \$3995



Professional MX22 console features

- 8 Models from 6 to 24 channels
- Stereo powered models w 300w & 400w rms
- Professional XLR balanced inputs and outputs
- Ch "patching" for recording and effects
- Mic/Line switch • +48V for condenser mics
- 11 step gain control w/peak LED indicators
- 3 Band ch equalization with Sweep Mid-EQ
- 2 Monitor sends (pre) • 1 Effects send (post)
- Effects return w/Level & Pan
- Channel Solo system w/LED indicators
- Talk-back system (except 6 & 8 ch models)
- Monaural output for PA • Stereo headphones
- Dual graphic EQ's w/patch jacks
- Hammond reverb w/foldback to monitors & 2 track
- Professional VU meters
- 2 track mix-down for recording
- Hand rest • Oak sides • Channel markers
- Super quiet, -128 dBv input noise
- Frequency response 20 to 20,000 Hz
- +4 dB or -10 dB operating levels
- 20 dB headroom at all stages
- THD better than .05% • 1 Year Warranty

Performance Guaranteed!



MX1622 mixer only
\$1399 List \$2795
MX1622P w 400w rms
\$1599 List \$3195



MX1222 mixer only
\$1099 List \$2195
MX1222P w 400w rms
\$1299 List \$2595



MX822P w 400w rms
\$949 List \$1795
MX622P w 300w rms
\$799 List \$1495 (not shown)

Carvin's MX22 series mixers offer real performance values. Use of the finest components and professional designs are just some of the features you've grown to expect from Carvin. All computer grade circuit cards are fully modular for easy maintenance. Carvin's Power-Track dynamic range extender gives tremendous distortion - free output exceeding volume levels of conventional 600 watt rms amps.

Carvin has over 50 sound system packages starting at \$799! Ask about Carvin's Pro CM67 and CM68 mics priced Direct at \$99.

Why are Carvin products so reasonable?

It's because Carvin sells DIRECT. Retail store commissions are not included in the DIRECT price. All Carvin products are "Performance Guaranteed" or your money back after trying for 10 days. All items are stocked for immediate shipment. Send for your FREE 84 page color catalog. To rush 1st class mail, enclose \$1, send \$5 for foreign. Master Card and Visa accepted.

For more information call
TOLL-FREE
800-854-2235
Calif. 800-542-6070

CARVIN

Dept. MX67, 1155 Industrial Ave.
Escondido, CA 92025

Circle #038 on Reader Service Card

Free Catalog

FREE CARVIN CATALOG

Free Catalog \$1 for Rush 1st Class Mail

Name _____

Address _____

City _____

State _____ Zip _____ MX67

P R E V I E W



Otari Time Code Autolocators

The Model CB-120 Autolocator from Otari (Belmont, CA) is designed for use with their MX-70 multi-track, MTR-10/12 Series II and MTR-20 2- and 4-track mastering recorders. The unit facilitates production by taking over the routine "tape operator" functions of storing and locating specific points on the tape, and an optional time code reader/generator brings the precision of SMPTE edit code to the automatic record punch-in/out process.

Features include: punch-in rehearse mode, optional RS-422 serial interface, 99 memories (with ten single-button store/search points), repeat looping, head and tail guard points, adjustable preroll and review, three user-defined functions, two event relays, footswitch punch-in, hours/minutes/seconds/frames calculator, and a non-volatile memory. Pricing is estimated at \$1,300 for the standard tachometer-reading model and \$2,000 for the SMPTE code reading version, and upgrade kits for the tachometer model will be available.

Circle #079 on Reader Service Card

DeWolfe CD Music Library

DeWolfe Music Library, Inc., of New York City, has begun releasing its large resource of production music in the Compact Disc format. The initial offering, now available, is a six disk set with a diverse collection of sounds: "Mirage," which is upbeat and high-tech; "Renoir," warm and relaxed; "Night Cruisin'," funky jazz/rock; "Constellation," with rich orchestration; "New Images," electronic; and "Cuts for Commercials," with a variety of 80 spot-length pieces. The "Six Pack" described here is priced at \$99, plus licensing fees, and 12 more disks are expected to be released in the next year.

Circle #080 on Reader Service Card

BASF Studio Master 911

Introduced to the U.S. market for the first time at the AES Show and now available, BASF Studio Master 911 is a high-quality ferric formulation that is compatible with the most popular products used in American recording studios. BASF will offer 2-inch tape in 2,500- and 5,000-foot lengths; one-inch tape in 2,500-foot reels and hubs; half-inch in 3,280-foot and quarter-inch tapes in both 2,500- and 3,280-foot lengths.

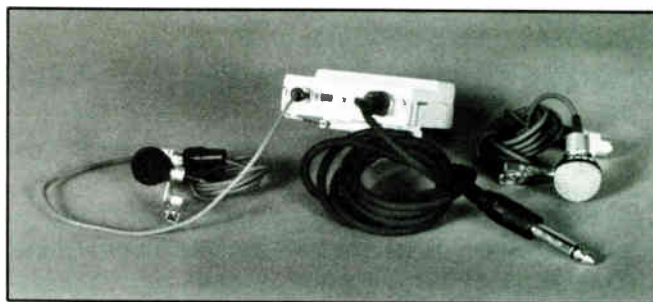
Circle #081 on Reader Service Card

SKE Rack'N Roller

The Rack'N Roller from S K Enterprises (Austin, TX) is an equipment mounting console designed for both in-home and on-location applications. A canted, six-space effects rack is suspended over an angled recorder console for optimum viewing and operation. Preset electronics such as noise reduction units can be placed in the lower section of the console. The Rack'N Roller is available in both single and double rack configurations. The double rack console, combined with optional Road Package, is ideal for transporting two recorders in live multi-track and/or 2-track situations.

Custom designs are available, including patch bay or power wiring, single-point grounding network, multipin snake system, and filler panels. Also available is a road package consisting of latched covers and heavy duty locking casters. The Rack'N Roller single rack is priced at \$425, and the double rack model is priced at \$625. Dealer inquiries are invited.

Circle #082 on Reader Service Card



Samson TH-1 Wireless

Operating in the 174-199 MHz VHF range, the TH-1 from Samson Music Products (Hempstead, NY) is a belt pack transmitter designed for instrument/lavalier wireless applications. The TH-1 features both an on/off power switch and a mute switch that leaves the RF carrier on while cancelling the audio signal; internal or external wire antenna; 300 foot operating range; an Hiroshi lockable six-pin audio input connector; and audio input level trimpot with LED overload indicator for optimum input level matching. The TH-1 can be utilized with either Samson's broadcast or concert series VHF receivers.

Circle #083 on Reader Service Card

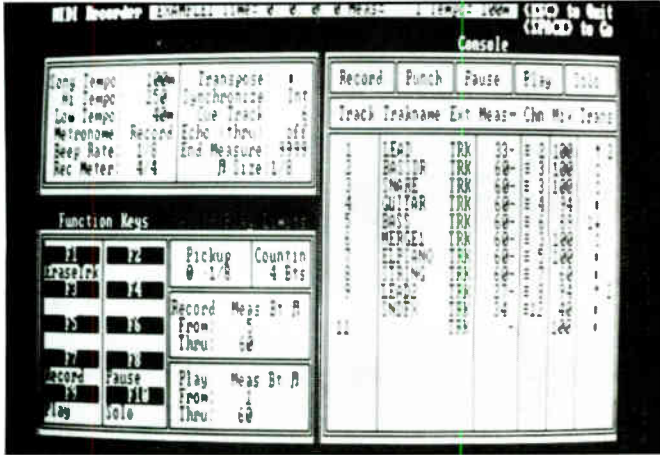
Wendeljr

Unveiled at the AES Show in New York, and expected to be available in the first quarter of this year, Wendeljr is a scaled-down, yet non-compromised version of the renowned Wendel drum computer developed by engineer Roger Nichols. Wendeljr is a single rack space unit offering two channels of digital sample playback, and sounds can be triggered from a variety of sources, with a trigger response accuracy of 50 microseconds. Drum samples are stored on interchangeable ROM cartridges, with 16 bit quantization and a sampling rate of 50 kHz. All of Wendeljr's sound

samples are recorded without the use of any processing, equalization or compression. Besides the usual percussion sounds, other samples will be available, as will a custom loading service.

A single unit could be used to provide several sounds (i.e. snare and kick during basic tracks or overdubbing), or a number of Wendeljr's could be used simultaneously to cover an entire drum kit in a live situation. Wendel Labs expects the Wendeljr to be priced at \$995.

Circle #084 on Reader Service Card



Sight and Sound MIDI Ensemble

Sight & Sound Music Software, Inc. of New Berlin, Wisconsin, have released MIDI Ensemble™, the first in a series of powerful software programs for the IBM-PC and compatible computers. MIDI Ensemble consists of three main program modules: Recorder, Event Editor, and Phrase Editor. The recorder module allows the recording and overdubbing of up to 255 tracks of MIDI information, and includes automated punch in/out, autolocate, programmable metronome, transpose, elapsed time measurement (real-time or frames), track solo/muting, as well as interfaces to external controllers. The Event Editor enables the user to insert, delete, or change notes in any track, and a special screen display simplifies the precise editing of pitch, start time, duration, and key strike velocity of any note. The phrase editor permits the user to move, copy, delete, combine and modify entire segments of any length.

Other features include a built-in text/graphics editor for saving notes or diagrams with each song file and a "system setup" module for tailoring the program to the type of computer being used. The MIDI Ensemble software is priced at \$495.

Circle #085 on Reader Service Card



ART DR1 Digital Reverb

The DR1 from Applied Research & Technology, Rochester, NY, is a high-definition, 16-bit digital reverberation system, that includes five plate, five room, two effect, one re-

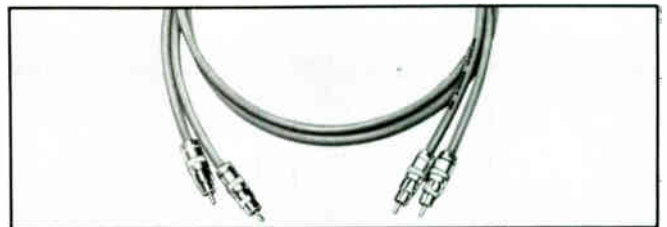
verse, one gated, one DDL, and five hall algorithms that define room parameters. Also featured are 30 factory presets, 100 user presets, a 14 kHz bandwidth, MIDI control, 1/4-inch balanced stereo inputs, true stereo or mono outputs, and a full function remote control. The ART DR1 is priced at \$1,295.

Circle #086 on Reader Service Card

Cooper Apple IIc to MIDI

J.L. Cooper Electronics, of West Los Angeles, has introduced a retrofit interface for linking the Roland MPU-401 MIDI Processing Unit to the Apple IIc computer. The retrofit may be easily installed by any qualified computer or synth tech, and plugs into the microprocessor socket with no soldering required. After installation, a short cable exits from the left side of the IIc and plugs directly into the MPU. The retrofit is priced at \$139, and versions of Roland's MUSE sequencer and Laubach Software's DX-Pro are available for the Apple IIc.

Circle #087 on Reader Service Card



Entre' LC-OFC Cables

Entre', a Japanese manufacturer best known for their high-end phono cartridges, have introduced a totally new audio cable design utilizing Large Crystal, Oxygen Free Copper (LC-OFC) technology. The LC conductor concept uses about 25 crystals of pure copper per meter, as opposed to other types of OFC cables with approximately 50,000 crystals/meter. According to the manufacturer, this difference results in improved audibility with reduced distortion, due to the signal passing over fewer gaps between crystals.

The Entre' ELC-120 is a one meter cable with solderless, RCA-type gold-plated Bansei connectors made of solid brass. Other available interconnects have phone or XLR-type connectors for instrument or microphone applications. The Entre' line is distributed in the U.S. by Analog Excellence of Los Angeles.

Circle #088 on Reader Service Card



Shure Prologue Condenser Mic

The Shure 16L-LC is a low impedance, unidirectional, battery powered electret condenser microphone designed for home multi-track recording and sound reinforcement applications. The 16L-LC, priced at \$98, is the top model in the company's Prologue line and features include: a balanced 600 ohm output with XLR connector; recessed on/off switch; swivel stand adapter; storage bag; and internal powering via one "AA" penlight cell, so phantom power is not required.

Circle #089 on Reader Service Card

FIELD TEST



The Emulator II and the Macintosh running the Sound Designer software.

The Emulator II/Macintosh/Sound Designer System: A Low Cost Computer Music Environment

by Larry Oppenheimer

*"Yow! I am having fun!"
—Zippy the Pinhead*

At a recent mixing session for *The Twilight Zone* TV series, a rich pastiche of sounds billowed from the monitors, enveloping everyone in the room. The lush, eerie soundtrack strikingly illustrated the skillful application of modern synthesizers. Except that the sounds were not synthesized. Virtually all had started out as actual acoustic events which had been recorded and then processed through any number of digital whiz-bang boxes until they were scarcely distinguishable from synthesized sounds, except in the complexity and subtle variations that are so difficult to synthesize. In fact, the vast majority of them were the result of sampling the sound into an E-mu Systems Emulator 2 and then playing it back through the Grateful Dead's overstuffed rack of digital goodies (most used were the Eventide SP-2016, Lexicon 224XL, and Quantec QRS). Unfortunately, creating a new sound often called for rerouting the effects, which required diving into the arcane spaghetti that was the patch bay. A question presented itself: Wouldn't life be much easier if this plug-and-pull game could be eliminated, along with the repeated conversions from analog to digital and back again, by rolling everything together into one easy-to-use box?

In a grossly simplified way, this is the essence of the computer music worksta-

tion concept. A true workstation might perform digital recording, playback, editing, analysis, resynthesis, and processing of sounds, in addition to the ability to do digital synthesis of several kinds and then arrange everything into the desired compositional form. Furthermore, a workstation might include facilities for interactive real-time performance. Several of these functions might be simultaneously available. Best of all, this entire machine would be designed to be used by one person.

At the time of this writing there are no fully-realized computer music workstations, but several projects are under development in both the academic and commercial worlds and a few machines that have been commercially available for several years, notably the Synclavier and the Fairlight CMI, are expanding their capabilities in this direction. The reason for the scarcity of such instruments is partly technological—a suitable hardware architecture and the massive amounts of software required dictate a long r&d time—but the biggest problem so far has been the cost to the buyer of a device with high quality performance in all of the above-mentioned areas. Starting in the vicinity of \$30,000 or so and going up from there (as high as you want to go), powerful machines of this sort are out of reach of most composers and musicians. However, as technology develops ever faster, prices have continued to fall, making possible the realization of a comparatively low-priced computer music system capable of some limited set of workstation functions. This

important waystation on the road of musical instrument evolution is where we are today, and the system described here represents a landmark from which we can look back at our Minimoogs and Revox A77s (both still in wide use) and look ahead at SoundDroid, Compu-sonics' DSP-2000, Lexicon's RD-1 project, and other workstations not yet arrived, and bless our bit streams that such great fun and swell toys should come along in our time.

The beginning of 1984 saw the introduction of the Emulator 2, E-mu's second generation sampling instrument, and the advent of the Apple Macintosh computer as a viable tool for a variety of tasks. Both of these machines represented significant advances in their respective areas, both from a price/performance standpoint and for their user interfaces (ease of use). More recently, a software package, called Sound Designer, from a small company called Digidesign became available which takes these two fine instruments and teams them together to create the most powerful computer music system available for under \$15,000. Actually, Sound Designer wrings every last ounce of performance from the E2 and the Mac, yielding some features that can't even be found on far more expensive systems. There are limitations in this system to be sure, but in the face of comparison to the other choices it is ludicrous to say that this system is not a powerful tool and a good value.

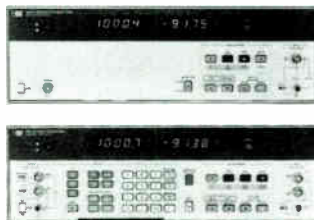
This is not a review, per se, of the E2/Mac/Sound Designer system. If

What are the lowest-priced audio analyzers doing in a Hewlett-Packard ad?

Hewlett-Packard? That's quality. Performance. Top of the line.

True. But it's also a fact that HP programmable audio analyzers cost less than any others on the market. At \$5800* they do more, too. They carry out full frequency range testing. Fast. Tests that used to take hours now take you minutes. Just push a button, and the analyzer measures both distortion and frequency.

The HP 8903B packs a lot of instruments in one low-cost box. Besides the analyzer, there's a source, an ac/dc voltmeter,



a frequency counter, signal-to-noise meter and a sweeper.

If you already have a signal source, use it with the HP 8903E. It costs just \$3900*

Lower prices. Just one more reason Hewlett-Packard test instruments are right on the money.

So contact your HP sales office. Or call 1-800-556-1234, Ext. 515. In California, 1-800-441-2345, Ext. 515. Or write: Hewlett-Packard, Janine Holler, 1620 Signal Drive, Spokane, WA 99220.

*U.S. price.

MC15503

 **HEWLETT
PACKARD**

what you are looking for is an evaluation and a detailed listing of features and tests, there are a number of such pieces already in print to which you should refer. Instead, what is presented here is a perspective on this system in the context of its implications as a quasi-workstation.

The Emulator 2

The original Emulator was one of the first sampling instruments to hit the market after the Fairlight, and, being only a fraction the price of the Fairlight, quickly reached prominence in the musical world. This success allowed E-mu to gain valuable experience and feedback from users, then return to the lab to create a successor. Although the E2 was announced well before it was actually delivered, when it arrived it did what E-mu had promised it would.

In essence, the E2 is a specialized digital recording and playback device, which also includes some digital editing and analog processing facilities. A sound that has been successfully recorded, edited, and processed can be assigned in a sophisticated fashion to a portion of an organ keyboard and played, with the aid of several real-time controllers to add expression. All sound material may

be stored onto floppy or hard disk in raw or finished form, then recalled and edited at any time. The E2 also carries an onboard 8-track sequencer for compositional work, and interfaces easily to MIDI, SMPTE, and RS-422.

The Apple Macintosh

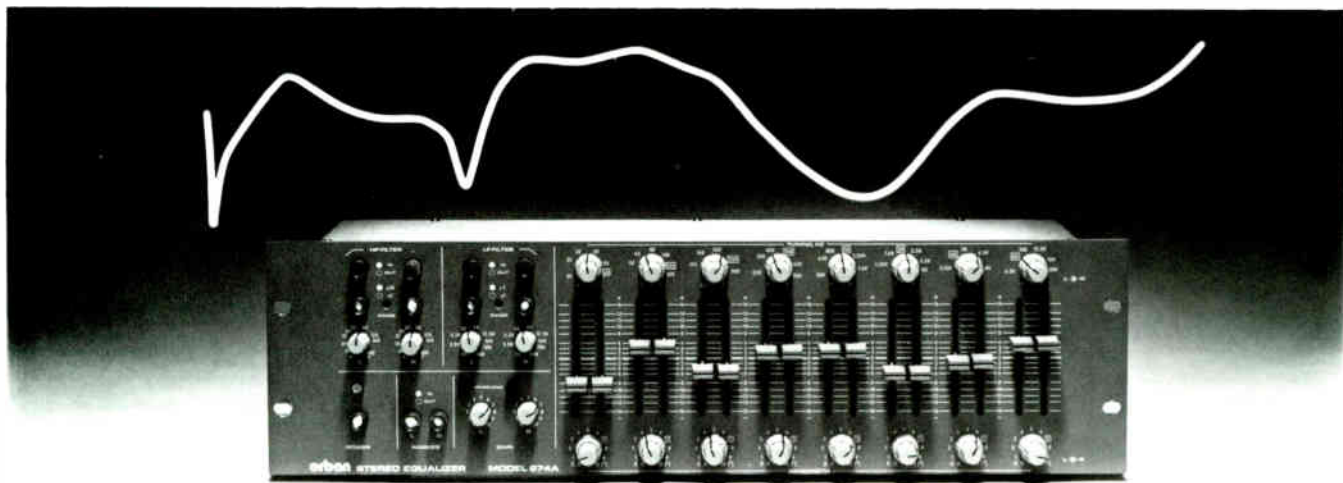
Originally released in 1983, the Apple Macintosh was slow to catch on because of a lack of available software. Slow disk drive access and limited onboard memory (128kbytes) also restricted the Mac's usefulness. Since that time these stumbling blocks have been remedied by several developments. First, software developers finally started delivering larger numbers of programs to the point that a considerable library is now available. Second, Apple released a 512k version (known as the "Fat Mac") and third party developers subsequently concocted memory expansions for the Mac going up to 4Mbytes. Finally, General Computer created the "Hyperdrive," an internal hard disk drive for the Mac which directly accesses the computer's buses, thereby drastically increasing speed of operation and on-line storage.

The computer's main strength lies in the way that users work with it. Taking some ideas (and engineers) from Xerox's

Palo Alto Research Center, Apple created an environment for the user which effectively eliminates the need to type in commands and all the attendant problems of that approach: having to remember the commands and the proper syntax for entering them, the time involved in command entry, and, most of all, the distraction from the work at hand that occurs when one is forced to *think* about using the computer instead of being able to just *do* it. All of this is achieved through the use of a graphically-oriented screen display in which files can be simply viewed and manipulated as icons, and a small input device, called a "mouse," which allows commands to be chosen from menus and files selected in an intuitive manner.

Sound Designer

Sound Designer runs on the Macintosh (it requires at least 512k of memory and two disk drives, but operates optimally with a Hyperdrive) and communicates with the E2 by connecting the enclosed cable from the modem or printer port of the Mac to the E2's RS-422 port. Sound files and control information are exchanged at high speed (500kbaud), allowing instant auditioning of work in progress. The program



The Orban "Paracrossalizer."

A one-of-a-kind word for a one-of-a-kind problem solver.

The Orban 672A (Mono)/ 674A (Stereo) Graphic Parametric Equalizer combines a full electronic crossover (high- and low-pass filters with 12 dB/octave slopes) with 8 bands of fully parametric EQ and easy-to-use, graphic-type controls. In many reinforcement systems, the 672A/674A is all you need: it replaces a separate crossover and old-fashioned third octave EQ with a system that has better phase and time-response characteristics. It not only *measures* better on today's sophisticated acoustic instrumentation, but—most importantly—it *sounds* better too!

The 672A/674A is at home in the studio as well. It's a single cost-effective package of sheer EQ power that can solve virtually any frequency-contouring problem in recording, music synthesis, broadcast production... you name it.

Contact your local dealer today for more information on the "paracrossalizer"—Orban's unique curve-bender for corrective and creative EQ.

orban Orban Associates Inc.
645 Bryant St., San Francisco, CA 94107
(415) 957-1067 Telex: 17-1480

Circle #040 on Reader Service Card

has two sides to it: one that emulates the Emulator's front panel functions, allowing the E2 to be programmed from the Mac's superior user interface; and one that acts on the sound data received from the E2 or creates new data to transmit to it.

The front panel emulator is useful because the E2 has many functions, but a limited facility for displaying information or receiving input from the user. With Sound Designer, many parameters are represented graphically at the same time and can be manipulated by simply pointing with the mouse to the parameter in question and moving it to the desired value. As of this writing, several functions of the E2, including the sequencer, are not part of the Sound Designer emulation.

The more significant part of the program, however, is obviously the "Waveform Display" mode. In this mode, the waveform of a sound file received from the E2 may be viewed on the screen at any resolution, edited, mixed or merged with other sounds, digitally filtered, gain normalized, analyzed and resynthesized (resynthesis was still under development at the time of this writing). Additionally, sounds may be digitally synthesized and then transmitted to the E2 to be played.

OK, now we have a basic picture of the components of this system. Let's look at how they fit together to provide a workstation-like environment. Keep in mind that this system is designed to perform a specialized set of functions. In comparison to a fully realized workstation this system is quite restricted, but for the job that it is intended to do it is unsurpassed.

Digital Recording

The E2 acts as the recording device in the system. Incoming signals from the analog domain are converted to digital at a sampling rate of about 27.7 kHz. The data is encoded in a compacted 8-bit format to save on the expense of the converters and the extra memory that higher resolution entails. The memory in the E2 will hold a total of 17 seconds of sound and can be partitioned into smaller chunks to allow up to 99 sounds to be held in memory at once. Obviously, the more sounds in memory at once the less length you have for each sound.

In terms of present digital recording systems, 17 seconds is a pitifully short amount of time. The E2, however, is designed to perform a specific application of digital recording known as sampling. The nature of sampling (recording sounds to be played back on an organ keyboard or triggered) does not often call for minutes of sound. The same thought applies to the sampling rate and converter resolution. In the context of sampling, the fidelity of the E2 is consid-

OTARI

**High standards to
match your own:**

**High Technology
High Performance
High Quality**



**MX5050
MARK111/8**

CALL US LAST

170 PRODUCT LINES FOR THE PROFESSIONAL
AMPLIFIERS • CASSETTES • HEADPHONES • INTERCOMS • LIGHTING • MICS • MIXERS • PARTS
SIGNAL PROCESSING • SPEAKERS • TAPE • TAPE RECORDERS • TEST EQUIPMENT • TURN-TABLES



6729 SEYBOLD RD., MADISON, WI 53719-1393

TOLL FREE
IN ALL 50 STATES
1 (800) 356-5844
IN WISCONSIN
1 (800) 362-5445
CONSULTATION
LOCAL (608) 271-1100

Circle #041 on Reader Service Card

**STUDIOS MUSICIANS
COMPOSERS ARRANGERS
PRODUCERS**

The Music Interface

Specialists in Computer-based Systems

OFFERING:

TMI COMPUTER	MIDI STUDIO
HARDWARE	VOYETRA EIGHT
SOFTWARE	JL COOPER
TRAINING	STUDIOMASTER
SUPPORT	ACCESSORIES
SERVICE	MIDI STUDIO

8951 HUBBARD ST., #3 • CULVER CITY, CA 90232

(213) 202-0359

Circle #042 on Reader Service Card

SUBSCRIBE
NOW to

Electronic

M U S I C I A N

at the
special rate
of \$14.95!



Whether you play keyboards, guitar, drums, or bass . . . whether you want to add a computer to your music or add music to your computer . . . for hands-on advice about personal recording techniques . . . whether the only thing you know about MIDI is how to spell it, or you need advanced MIDI information on SMPTE, interfacing, programming and performance, *Electronic Musician* is **your** reliable source!

Here's your opportunity to get *Electronic Musician* every month and save 38 percent. Instead of paying the cover price of \$24.00 for a year of *Electronic Musician*, you pay only \$14.95 and we'll even deliver it to your door.

Electronic Musician is the first magazine devoted **exclusively** to the rapidly expanding field of electronic and computer-aided musical instruments. Every month, *EM* brings a wealth of information on the latest equipment and how to incorporate it into **your** work.

The unique approach of offering both introductory **and** advanced articles on topics ensures total access to the information you need. Knowledgeable users won't have to wade through a barrage of basics to pick up new techniques, while novices won't have to attack an avalanche of acronyms to understand a technology.

Don't miss a single issue! Subscribe TODAY and save!

ered excellent, even though it would pale in comparison to a professional system like a Sony or Mitsubishi PCM recorder. The E2 LCD display gives a PPM-like display to set the proper recording level, and indicates after recording whether the sample was successfully captured without clipping or not, displaying the number of clipped samples if needed. Further, sampling can be initiated by simply pressing a button, or by setting a threshold which must be exceeded for sampling to begin. This is a very handy feature when sampling from a noisy source.

Editing

Once recorded, a sound may be edited in the E2 by moving the start and end read pointers to truncate the beginning or end of the sound file. This truncation may be permanent (the excised portions are erased, freeing memory) or not (only the pointer information is stored). The sound can also be looped, a vital editing function in this application, which allows samples of a finite length to be sustained indefinitely by repeating a selected portion of the sound over and over. Start and end points for the loop can also be set.

One unfortunate aspect of the E2's operating system is that sounds are described in terms of the actual number of

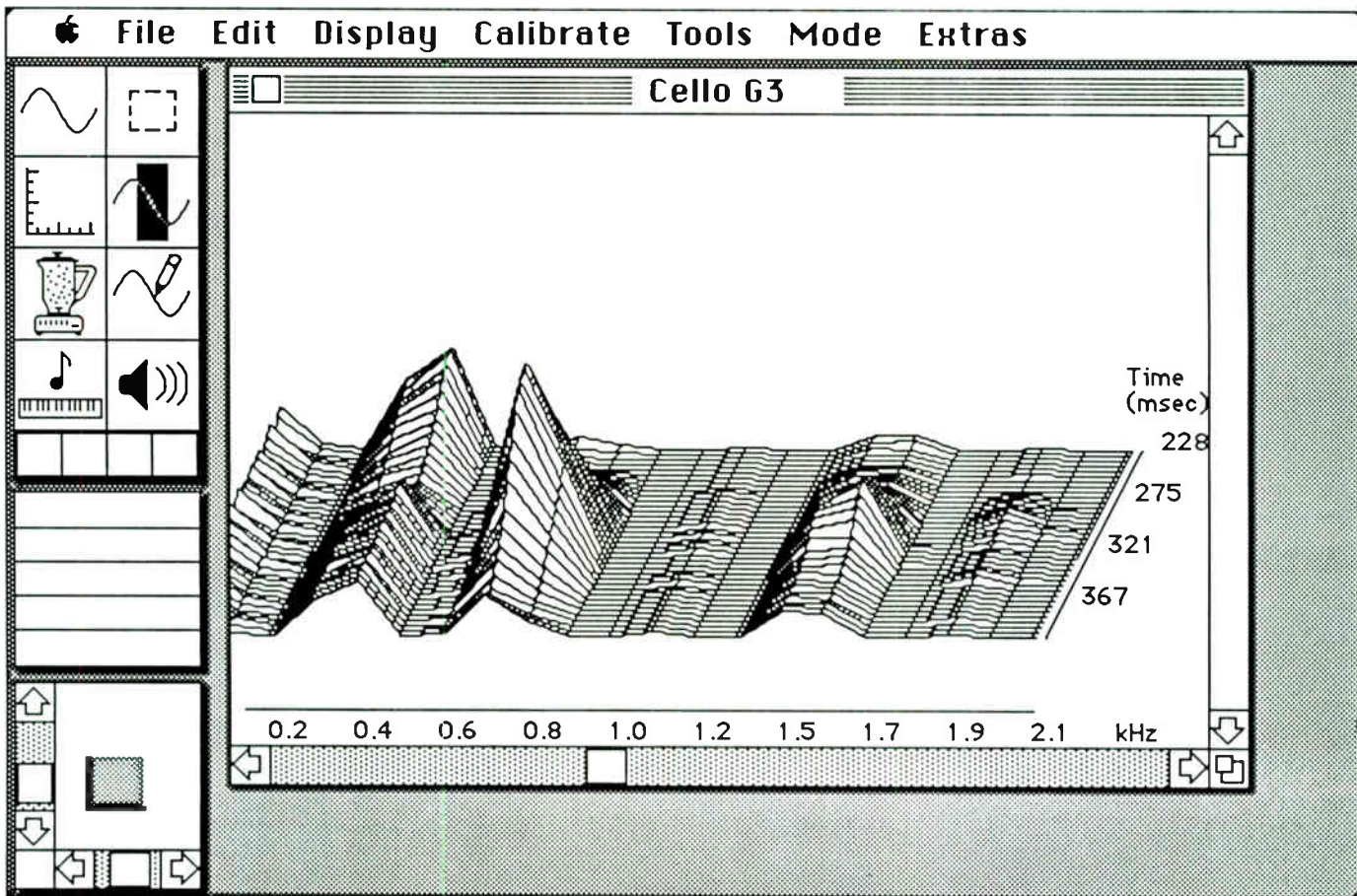
samples in the file, and looping and editing points are displayed as sample numbers. While this is without doubt the most accurate way of indicating these parameters, it is far from the most intuitive. This is where Sound Designer takes over, however, making good use of the Mac's great graphics environment.

A file may be transferred to Sound Designer via RS-422, converted to a 16-bit linear coding format (this is done automatically), and displayed in a calibrated time vs. amplitude waveform display. Now the length of the sound file can be easily seen. The Sound Designer display has a number of features to make editing easier and more powerful. Any part of the display can be quickly zoomed in on to any desired resolution; if necessary, individual samples may be viewed. This is achieved by using the Mac's mouse to click on the zoom box icon and then simply indicating the desired portion of the waveform. This can be done repeatedly until the resolution is satisfactory. The other method is through a box in the lower left of the display which allows either axis to be stretched or compressed, giving a simple indication of how much of the full display is currently being viewed. Scale calibration automatically adjusts in resolution. Both scale markings and a zero line can be turned on and off as needed.

The display is just the start, however. Again using the mouse, up to ten markers may be placed in a file, each one with its own name and number. As a marker is moved, its current position is indicated in both amplitude of the waveform and time from a designated reference point (usually the beginning of the file). Thus, markers can be precisely placed in the file. There are two separate markers for placing looping points which operate in the same fashion as the other markers. Looping from a visual display of the waveform is infinitely easier than the trial-and-error method required on the E2 alone. A screen cursor which also displays amplitude and time of its current position is also available. The speed and ease of access to any part of the sound file afforded by the extensive display makes this essentially a random access editing system.

OK, the sound can be comprehensively displayed and precisely marked, but what kind of editing can be done? One of the great features of the Mac interface is the ability to do cut-and-paste editing with ease. In Sound Designer, any portion of the waveform may be selected and cut or copied to an area of Mac memory known as the "Clipboard." From there, the selected chunk can be pasted into anywhere in the waveform, or even into another sound file (Up to

Sound Designer's Fourier analysis plot.



VICTOR'S PRO AUDIO

New Jersey's Pro Audio Center

ADA	Lexicon
AKG	Micmix
Ampex	Otari
Aphex	Ramsa
Ashly	Sennheiser
ART-MXR	Shure
Audio-Technica	Soundcraft
Countryman	Studer-Revox
Crown	Studiomaster
DBX	Symetrix
DeltaLab	Teac/Tascam
Eventide	TAC/AMEK
Fostex	USAudio Gatex
JBL	Valley People

plus many more

Victor's Pro Audio
235 Franklin Ave.
Ridgewood, NJ 07450
(201) 652-5802

COMPLETE SHOWROOM

Circle #043 on Reader Service Card



A SINGER'S DREAM!

REMOVES VOCALS FROM RECORDS!

Our VOCAL ELIMINATOR can remove most or virtually all of a lead vocal from a standard stereo record and leave most of the background untouched! Record with your voice or perform live with the backgrounds. Used in Professional Performance yet connects easily to a home component stereo system. Not an equalizer! We can prove it works over the phone. Write or call for a free brochure and demo record.

Listen..



Before You Buy!

- Time Delay
- Compressor/Limiters
- Reverberation
- Expanders
- Crossovers
- Spectrum Analyzers
- Noise Reduction
- Parametric EQ

Don't have regrets about paying too much for a lesser product. In demos and comparisons, we'll show you why we're Better! Our Factory Direct sales allow us to produce a Superior product and offer it to you at a Lower price. Call or write for a free full length Demo Album and 24 page brochure.

Write to: **LT Sound, Dept. MX, P.O. Box 338**
Stone Mountain, GA 30086
In Georgia Call (404)493-1258

TOLL FREE: 1-800-241-3005 - Ext. 8-A

three files can be simultaneously open in Sound Designer, each with its own display). This facility is useful for constructing composite sounds from portions of several files.

Sound Designer also allows the use of a "pencil editor" similar to MacPaint. The mouse is first used to select the pencil function, and then to apply it. Let's say that you took a sample which has a wide dynamic range and a few samples got clipped. For just a few samples it might not be worth it to junk the recording you have and try again if you can possibly correct it instead. The clipped samples will probably be obvious in the display. The pencil can be used to redraw the clipped peak of the waveform and round it off. Similarly, glitches and clicks can be eliminated by pencilling them out. Of course, this same facility can be used for radical modification and utter craziness if that is what you have in mind.

Playback

Playback is available from the E2 or the Mac. Sound Designer can play back a sound through the Mac's internal speaker, and Digidesign has even improved the sound out of this small speaker through some clever programming. When working on files without an E2, the Mac's speaker works just fine as a monitor. Files can be transferred from the Mac to the E2 with a quick preview mode, or through a full transfer mode that takes longer but transfers more information.

The E2 has eight audio channels, so up to eight keys can be pressed simultaneously. Although this is the equivalent of what is termed "8-voice" in most synthesizers, E-mu uses the term "voice" to indicate sound file data, so we will

avoid the use of this term altogether to prevent confusion. As mentioned earlier, a sound can be assigned to appear anywhere on the keyboard, with designated points for the original pitch, high and low range limits. Sounds may overlap on the keyboard, and even be crossfaded. Crossfades can be positional (sound A fades out and B fades in as you play up the keyboard from A's range into B's) or velocity (as you play harder you hear less A and more B). This feature can be used to create a more natural effect, such as crossfading between multiple samples of the same instrument to preserve the integrity of sound in different ranges and volume levels, or in bizarre twisted ways to create novel effects.

Signal Processing

Both analog and digital processing are available in this system, which enables sounds to be contoured and modified extensively. In each of the eight audio channels the E2 contains one analog VCF, one VCA, two ADSR envelope generators (one for the VCF, one for the VCA), and an LFO. The spectral and dynamic changes that can be wrought on sampled sounds with these simple tools are truly inspirational. Remembering that the source material could be anything from a mandolin to a synthesizer to the mating call of the African wapiti, the transformations can run the gamut from simply making the mandolin sound bowed to making the wapiti sound plucked. As if all that weren't enough, the E2 also allows sounds to be played in reverse!

Sound Designer takes the alternative approach and does all of its signal processing in software, as opposed to the E2's hardware. Program author Evan Brooks and Digidesign president Peter

Sound Designer's front panel emulator. Filter "module" display is shown. Moving the "handles" (black squares) changes the value.

Gotcher are right in Silicon Valley, which keeps them in pretty close contact with the latest developments in digital signal processing (DSP). The Mac, although it lacks a genuine math co-processor, is reasonably suited to the kind of math that DSP takes. Fasten your seat belts, 'cause this gets really good.

Clicking with the mouse on the little "mixmaster" icon calls up Sound Designer's digital mixer, which contains most of the signal processing functions. Two sound files can be digitally mixed, with the proportions specifiable in dB or by a percentage. Better than that, two files can be merged. A start point and a length of crossfade can be specified. The possibilities are endless: imagine playing a note that starts out as an operatic soprano and turns into a tire squeal and car crash! Or a cat meow changing into a guitar.

Two other utilitarian processing tasks available are gain normalization and equalization. When sampling, levels are set low enough to avoid clipping, but this often means that the loudest part may not go up to the maximum available level. In digital audio, low levels mean more noise, so it is desirable to be able to take a sound file and scale it until the loudest part of the sound is exactly full scale. This is called normalization.

Version 2 of Sound Designer will perform parametric filtering in the form of high- and low-pass, high and low shelving and peaking equalization (current version is 1.1). Other dynamic processing such as compression will also be available.

Digital Synthesis and Analysis/Resynthesis

The ability of the system to do synthesis resides in Sound Designer. This takes two forms: direct digital synthesis and resynthesis from analysis parameters (inverse Fourier). Versions one and 1.1 contained a limited implementation of these features, but version two will have all the features described here. Perhaps most useful is Sound Designer's FFT (Fast Fourier Transform) feature. All or part of a sound file can be analyzed and broken down into a selectable number of frequency bands (up to 256) and then shown as a three-dimensional plot. The plot can be viewed from several angles: front to back, back to front, time lines only, frequency lines only, etc. This kind of analysis can give a great deal of insight into how a sound changes over the course of its full duration. Version one contained the FFT, but in version two, the ability to change the display is added. This means that you can modify the spectrum and then resynthesize the

sound additively.

Another feature in development is a software tool called the phase vocoder. The phase vocoder is essentially a Fourier transform that preserves phase information (which an FFT does not). The phase vocoder has been in use in universities and research centers for several years now, and some of the possibilities it presents are: glitch-free modification of pitch without changing duration or duration without changing pitch, scaling of the frequency spectrum, frequency domain noise reduction, and, of course, cross-synthesis (standard vocoding).

There are a number of different methods of direct digital synthesis. One of the simplest to realize is the Karplus-Strong algorithm, which simulates a plucked string. Sound Designer allows you to use either noise (typical) as the excitation for the synthesis, or a sound file, and then specify the length of the note to be created and the point on the string where it is being plucked.

Also available are FM synthesis, as used in the Yamaha DX series of digital synthesizers, and waveshaping are two powerful non-linear synthesis methods. The resynthesis, of course, is actually time varying additive synthesis. Between all these methods and simple waveform generation, our system is quite well-equipped for synthesis.

—PAGE 70

UNLIMITED LIMITERS



A lot of simplified, pre-programmed limiters have hit the market. They're okay—if you work with "average" program content. But what if you don't? What if you don't want to be limited that way?

With AUDIOARTS ENGINEERING, control is the key: control over all important compressor-limiter parameters: input and output gain, threshold level, compression ratio, attack time, release time. Our units have separate VU output and gain reduction metering, stereo/dual-mono operation, direct bypass, de-ess function, side-chain patching, and electronically balanced XLR inputs and outputs.

The new Model 1202 Stereo and 1201 Mono Limiter-Compressors; they have the quality you'd expect from AUDIOARTS ENGINEERING—at a price you wouldn't.



AUDIOARTS® ENGINEERING
A DIVISION OF WHEATSTONE CORPORATION
5 COLLINS ROAD, BETHANY, CT 06525 (203) 383-0887

Circle #044 on Reader Service Card

Composition

With the system we have defined here, composition can be performed using the E2's onboard sequencer. The orientation of a sequencer is such that it presupposes a particular compositional approach common in pop music. Once again, we find a feature that is limiting because it has been oriented to a particular application, but is optimized for this task and performs it very well. The sequencer has eight "virtual" tracks, meaning that only control information is stored, not sound data. This means that tracks can be easily overdubbed and bounced with no degradation whatsoever. Autocorrection of performed rhythms is available to a resolution of 32nd note triplets. The length of the sequence and the time signature can be predefined or not as desired. A count in of selectable length is available. The E2 can read and write SMPTE time code and be programmed to wait until a specified SMPTE start time before beginning playback, very useful when applied in film and video applications or multiple synthesizer setups. The sequencer can also be used as a MIDI sequencer, and is capable of being driven by an external clock, such as sync-to-tape signals or a drum machine.

If this approach is not suitable there is another way to go about meeting your compositional needs. Typically composition is not done simultaneously with sound design. This means that the Sound Designer program, which has no sequencing capabilities, is not needed during composition. The purchase of an inexpensive MIDI interface for the Macintosh then allows you to choose from several excellent MIDI sequencing and composition packages that are available, or write your own if you are so inclined. Thus, the range of compositional possibilities with this system is also broad.

Real-Time Interaction

The E2 has excellent facilities for real-time interaction, as it is largely designed to be used in live performance. Most obviously is the keyboard itself which is velocity sensing with programmable sensitivity. Velocity can be directed to control a number of different VCA and VCF parameters, in addition to controlling crossfades or switching between two sounds.

The E2 has two wheels, a footpedal, and two footswitches which are all assignable to a number of different destinations. In addition to standard assignments, like one wheel to pitch and another for LFO modulation, plus the footpedal controlling volume, the wheels and pedal can all be assigned to send or receive MIDI information. That is, any

Both the E2 and Sound Designer are designed for easy updating and expansion.

of the three controllers can be transmitted as any of the three most common MIDI continuous controller assignments. Further they can receive incoming information from a MIDI continuous controller and then route that to an E2 parameter. This is reminiscent of the "physical/logical" device assignment in some computer operating systems.

Storage

Both the E2 and the Mac use floppy disks as their native storage medium, but

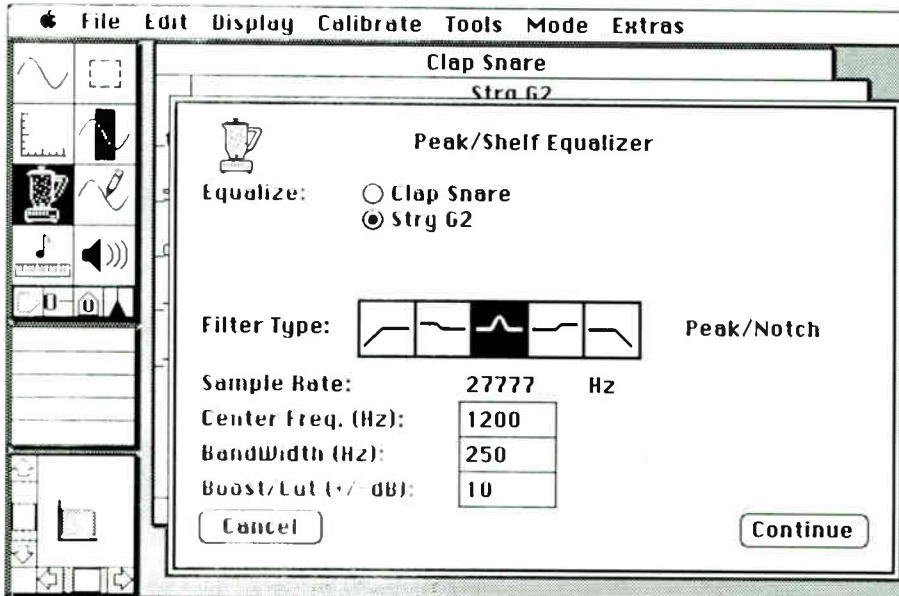
both have hard disks as options. Sound data may be stored in raw form on the E2's internal drive as a "Library" disk.

When the entire instrument has been set up, including all edited sound data, VCF and VCA parameters, keyboard and MIDI assignments, etc., the entire set of control parameters can be stored as a "preset." Up to 99 presets can be held in the E2's memory at one time. When you have constructed enough presets for your current needs, you may dump the entire contents of the memory, including the sound data and all control data, onto a floppy disk, which is then called a "Performance" disk. Unfortunately, one memory dump fills an entire 5¼-inch disk. The hard disk, not yet available at the time of this writing, will hold many more dumps. Of course, information can also be stored by transferring it to the Mac with Sound Designer and then storing it on the Mac's floppies, but the limited storage (400k) of the standard Mac disk limits the size of file which can be stored to less than seven seconds. With a Hyperdrive or one of the new double-sided floppies for the Mac, this problem would be alleviated.

Programming and The User Interface

A number of examples have been given above concerning the advantages of the Macintosh user interface. The E2 itself has a well-thought out interface, but it is limited by its display, which is a small, two line LCD. Even so, the E2 operating system is direct and easy to understand. Most tasks are accomplished by pressing a button to select a "module," which actually puts the E2 in a particular operating mode. In each mode the four sliders near the display have a certain set of functions, which is listed in the "module's" designated area on the

Digital EQ display.



front panel.

Using the front panel emulator of Sound Designer makes all this much easier. Parameters like filter cutoff or keyboard scaling are displayed as curves which can be changed with the mouse very quickly. Furthermore, some values which are expressed in arbitrary units on the E2 (like filter cutoff or ADSR settings) are calibrated in absolute units in Sound Designer. The E2 even tells you in its display whenever it is under the control of the Mac.

Interfacing to the Outside World

This system can interface in a number of ways to the outside world. As mentioned earlier, the E2 has eight audio channels. Each is available separately on the rear panel, a great boon when used in conjunction with the sequencer. Of course, there is also the input where the sound to be sampled is fed.

In terms of control, the E2 can be interfaced to MIDI, SMPTE, and sync-to-tape as already stated, all of which can be used to clock the sequencer. The foot-pedal input will also accept an external voltage and digitize it for control of the analog processors. Both the E2 and the Mac have RS-422, but this is unusable since it is how the two instruments talk to each other. The Mac can hook up to a printer, though, for dumps of FFT or waveform displays.

The Future

Both the E2 and Sound Designer are designed to be able to be updated and expanded easily. The recent announcement of a hard disk drive for the E2 is one example. Another is the CD-ROM library which is currently being assembled for the E2. The CD-ROM will hold about 1100 complete memory dumps and provide quick random access to them.

Sound Designer is simply software, so updating and expanding it requires no modifications to your Mac. If Digidesign wants to get into heavy duty real-time processing, such as digital reverb, they may need to talk about some external number of crunching hardware, but one would suppose that thought has already crossed their minds.

Conclusion

A low-cost computer music system which is immediately available has been described. Although many functions are limited due to the specific intent of the system, a very large set of features is available without having to hook up dozens of different boxes. The difficulties of constructing a full-blown workstation probably means that special-purpose devices will continue to dominate, so this is as close as most of us will be able to come for awhile. That's OK with me; there's plenty here to keep me busy. ■



DMX 15-80S Stereo DDL Pitch Changer

- All DMX 15-80S may now be updated to accept LES (Loop Editing System) on both channels of the unit.
- Samples locked in either channel may be looped, manually triggered or triggered by audio input.
- New software has reduced trigger time of both loops.
- Samples may be timesqueezed without change in pitch.
- Samples may be pitch changed without changing length.
- Samples can be played forwards or backwards.

**AMS updates give you
the edge yet again**

ams

• ADVANCED MUSIC SYSTEMS •

Advanced Music Systems
Tel: (0282) 57011 Telex: 63108 AMS G

Harris Sound (Los Angeles)
For Nationwide Sales, Rental or Service
Tel: (800) 637-5000 or (213) 469-3500

The Queen's Award for Export Achievement to Edendeck Ltd.
In July 1985 Edendeck Ltd. became AMS Industries plc

Circle #045 on Reader Service Card

SOUND ON STAGE



Above: two Eastern Acoustic Works KF-550 speaker systems.

EAW Flies at Speeda Sound

The road to success has been long for Mike King, whose company, Speeda Sound, actually got its start years ago when King supplemented his day job at Fresno, California's MV Music Store by doing sound reinforcement gigs at night using his band's PA system. "People used to call the store, wanting to rent a sound system," King explains, "and I'd do it, since I had a small system with the band. One thing led to another, and it kept growing." He left the business for a while, moving to Chicago, handling Midwest sales of instrument amplifiers for Acoustic Control Corporation, but after a few seasons he began to tire of the climate that only a native Chicagoan could love, and returned to Fresno to do sound reinforcement full-time.

"Our first big break was doing a Three Dog Night tour when they got back together," Mike recalls, and things have been steadily improving ever since. Over the past seven years, Speeda Sound has expanded their client roster to include such notables as: Blue Oyster Cult, Quarterflash, Donny & Marie, Lee Greenwood, Joan Jett, Mickey Gilley, Lacy J. Dalton, Tom Jones, and many others.

Speeda Sound's equipment has also changed over the years. "We've been involved with a lot of the JBL products, standard 4550 and 4560 boxes, Yamaha consoles, and we have a lot of Northwest Sound gear—which I've been a big fan of for years," King notes. "As time went on, we moved quite heavily into Audioarts gear, of which we've been a big user—in fact I'm heading out there next week to discuss a new board for us." While the company's equipment arsenal has expanded, along with their

trucking capabilities (now able to have four systems on the road simultaneously), Speeda Sound had been lacking in one area—until recently.

"Not having a flying system has been one of the major roadblocks for my company," King concedes, "which is why we bought an EAW system. We've got 12 Eastern Acoustic Works KF-550 cabinets loaded with JBL E-140s and some custom features—plastic dipcoated front screens, and a trap door in the back of the cabinet where you pull a 20-foot, 8-conductor, 12-gauge cable with an EP-8 on it, so it plugs directly into the amp racks. We're also going with some KF-400s, which is a three-way, vertical box, so we can get into flying triamped sidefills.

"I'd seen them at the tradeshow and I'd heard Carlo Sound (Nashville) using them with the Oak Ridge Boys, and I was impressed. We've got 12 here now and another 12 are on the way. Hopefully by spring, we'll have 48."

MAX Aids Stratford Festival Tour

Throughout the 1985 Stratford Festival (Stratford, Ontario) season, a unique collaboration has taken place between the Festival and Touch Technologies of Toronto, developer of the revolutionary MAX System, a computer-assisted audio control and routing console. Touch Technologies developed the console primarily with theater production in mind, and the Stratford Festival agreed to use the highly effective console for their American tour productions of *Twelfth Night* and *King Lear*.

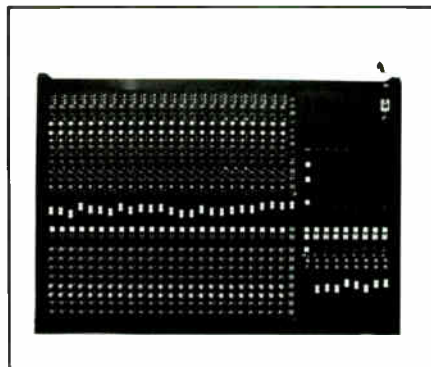
The MAX System marks an advancement in automated sound operation. Before MAX, the routing of sound to various theater speakers was achieved by sending outputs of a standard mixing console to dozens of manually pre-set knobs and switches. Using the MAX console, all sound cues are made and executed automatically, including the adjustment of levels and routings to specific speakers. The net result is sound technology's equivalent to a computerized lighting board. Complex audio scenes are programmed, stored on floppy disk, recalled and sequenced under full artistic control.

The Festival Theatre contains one of the more sophisticated speaker systems in Canadian theater, with 24 speaker locations in the theater, providing an excellent opportunity to display and test the capabilities of the console design.

Since complex soundscapes are often

employed in Festival productions, a system that simplifies and sharpens the design and execution of sound sequences in given productions offers numerous benefits, especially when touring. With the MAX System, the painstaking job of setting up a production in a multitude of different theaters was made much simpler with less chance of error in sequencing of the sound.

The American tour, which began November 8, 1985 at the Huntington Hartford Theater in Los Angeles, concludes this month with performances January 7 through 26, Parker Playhouse, Fort Lauderdale; and winds up at the Warner Playhouse, Washington D.C. (January 28 through February 2).



ATL Monitor Console

Meyer Sound Laboratories Inc. is distributing a high quality, mid-sized stage monitor console, built as a combined effort of Meyer and its Japanese distributor, Acoustic Technical Laboratory (ATL). The configuration is 24 x 8 with an additional 4 auxiliary mixes. All 12 outputs have large LED metering, switchable to VU or peak reading. Any of the 12 mixes may be reassigned in any order to the 8 main outputs via a fast electronic matrix assignment system.

Each transformerless input channel has switchable phantom power, a high pass filter, and four band true complementary EQ. Monitoring solo points are at input, summing, and output stages, with peak indicators at each stage. Talkback can be assigned to individual outputs for improved musician-mixer communications. Two auxiliary inputs can be used to route effects to any output. S/N is 95dB with all inputs summed to one output, board at unity gain. Hum is down 100 dBV. Frequency response is ± 1 dB 10Hz-50kHz. THD is .01% 20Hz-20kHz (worst case) and IMD is 02%.

"HERE'S THE BEEF!"



'000' Series power amplifiers

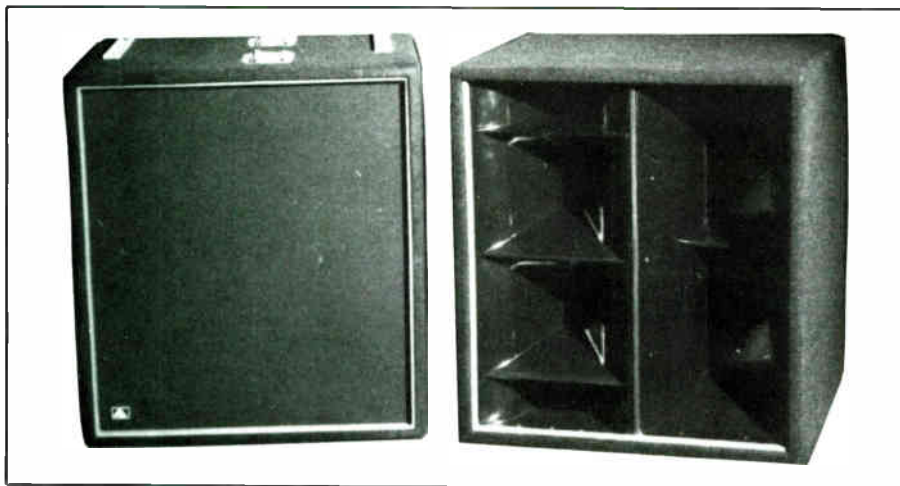


	RMS (20Hz - 20kHz: both channels)	bridged mono
DX 1000	375/8 600/4 800/2*	1200/8
DX 1000A	500/8 800/4 1000/2*	1600/8
DX 2000	400/8 600/4 1000/2 1500/1*	1200/8 2000/4
DX 3000	550/8 900/4 1500/2 2000/1.5*	1800/8 3000/4

THD (20Hz - 20kHz) :0.05% within rated power/IMD SMPTE : 0.002% within rated power

Hill Audio, Inc. • 231 Marquis Court, Lilburn, GA 30247, U.S.A. • (404) 923-3193 • TLX 293827 HLAD
 Hill Audio, Ltd. • Hellingbourne House, Hellingbourne Kent, ME17 1QJ, England • (062 790) 555/6/7 • TLX 966641 HILL
 Headwater Industrie • 635 Caron Avenue, Windsor, Ontario, N9E 5B8, Canada • (519) 256-2454

Circle #046 on Reader Service Card



PA Concepts' Wonderbox

PA Concepts Wonderbox

Wonderbox, from PA Concepts, South Holland, Illinois, is a compact, ultra-high power, high fidelity, time and phase coherent speaker system intended for venues of 5,000 seats or more. It is specifically designed as an easy-to-use, pre-equalized high-output package, minimizing costs by reducing truck space and manpower.

The Wonderbox is all horn loaded and tri-amplified, employing two 12-inch speakers, two aluminum diaphragm compression drivers, and two titanium diaphragm compression drivers, all housed in a single enclosure. The system yields a frequency response of 80 to 20,000 Hz [± 2 dB] with uniform coverage approximately 60° horizontal and 40° vertical. The Wonderbox is designed to be used in conjunction with PA Concepts' Power Demand Processor and the Intersonics SDL TPL-2 servo-drive subwoofer, which extends the system response down to 25Hz.

Circle #140 on Reader Service Card

WHO MAKES THE HIGHEST QUALITY "ONE BOX" HORN LOADED SYSTEM? ASK EAW. WE INVENTED IT.

In 1978, **EAW** in conjunction with Carlo Sound, invented the "One Box" horn loaded flying system incorporating the advantages of proper horn loading with the ease of rigging that a "One Box" system offers.

And while every single "One Box" system manufacturer has duplicated the **EAW** concept, there's one thing they haven't been able to reproduce: **EAW**'s superior sound quality.

EAW's exclusive advanced technology includes the center displacement plug mid bass horn design for perfect control of off axis response above piston band... polyurethane reinforced construction for complex surfaces that precisely match the mathematical models with absolute acoustical integrity... Time Offset Baffle design for phase coherence at the critical mid/high frequency crossover enabling ruler flat response through the crossover region without the need for special signal processing equipment... Forsythe bent bass horn design offers smoother air loaded impedance for wider bandwidth and greater efficiency.

The result? By using **EAW**'s "One Box" Series Systems you're assured the highest return on investment in terms of both sonic and financial performance.

The **EAW** KF550, KF400 & JF500 "One Box" Systems: For Applications That Require The Best!

Eastern Acoustic Works

Eastern Acoustic Works, Inc • 59 Fountain Street • Framingham, MA 01701

Tel: (617) 620-1478 TWX: 7103807630

Japan: Unicus, Tokyo Tel: 03-662-8518 Telex: 871-29440

Europe: HPS, Amsterdam, Holland Tel: 020-233954 Telex: 844-1412

Australia: Audio Engineering, Sydney Tel: (02) 571236

Venezuela: AudioRama, Caracas Telex: 395-26551

Circle #047 on Reader Service Card



Tangent Powered Monitor Mixer

Tangent of Phoenix, AZ, has announced the arrival of the PCM-8, the industry's first powered monitor mixer. The unit replaces a separate mixer, two stereo amplifiers, and multiple interconnects with one compact 8 x 5 rack-mount monitor system with four built-in amplifiers (130 watts each), at a suggested retail price of \$2,000. Each input channel includes a mic splitter, gain, pad, ground lift (for eliminating ground loops), phase reverse, and a mid-frequency sweep control in the three-band equalizer. Each output features solo, low cut filter, reverb return, master level, independent bus output, and VU meter with peak LED. Phantom power and isolation transformers are optional. ■

Circle #141 on Reader Service Card

“SWISS ARMY MIXER”?!



We think you'll agree it's the perfect nickname for the
SM 26 SPLITTER MIXER

Tucked very neatly into a single rack space steel chassis are:

- Master L & R inputs with stereo level control*
- Six mono inputs and six mono outputs with level controls.*
- Six dual function mix/pan controls*
- Master L & R outputs with stereo level control*
- Built-in variable gain for -10dBV/+4dBm interface*
- Left and right expand outputs for daisy-chaining*

This 5 lb. grab-bag of ins-outs-and-pots will **SPLIT, MIX, PAN BOOST, CUT** or any combination of the above to solve an unbelievable variety of signal routing problems. For starters the SM 26 will perform:

FLEXIBLE EFFECTS ROUTING, ZONE LEVEL CONTROLLING, ADDITIONAL MONITOR BUSING, LIVE RECORDING SPLITTING, KEYBOARD MIXING AND MONITORING, INTERCOM SPLITTING, LINE BOOSTER AMPLIFICATION, ETC., etc., etc.

Clever users are continually discovering new and ingenious uses for the SM 26. At only \$329 suggested list price, the SM 26 is a delightful solution to a wide variety signal routing needs.

Ask for a free copy of Rane Note 108 for further mouth-watering details. And the next time you get your signals crossed, **REMEMBER THE SWISS ARMY MIXER...** from Rane of course!



6510 216th SW, Mountlake Terrace, WA 98043 (206) 774-7309
Canada: Headwater Industries, 635 Caron Ave. Windsor, Ont. (519)256-5665

Circle #048 on Reader Service Card

by Bruce Nazarian

In an earlier column, I described the three most common types of clock signals used in computerized production: TTL, FSK, and SMPTE Time Code-derived. As experience in this type of pro-

duction grows, and increasingly sophisticated interfaces becomes available, more and more computerized productions are turning to the use of SMPTE-derived clocks. There are several reasons for this.

First, many SMPTE-reading "intelli-

gent interfaces" ("clock boxes") are now available on the market. (You will need at least one of these to generate a MIDI or TTL clock from SMPTE.)

Second, using SMPTE allows more control over the tempo of the finished product. Most of the "clock boxes" can manipulate the tempo of each beat of a measure. This allows unlimited flexibility in tempo programming.

Third, SMPTE allows you to synchronize your sequencers or other peripheral gear from anywhere during a track, removing the necessity of starting again from the top if you should stop the tape.

Fourth, by utilizing a single track of SMPTE code for most control functions (i.e., autolocation of transport, synchronizing audio-to-video, referencing automated mixdown data, and, of course, clocking sequencers and drum machines) a multi-track studio can use valuable track space to record performances, not computer data. All of these advantages are quickly making SMPTE the code of choice for computerized productions.

THE SMPTE-MIDI CONNECTION

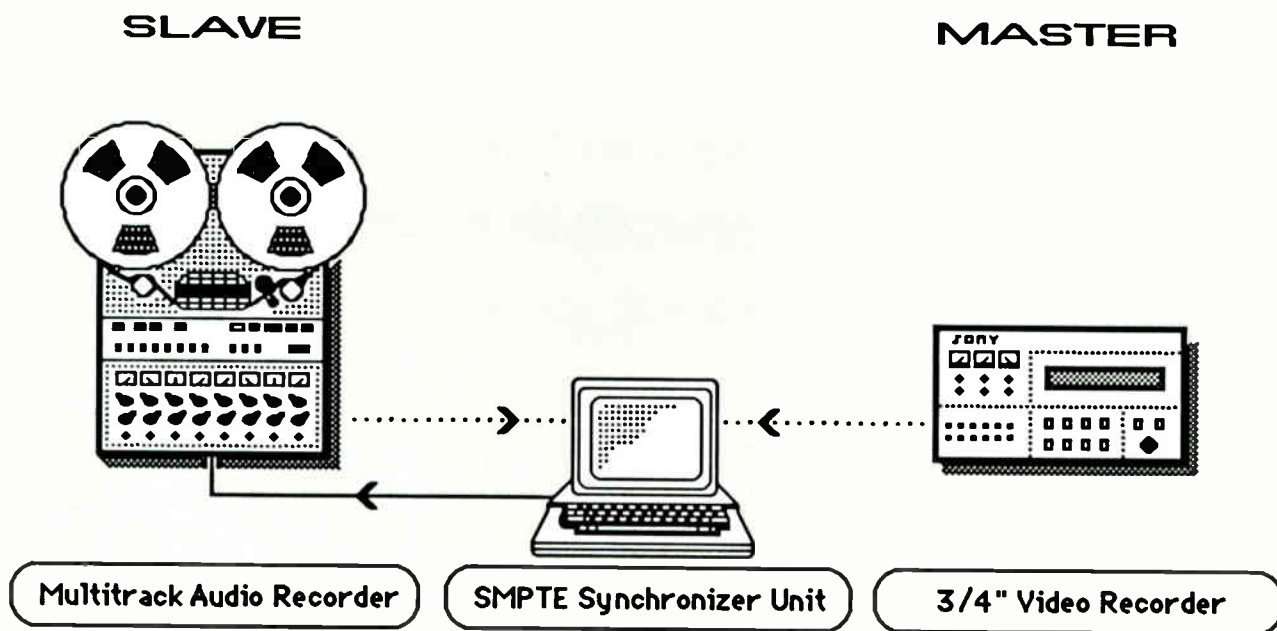


Fig. 1 - Audio-to-Video Synchronizer Setup

Dotted lines indicate SMPTE Time Code Tracks
Solid line indicates Capstan Control Line for Slave recorder

Understanding SMPTE

In the next few columns, we will be exploring the SMPTE-MIDI connection more fully (and showing some tricks along the way!). To make future discussions easier, let's dive into SMPTE terminology right now. Here are some basics you should know:

SMPTE Time Code—The actual code that is recorded on tape. SMPTE is an FSK signal that encodes a continuous stream of timing information on one track of a video or audio recorder. The information contained in the code enables SMPTE-based editors to mark any point on the tape, usually to within 1/30th of a second. Time Code is displayed in a format showing Hours, Minutes, Seconds, and Frames. For example, a time code value indicating Hour 1, Minute 6, Second 23, and Frame 28 would look like this on a video monitor: 01:06:23:28.

Frame Rate (frames/sec)—Frame Rate indicates the number of visual frames encoded during each second of time code. In the U.S., or any country using the NTSC video standard, the video frame rate is 30 fps. In countries that use the PAL or SECAM video formats, the video frame rate is 25 fps. There is also a frame rate for use with film images. This corresponds to the film industry standard of 24 fps. (Interestingly, some recent music videos have been shot on film in cameras running at 30 fps, to facilitate their subsequent transfer to videotape for editing and distribution!)

Drop Frame and Non-Drop Frame Without getting into a very technical discussion, you should be aware that there are two formats for 30 fps time code: drop frame, and non-drop frame. To resolve certain timing discrepancies between color and monochrome video signals, drop frame code was derived from the original SMPTE time code (now called non-drop frame). In short programs (less than ten minutes), you might not run into a problem, but in runs of ten or more minutes length, you will probably encounter the difference. In addition, some SMPTE clock boxes cannot process drop frame code when it is fed to them, and will lock up. In short, when using 30 fps code, be aware which format you have, and stick with it!

Sub-Frames—A frame rate of 30 fps gives a timing resolution of 1/30th of a second (33.3 mSec). That may be good enough for video editing, since our eyes integrate visual images slowly, but the human ear can hear time differences much smaller than that. To compensate for this, most SMPTE readers and clock boxes can now resolve one frame of SMPTE code down into smaller divisions. The Roland SBX-80 Sync Box can resolve each frame of code into 80 "bits." With this "sub-frame" or "bit" accuracy, we can now resolve MIDI clocks

WIS E M MUSIC

"VISIT THE MIDWESTS LARGEST MULTI-KEYBOARD SPECIALIST"

KEYBOARDS

KORG, SEQUENTIAL, OBERHEIM, AKAI
EMULATOR II, SIEL, BIT ONE, CASIO
KURZWEIL 250

DRUM COMPUTERS

LINN DRUM, LINN 9000, DRUMULATOR
DMX, DX DRUMTRAKS, KORG DRUMS

PA/RECORDING

CROWN, HILL, QSC, BOSE, ALLEN & HEATH
AKAI MG1212, 4 & 8 TRK SPECIALTIES

ACCESSORIES

ALL SOFTWARE, SEQUENCERS, STANDS, CASES
AUTHORIZED APPLE COMPUTER SALES, SERVICE

314-837-3030

11740 WEST FLORISSANT • FLORISSANT, MO 63033

Circle #049 on Reader Service Card



A SIGHT FOR SORE EARS.

If ears could talk, they'd scream for SONEX.

The only patented acoustic foam with a specially sculptured anechoic design can replace traditional studio materials for a fraction of the cost. SONEX absorbs sound, controls reverb, eliminates stray reflections, and kills standing waves. What's left is true sound. Your ears know. Listen to them. Simple to apply and economical to buy, SONEX blends with almost any decor and looks clean, sharp, professional. Call or write us for all the facts and prices.

SONEX is manufactured by Illbruck and distributed exclusively to the pro sound industry by Alpha Audio.

Alpha Audio
2049 West Broad Street
Richmond, Virginia 23220 (804) 358-3852
Acoustic Products for the Audio Industry



Circle #050 on Reader Service Card

MACMIDI™

The complete Macintosh music production system for the MIDI studio featuring

- **MegaTrack™**— Record and play back MIDI performances. Unlimited independent tracks **\$150**
- **MIDIWorks™**— Convert Megatrack recordings to Professional Composer™ or Music Construction Set™ for printing scores/parts/leadsheets. Convert written compositions to MegaTrack for overdubbing **\$100**
- **MacMIDI Sync™** or **SMPTÉ™** interfaces for connecting to MIDI, Audio and Video networks **\$250/\$350**
- **DX/TX Voicepatch Librarian™** for quick access to thousands of DX7 voices. Store 40 RAM cartridges/disk **\$150**

System package: Megatrack + MacMIDI SMPTÉ + 4 Casio CZ-101 synths (for 16 MIDI voices) **\$1750**

MUSICWORKS 18 Haviland Boston MA 02115 (617) 266-2886

MACMIDI™

- **DX/TX VoicePatch Librarian™** **\$150**
Store forty 32-voice DX7 Virtual Cartridges™ on one disk! Organize, load and save patches instantly.
- **DX/TX Voicepatch Disk™ #1** **\$100**
A disk of useful DX patches prepared by Dave Mash of the Berklee College of Music.
- **MegaTrack™** **\$150**
MIDI™ multitrack tape recorder/music data processor which records up to 72,000 note events and works with any size Mac.
- **MacMIDI 32™** Dual Interface **\$150**
Connect your Mac to one or two MIDI sources and send on up to 32 MIDI channels.
- **MacMIDI Sync™** **\$250**
All the features of MM32 plus FSK tape and drum box sync.
- **MacMIDI SMPTÉ™** **\$350**
All the features of MM32 plus SMPTÉ™ Time Code send/receive and drum machine sync.

MUSICWORKS 18 Haviland Boston MA 02115 (617) 266-2886

Circle #051 on Reader Service Card

Filament Winding Technology.



Custom Manufacturer of the World's Finest Fiberglass Horns.

DDS
DESIGN DIRECT SOUND
6850 35th NE Seattle WA 98115

Circle #052 on Reader Service Card

and events to within 0.4 mSec or less.

Offset—This term can have two meanings, depending on context. For synchronizing applications, offset is the term applied to the difference in time code between the position of the *master* recorder and the position of the *slave* recorder at that same instant. An offset

Synchronizer Controller—This is usually a computer of some type, with a keyboard for entry of the appropriate commands to efficiently use the synchronizer system. A controller is usually smart enough to calculate and maintain offsets, display time code for both master and slave recorders, and

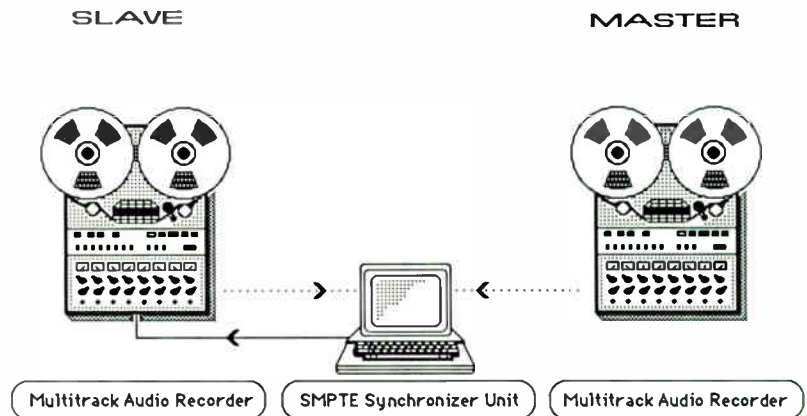


Fig. 2 - Audio-to-Audio Synchronizer Setup

Dotted lines indicate SMPTE Time Code Tracks
Solid line indicates Capstan Control Line for Slave recorder

may be programmed in intentionally, to "slip" the position of dialog or sound effects by a precise amount when mixing-to-picture. In music productions, offset is generally used to indicate the SMPTE location (in standard hrs:mins:secs:frms format) of the event that is programmed (usually the beginning of the tempo clock).

SMPTÉ Hardware

In order to implement a SMPTE time code system, some means must be provided to generate, read, and process the code and use it to control various devices. Basic SMPTE hardware consists of the following items:

SMPTÉ Reader/Generator—This unit can read and generate the various forms of SMPTE Time Code in common use: 24, 25 and 30 frames per second, drop frame and non-drop frame.

Chase-Lock Synchronizer is used with two or more recorders, either audio or video. Using Time Code previously recorded on one track of each machine, it simultaneously reads both Time Code tracks, while controlling the speed of the "slave" deck to "chase" and lock to the speed of the "master" deck. In audio post-production for video, this generally means the multi-track audio recorder follows the video recorder (Fig. 1). In multi-track audio production, this is how two multi-track recorders are synchronized to provide extra track capability (Fig. 2). Synchronizers may also control more than one slave deck, to allow for multiple dialog dubbing, or sound effects layback.

sometimes the reader/generator as well. Elaborate ones usually provide for remote control of all of these features via a computer communications bus (RS-232).

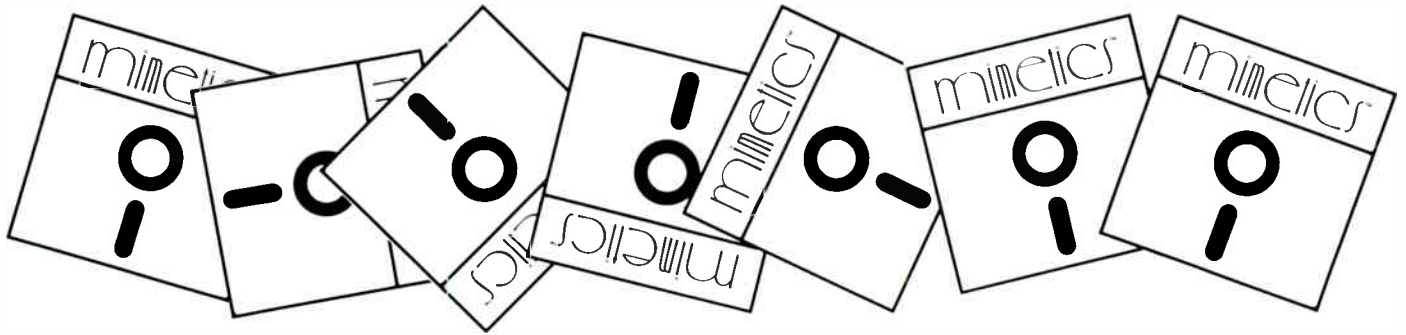
Integrated Systems

A good example of an integrated system utilizing all of these components would be a Cipher Digital CYPHER™ (SMPTE reader/generator) and Cipher Digital SHADOW™ (synchronizer), connected to and controlled by a Cipher Digital SOFTOUCH™ controller. Other integrated and modular systems are available from Adams-Smith, EECO, and others. Although synchronizer equipment of this caliber is frequently an investment of many thousands of dollars, even the "semi-pro" manufacturers are gearing up for SMPTE control. Fostex, famous for their 1/4-inch 8-track and half-inch 16-track recorders have recently introduced SMPTE-based remote controls and SMPTE-MIDI synchronizers for their affordable line of personal multi-track gear. Tascam has had synchronizer control connectors on their 8- and 16-track recorders for quite a while now. The Synchronous Technologies SMPL™ system has been readily available, promising to chase-lock two machines for less than \$2,000, and provide a MIDI and TTL clock box, to boot!

Next Time

Next month, we'll take a look at using the new generation of clock boxes for computerized music productions. ■

Move WITH THE Revolution



Computers, like the automobile, have become part of everyday life. With the advent of MIDI, computers and software have given new directions and momentum to music. Mimetics™ offers a full spectrum of software on a wide range of computers. So feel free to

be particular about choosing the computer which is suited to your way of moving. The following are descriptions of computers which we support, and our synthesizer accessory software for these movin' machines.

Commodore 64

"The Compact"

The economy of this computer outweighs its limitations.

Data 7™, Data 11™, Performance 7™

Apple II

"The Sedan"

People have been using this one for everything.

Data 7™, Data 11™, Performance 7™, Data 6™, Data ODX™

IBM PC

"The Truck"

Businesses can't do without it. Serious potential for serious users.

DX-Connect™, RX-Connect™, SX-Connect™

Amiga

"The Sports Car"

What the others will pretend to become. Lots of horsepower, lots of features built in.

DX-Connect™, RX-Connect™, SX-Connect™



The Mimetics™ Movers

Price

- **Data 7™** for developing sounds for the Yamaha DX7 \$125.00
- **Data 11™** for developing sequences for the Yamaha RX11 75.00
- **Performance 7™** for instant loading of banks of DX7 sounds 125.00
- **Data 6™** for developing sounds and sequences for the Sequential Six-Trak 95.00
- **Data ODX™** for developing sequences for the Oberheim DX drum machine 95.00
- **DX-Connect™** complete sound and bank editing for the DX-1X 6-operator synths 149.00
- **RX-Connect™** complete sequence editing for the RX11 125.00
- **SX-Connect™** "desktop" utility for record/playback of MIDI system info 125.00

NEW
NEW

mimetics™
corporation

... the professional software source!!

P.O. Box 60238 Sta. A, Palo Alto, CA 94306 (408) 741-0117

DEALER INQUIRIES WELCOMED!

Prices and availability subject to change without notice

Yamaha, Oberheim, Sequential, Commodore, Apple, IBM, and Amiga are trademarks of their respective companies.

Circle #053 on Reader Service Card



Products and Progress

by Craig Anderton

Digital reverbs (DRs) are becoming so affordable that just about any musician can have a world-class reverb sound. Forget about boinging springs, fussy plates, or having to dedicate a room to reverb—the new generation of DRs create all those sounds and more. This year's AES convention in New York showed just how far the field has progressed. DOD's \$800 DR should be available by the time you read this; ART, who helped kick off the low-cost DR trend with their 01, now offer the under-\$800 DR2a as well as the \$1,300, 16-bit, very clean sounding DR1. Alesis, the first to crack the \$800 price point, is developing the AI reverb, which for \$3,500 offers some very interesting features. A hand-held remote, which plugs into a control-less rack-mount mainframe, stores all programs in an EEPROM. The user interface on the AI is unreal—there's even an alphanumeric LED display (similar to the ones on the Oberheim DSX and DMX) that, in addition to indicating parameter settings and the like, reads out a complete

tutorial on digital reverberation in general and the AI in particular. The all-CMOS design results in a cool-running unit with no fan, and an emphasis on high-speed computer technology makes some algorithms available that are, so far, unique to the DR world. While not a budget DR, 16-bit operation, 100 programs, MIDI and several other features make \$3,500 seem like a reasonable price. And if your budget won't stretch quite that far, we can get back to earth with Yamaha's \$1,200 REV-7, a classy programmable unit that sounds good and offers lots of features.

Lexicon, whose PCM60 is generally considered one of the better-sounding reverbs for the price, now offers the PCM70. Yes, it sounds just fine; but the most novel aspect is the MIDI implementation that goes way beyond simple program changes. For example, functions can be tied to pitch bend, modulation wheel, dynamics, and other parameters. Thus you can program, say, a massive reverb "splash" on particularly loud notes, or create other effects that respond to your playing. Some people wondered what Lexicon was up to when they became one of the first signal processor manufacturers to obtain a MIDI ID number for system exclusive

information...now we know.

There's more to life than DRs, though, and Roland's MKS-20 MIDI piano module (shown for the first time at AES) is very impressive. We've heard the hype from other companies about this or that unit sounding like a piano, but Roland really did it—and we're not talking about a sampling unit, either. What Roland did was sample a variety of piano sounds (including Rhodes), plus a few other sounds, and *resynthesize* the waveforms. Resynthesis basically analyzes the sampled waveform, then uses relatively inexpensive signal synthesizing circuitry to re-create the sampled sound. What really makes the sound realistic, though, is that timbre is totally correlated with dynamics; playing harder produces the sound of playing harder, and there are 128 different timbres corresponding to 128 levels of dynamics. You have to hear the sound to believe it, and at under \$1,800 list this is quite a device.

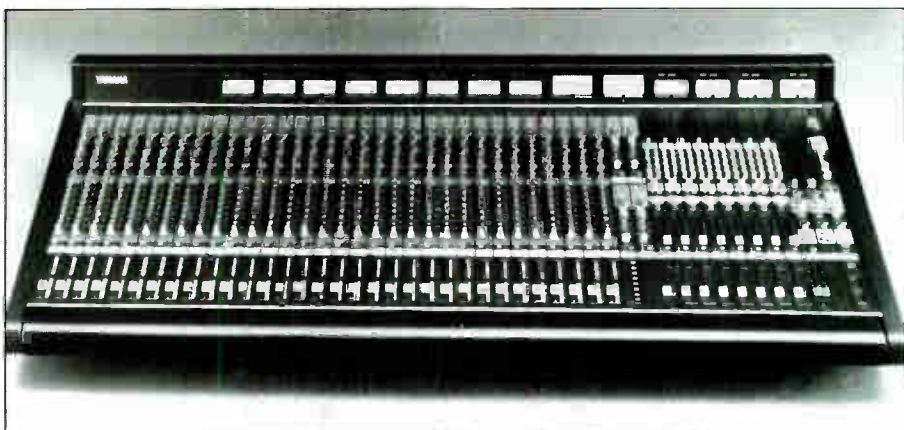
Roland has also come up with a cute little sequencer, the MC-500, which includes a 3.5" microfloppy drive and lets you store all kinds of sound parameters via system exclusive data. For example, if you change filter cutoff, pitch, waveform, and so on, the sequencer remembers all this stuff—not just simple program changes. One other Roland item: expect a sampler in January that lists for under \$2,000.

Now that sequencers (such as the MC-500) and software packages (such as Total Music) are starting to make use of song pointer information, more SMPTE/MIDI sync devices are starting to translate SMPTE to song pointer information. This allows sequencers, drum machines, and other song-pointer oriented units to "autolocate" to specific positions on tape. Therefore, if you start the tape at, say, the chorus of a song, the sequencer will also position itself at the beginning of the chorus so that when you start the tape, tape tracks and "virtual" tracks stored in memory will start at the same time. If you're planning on getting into sequencing, this feature will enable you to make the best use of SMPTE/MIDI synchronizers (such as the Roland SBX-80 or Synchronous Technologies SMPL system).

Emulator II fans will be happy to learn that a CD-ROM interface is forthcoming from Interactive Arts International. In case you're not familiar with the concept, CD-ROMs use standard Compact Disc technology to store gigantic quantities of computer data. (Atari, for exam-

ple, is toying with the idea of providing a complete encyclopedia on ROM to each purchaser of their proposed CD-ROM drive; others claim that all United States phone books could fit on a single CD-ROM). The Emulator's CD-ROM will store 1106 complete banks of sounds, and provide a ten second load time from disc to Emulator. The first two proposed discs include one of all available E-II instrument sounds, and a second disc crammed with sound effects. We have sure come a long way since the Mellotron. . .

Yamaha has stretched its mixer line into the truly high-end category with the PM3000. While designed primarily with sound reinforcement in mind, the overall flexibility should also appeal to more general recording needs as well. It's really tough to pinpoint a specific feature as being what sets this mixer apart; rather, the PM3000's main claim to fame is that it is a very logically designed and laid-out board, with flexibility as the paramount concern (lots of VCA grouping, multi-purpose mix matrix, complete talkback system, internal switches to change the normalised signal routing, etc.). The PM3000 is available with 24, 32, or 40 input channels; it's not inexpensive, but I think it gives good value for money.



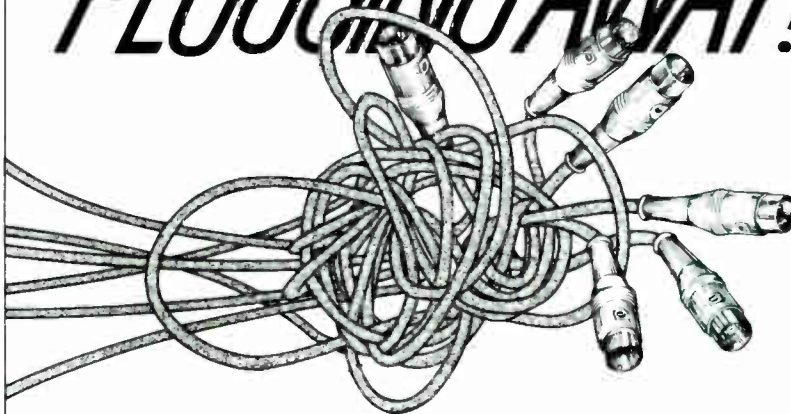
Yamaha PM3000 console.

Digital reverbs are becoming so affordable that just about any musician can have a world-class reverb sound.

I'd like to report on the new 16-bit Fairlight Series III as well as Synclavier's tapeless studio, but the demo rooms at AES were always so mobbed I couldn't get in. So, we'll close out this month with rumors of an inexpensive sampler add-on for the Commodore-64. Apparently, though, it's only going to be available in overseas markets. . . and that's too bad. What with instrument-to-MIDI, voice librarian, and sequencers available for the C-64, despite its age this is a computer that's going to be around for a while—and it's about time a sampler became available. Let's hope one appears before too long.

Well, I'm off to Musicom '85 in Holland, so expect next month's MI Update to have a somewhat European flavor. See you then!

DOES YOUR MIDI EQUIPMENT KEEP YOU PLUGGING AWAY?



So you're getting together a great collection of MIDI equipment: You can attach your Roland* to your Yamaha* to your Oberheim* by just plugging in a MIDI cable. Great, isn't it? But you are probably also starting to get back problems from leaning over your equipment re-plugging cables every time you want to reconfigure the set-up. The J. L. Cooper MIDI SWITCH BOX™ series has an answer to your MIDI patching problems. From a straight MIDI ON/OFF footswitch with LED indicator to a microprocessor controlled programmable 8 IN and 16 OUT unit, we have a switcher for you! Call us at 213-827-4884 for the name of your local dealer.

- **MSB-1:** a 1 1/4" rack unit with 8 MIDI inputs and 10 outputs. Each output has a rotary switch that selects which input is attached to that output. All connections are on rear of unit. Use this for manual control of large set-ups. *Retail Price \$395*
- **MSB 16/20:** the absolute top-of-the-line switcher. This 3 1/2" rack unit has 16 MIDI inputs and 20 MIDI outputs under microprocessor control. Three methods of changing the configuration are provided. First, by touching a button, a given output may be attached to one of the inputs. Second, the pressing of two buttons can call up one of 64 battery backed up programs that define the entire set-up. Finally, the unit may be set to receive MIDI program change commands from a MID master device. A display on the front panel shows both switching configuration and program number. A must for OX-1† owners! *Retail Price \$1395*
- **MSB-3:** just the answer to less complex switching needs. The MSB-3 has 2 MIDI inputs and 4 outputs, and can hold two patch setups selected via front panel switches. At the touch of a switch, the alternate patch may be selected, with an LED indication current patch number. May be used either counter-top or on floor as a foot-controlled unit. *Retail Price \$220*
- **MSB-4:** a foot operated MIDI ON/OFF switch with an LED indicator of status. Just the thing to turn a slave device on or off. *Retail Price \$75*

* Roland, Yamaha and Oberheim are registered trademarks of Roland Corp U.S., Yamaha International, Corp. and Oberheim Electronics, Inc.

† OX-1 is a registered trademark of Yamaha International Corp

JL COOPER ELECTRONICS

1931 Pontius Ave.
West Los Angeles, CA 90025
213/473-8771

Circle #054 on Reader Service Card

YOKO ONO'S STARPEACE: The Optimism Comes Through



by Rip Rense

By any measure, Yoko Ono is a remarkable human being. Her individuality, perseverance and hard work—in the face of an artist's everyday hardships as well as great tragedy—are undeniable.

Season of Glass, Ono's first album following the December 1980 murder of her husband, John Lennon, was somber, occasionally angry, and critically hailed. *It's Alright*, released in 1982 to critical acclaim, mixed sadness and hope—a pivotal moment in Ono's return from grief. Songs such as "Dream Love," "I See Rainbows" and "Never Say Good-bye" were compelling both within and without the sad context in which they were written.

Starpeace, Ono's new album, is brisk, bright and shouting with optimism. Originally intended to be a collection of "mother and child" songs, it grew into a more general exhortation to remain optimistic, to work and improve life. An excerpt from "Hell in Paradise":

*Mesmerized by mythology
Hypnotized by ideology
Antagonized by reality
Vandalized by insanity
Desensitized by fraternity
Sanitized by policy
Jeopardized by lunacy . . .
. . . Exorcise institution
Exercise intuition
Mobilize transition
With inspiration for life . . .*

The album, produced by Bill Laswell and Ono, is musically something of a freight train, what with the driving energy of Robbie Shakespeare (bass) and Sly Dunbar (drums) and background vocals by Nona Hendryx, Yolanda Lee Lewis and Bernard Fowler. It is subtitled *An Earth Play for Sun and Air*, reflecting Ono's and the album's concern with the need to survive.

Ono, now 52 and a proven survivor, spoke on the phone from the New York home she shared with Lennon, just a short walk from Strawberry Fields, a memorial garden to her husband containing plants and trees from 123 nations. Strawberry Fields and an NBC-TV movie about the lives of John and Yoko (which she sanctioned) are part of her continuing efforts to keep alive the music and spirit of John Lennon. Ono's own work seems aimed at keeping alive the spirit of us all.

She is currently editing videos for the new album, and is in various stages of other projects she isn't ready to discuss. She sounded bright and generally enthused.

Mix: The new album is relentlessly positive—

Ono: (laughing) Yes, I'm going to uh . . . keep on trucking.

Mix: Do you ever feel alone in this attitude?

Ono: Not really. I do get some feedback from people, you know, and there are people who are really being positive. I think things are going to change a bit.

AKAI...

The One Multi-Track Recorder That Will Make You Forget All Others!!



MG1212
12 TRACK MIXER RECORDER
\$6,995⁰⁰

ASK SOME OF OUR USERS:

Trevor Rabin of Yes
Lou Gramm of Foreigner
Stephen Stills of Crosby, Stills and Nash
Jeff Baxter of the Doobie Brothers
Ronnie James Dio of Dio
Randy Bachman of Bachman Turner Overdrive
Elliott Randall of Steely Dan
Bob Palin of Crystal Gayle Band
Nile Rogers, Producer of Mick Jagger

When you want to discover Solid Gold . . . turn to AKAI! Contact us to arrange for a private demonstration at your nearest franchised AKAI dealer.

AKAI

Professional Products

P.O. Box 2344 Fort Worth, TX 76113 817-336-5114

Circle #055 on Reader Service Card
World Radio History

Another Product of 

—FROM PAGE 82, STARPEACE

Mix: In Kurt Vonnegut's new book, *Galapagos*, he advances the notion that humankind's only hope of survival is to de-evolve; that our brains must become smaller for us to avert self-destruction.

Ono: Well, I think that was just meant as a sarcasm. I think that it's quite the opposite. I think that we're getting wiser because of the more complex situation we have to cope with. And I think the next age is going to be the age of wisdom. We are standing at the threshold of the age of wisdom.

Mix: The album seems like a push—a slap on the back. Very encouraging. Was there a single source of inspiration?

Ono: This whole album was a result of being with Sean, I think. For instance, early this year I was discussing a few things with my friends, acquaintances, and Sean was there with us. We were discussing in general how the world is going. He just said, "Well, the world is terrible, isn't it? Life is terrible." And I just tried immediately, as any mother would, to say "No, Sean, life is not that terrible, and we can make it better" and whatever the set statement is, you know—to try to make the child not be depressed. But then I thought, "What is this?" This is a terribly conventional thing I'm try-

ing to do to him. And actually, I'm not really working to make the world better. Of course, I'm trying my best, but since 1981 I've had this excuse that I'm only a mother now, and I'm going to take care of Sean and well, John and I have done enough of it, and whatever excuses. . .

But then I finally realized that if I'm not being myself, then I'm not living. There's that, too. For Sean's sake, and for the next generation, we all have some excuse not to do as much as we want to. I just thought, "well, I'm going to still go on being very outspoken." So, if anything, I think this album is very clear. There is no mystery about it. It's very clear and simple.

Mix: Right. How much more direct could you be than say "I Love You, Earth"?

Ono: Yes, and also "Children Power"—obviously Sean is again the inspiration. In that sense, I owe the whole thing to Sean.

Mix: The music on the record is similarly sweet and accessible as the music on *It's Alright*. Do you still feel you are experimenting musically, as an artist?

Ono: I think some of the things that I did in "Hell in Paradise" and also "Cape Clear," for instance, musically were not

just pleasant, but interesting; pushing the barrier a bit. Also, just in the segues, I did enjoy doing a few little things, like always having a little sound of nature or whatever. So there's some things going on. . .

Mix: I notice your scream is intact. Is that getting any harder to do?

Ono: No, not at all. But I kept it down consciously. In fact, it was very interesting. Bill Laswell is a producer with a very wide range of interest—from Miles Davis to Mick Jagger or whatever. But when you actually work with him, you know that his real love is for something very far out. And when I did "Hell in Paradise" and there's some sort of voice modulation there, I immediately knew that this was something he liked the most. So I said, "Use it sparingly, I'm telling you. Don't overdo this." There's much more that I did, and we made a conscious effort to use it sparingly so as not to offend people.

Mix: On the last album you used Sean's space gun instead of a hi-hat on "I See Rainbows" because you wanted more interesting textures. I hear a lot of percussive sounds on the new record I'm not used to hearing. Did you direct this?

Ono: This time around, Bill Laswell

SOUND REPUTATION.

The task of sound reinforcement is never simple—-the choice of equipment complex.

AKG has taken the guesswork out of microphone selection with low noise, reliable condenser microphones for distinct applications:

The C-535 is both durable and dependable. Practical features such as output and response attenuation make it ideal for both stage and pulpit, choir and chorus.

The C-567 lavalier is a small microphone which reproduces speech or music with fullness and clarity.

The C-568 short shot-gun microphone is only 10 inches long, yet has extended "reach" to cover those difficult spots.

For a sound reputation...

 **AKG**
ACOUSTICS

77 Selleck Street
Stamford, CT 06902
203/348-2121

brought in all these very good, top musicians, and they did help in a lot of ways. We didn't bring in space toys or anything like that. We left it pretty much like that, and added some animal sounds. I think the animal sounds are very interesting, too. I made a conscious effort to put them in, because it has to do with the survival of the species as a whole on the globe, and that includes animals as well. So that was to get some help from our friends including all the beautiful animals. Saying we have to survive...

Mix: Some of this theme carries over into "King of the Zoo"?

Ono: It's a double entendre, of course—it has to do with how we're treating animals in the zoo, but also, we are the animals as well, in the "zoo."

In 1981, I was still feeling terrible about it all. But every day I would take a walk in Central Park, and somehow I walked through the zoo, you see. And each time I passed the zoo, I kept thinking about John. And, of course, me, too. We were both like animals in the zoo. I kept thinking "king of the zoo..." Just a title I kept thinking. I had the whole vision, but I didn't have the words yet. I wanted to put it on *Season of Glass*, then later *It's Alright*, but it just didn't come to me, somehow. And this time around, I made a conscious effort to put it in.

Mix: I assumed it was about John.

Ono: It slipped in there once more. I mean, I didn't want to do it in a way that would make people say, "Oh, no, not again"—"She's not singing about John again"—so "king of the zoo" will do.

Mix: If you are talking about the John and Yoko movie, I have just one question. Why?

Ono: OK, one—it was a situation where my back was up against a wall. All the networks asked me to do it. And when I say all the networks, I don't mean just the three networks here in the United States, but in Japan and of course, Great Britain. The situation was that if I didn't OK one, it would just turn haywire in the sense that somebody would make a *National Enquirer* out of it. I had to consider what to do.

The Japanese networks, in all fairness, had very ample budgets, and their suggestions were just fine. But this was a story about John, and somehow it wasn't right. Britain was another story. They were coming on like "Well, look..." like they owned John. I realized that this is the story of John and Yoko; the two of us as a couple, as two people who became one. I felt that one of the reasons we chose this country to be our country and to live here, to give birth and bring up our child here and live here as a family was just that we believed in the American spirit. We were immigrants.

Actually, an American production would be the best in that sense; to understand us from that point of view—as immigrants. So that's how I looked at it.

Of course, the story can be told in many different ways. The story can be told from a Japanese point of view, because John was extremely interested in the exchange of the West and East, and understanding the East *through* that, somehow. To bring the East and West together. So his understanding and his love for the East was an incredibly interesting situation, as well. The world would have benefitted from knowing that side of our life. But that's another story. And also, there was the way he grew up in Britain and all that. Yes, Britain has the right to think it owns John, maybe, but somehow John is somebody who transcended all that, and doesn't belong to any nationality, in a way. He became a cosmopolitan person.

It's about a mixed couple living in New York, basically. Eventually, it's that. Then I decided on an American TV crew. So I interviewed them, and I got the top professional production and sort of relied on their expertise. And that's the best I can do. By doing that, once you decide that you're going to allow them to do it, you don't want to be a stage mother who's down there always trying to look into it. Their professional work has to be done without too much interference, you know?

Also, I'm sure you must understand, it's the fifth year since what happened. And I'm very much interested in keeping John's name and spirit going. Because I think it's something that's worthwhile for people to know. So it's a nice way—it's a marvelous opportunity for John and his spirit and his music to be known. It's a whole new audience. There's a whole new generation of people who really don't know about it.

Mix: It doesn't take long...

Ono: Right, it doesn't take long. So I know that everyone asks, "well, what do you think John would have thought of this?" Well, I'm not about to talk for him. But knowing John, I think he would have appreciated the fact that somehow an effort was made to expose his music and his spirit in [laughter] *prime time TV*, you know. Yes, he was a professional person as well, and he understood that sort of thing—if it's done in the right way.

Mix: People always ask those kinds of questions, "what would John have thought?"

Ono: Well, that's important. I think that it's very important that John's music would get the opportunity to be exposed to a whole new audience as well. This is one way.

So, in a way, my back was against the

If you've had your ear to the ground lately you will probably have heard about this.

Specification of the

FF ISA

input signal amplifier
The first of a series

Separate microphone and line level inputs, each with stepped sensitivity switch.

•
Mic - line changeover switch.

•
H.F. lift and cut with 5 switched turnover frequencies.

•
High Pass Filter: 5 frequencies.

•
Low Pass Filter: 5 frequencies.

•
Mid band lift and cut with continuously variable frequency and bandwidth.

•
L.F. lift and cut with 5 turnover frequencies.

•
E.Q. in/out.

•
Phase invert.

•
Transformers in and out give total floating freedom.

•
Input and output balance greatly exceeds that of lines likely to be used.

•
Frequency response falls away smoothly without out-of-band resonances, to way outside audio limits.

•
Immaculate square wave performance (with controls flat).

•
L.F. distortion traditionally associated with transformers is around 80 dB down at 20Hz.

•
High order harmonics are not generated in any condition of use.

"It sparkles"

Fully screened enclosed module.
Front panel 8¼" × 1¼".

Uses Amphenol 18 way 133 in-line rear connector and fits ISEP frame system.

Racks cases and P.S.U.'s available for outboard mounting.

Power requirements:
24vDC regulated or ±15v regulated (specify).

Customizing possible to interface with certain consoles.

FF

Foundation First

Electro-Acoustic design engineers
P.O. Box 38
Newmarket Suffolk CB8 7EG.
Tel: (0638) 730696

Circle #056 on Reader Service Card

wall, and that's how it happened—but maybe it was a blessing in disguise.

Mix: Sometimes it seems that if you leave things to other people, those things turn out to be—

Ono: Better?

Mix: Or just as good.

Ono: Also, TV needs a professionalism that I don't have, you know. It's totally a different medium. I have directed films and written scripts and all that, but I wouldn't profess to know how to do it in TV.

Mix: Being that close to the story doesn't necessarily help, either.

Ono: No, all that as well.

Mix: Strawberry Fields came into being quickly. Did that go as well as you had hoped?

Ono: I *still* can't believe that yes, it *did* happen. To observe from the outside, what's so difficult about it? Seems like a simple thing to do. But let me tell you, I could write two books about it. The past four years, how it went, etc. So finally it happened, you know. It's *beautiful*. There's 123 nations (who contributed to the garden), which is pretty good.

When it was 120, I said, "Hmmm, 120—that's one and two." Number three. Three is a number of art. I thought, "OK, well, John's artistic." So it's as a result of John's art. Then it was 121. Well, that's four. Four is a foundation. I thought, "Well, OK" 122. That's the world, you see. The people of the world. OK—people's garden! That's OK. Then I thought, "wouldn't it be great if it's 123?" Because six is a number of love and family, and for Star of Venus. And of course, Star of Venus is a sign for John's astrological sign, Libra, as well. 123! And just as I thought of it, the downstairs office told me the final number is 123. I thought, "Oh, it's so beautiful."

Mix: So each number above 120 would have been somehow appropriate?

Ono: Yes, yes. You know, any number would have done, really, but somehow 123, when it came out to be the family number, was beautiful.

Mix: You were recently part of a New Music Seminar discussion on proposed censorship of rock album lyrics, or rating albums. Did you accomplish something?

Ono: As any new experience, it was just very interesting. I thought I learned a great deal. It was nice to meet the other people, a different age. In the '60s, maybe John and I would have waved flags and marched in the streets, or something. Or went to Washington, D.C. and waved flags or whatever. I think the '80s is more like paperwork time. It's

more complex. Just waving flags is not going to do. As I said in the seminar, I think that, in a way, this might be a blessing in disguise because we're now going to open a dialogue about it. I'm not as naive to think that this is the first time they're talking about censorship. Our songs have been censored without any explanation. John and I went through that experience already. And also up to now, when they want to censor something, maybe some guy just picks up a phone and says [low voice], "OK, drop that line"—and we don't even know that *guy*. So that has been going on. But I think that because of the Constitution and all that—the legal level as well—I think the Washington ladies are going to have a very hard time doing something about it. I don't think it's going to be much of an issue, really. It was a symbolic statement, and I don't think it's going to have any real practical result.

Mix: Were you pleased with the Barbara Graustark documentary about you?

Ono: Yeah, I thought it was pretty good. There are shots that I am not very happy with—just personally you know—did we *have* to use that ugly shot, or whatever. But again, I think it's very good to leave it to somebody else. I'm one of those people who, before I would even think about it, would usually just do everything myself. And I think that's one of the things I had to learn.

Mix: I'd like to ask about a couple of the songs. "I Love All of Me" seems to suggest cooperation among different people—that everyone is engaged in some kind of struggle—

Ono: And there's no double meaning there. That's just not allowed, you see, when you're talking to someone of the future generation. They're very strong and wise people. It's amazing. So inspiring.

Mix: "Cape Clear"?

Ono: Cape Clear is an Irish cape.

Mix: The song is autobiographical?

Ono: Yes, it's autobiographical, I suppose. I went with Sean to a tennis match—Sean led me there, I suppose. It was around February. At that time, I was already thinking about going into the studio. It was *time* to go into the studio, for me. I was thinking about making a record with all the songs being about mother and child. You know, this dialogue in a one-parent family between mother and child. And I thought that was nice. I had all the songs prepared, and it was an interesting story. It wasn't just personalized. There are many one-parent families these days, and it had pretty general communication value as well, I thought.

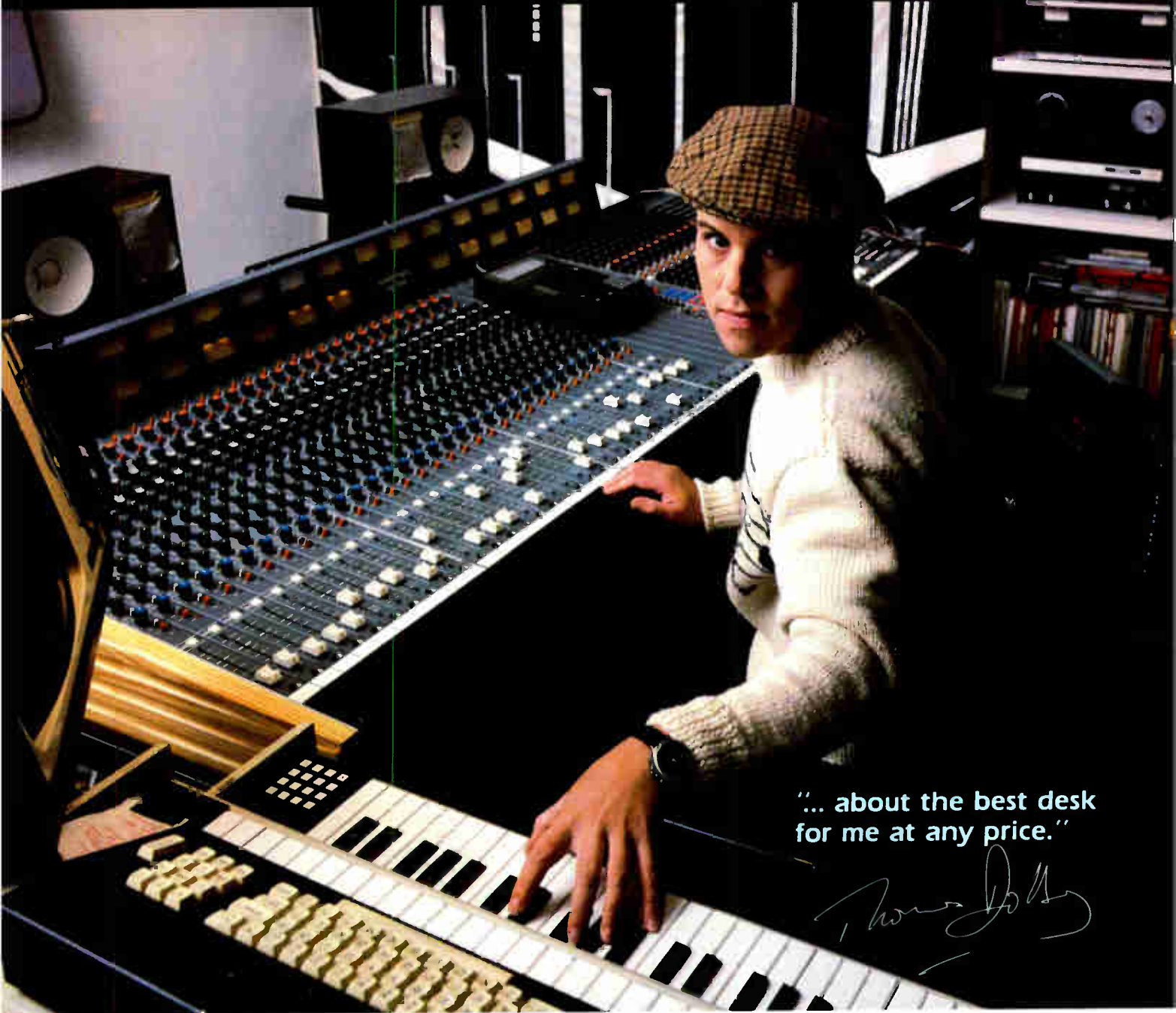
So I was thinking about these things

when Sean and I went to the tennis match. And I was just following the ball, really. Suddenly this Starpeace song came. I said, "Quick, quick! Pencil and paper," and just borrowed paper from somebody behind me and started to write the lyrics. And then I thought, "Why did it come at the time I was watching a tennis match?" Well, of course, I was just following the ball, and the intellect was not interfering for the message to come through me, which is good. But at the same time, I thought, "Why the ball?"

I suddenly realized that maybe we were just gods and goddesses up in the universe a long time ago, just sort of rearranging the balls and spheres or globes, maybe? And that kind of race memory that we have is expressed in these small tennis matches, you know—on a very small scale. It reminded me of the days when we used to play with balls up there. That's what I was thinking. And all these songs came to me around that time. I think "Hell in Paradise" was first. Then "Starpeace," "Remember Raven"—those four songs came all at once. So I thought it's not going to be a mother and child album. It's going to be about all of us, and I changed the theme then.

Of course, I didn't realize that this year is Children's Year. Next year is World Peace Year. I didn't know anything about this. I thought 'Starpeace' is such an important communication, and these people came to the recording studio and said, "You know about Halley's Comet?" I said, "No—oh, yes, I'd vaguely heard—it's October and April of next year." I thought there must be something there. Was that a coincidence I thought about at the tennis match? That was really amazing.

But you wanted to know about "Cape Clear." I had a flash about it since John's death—'82 I think. Anyway, what happened was, it was in Amsterdam when we did the bed-in. John and I and Kyoko (her daughter from an earlier marriage) left the hotel and went in the car. All the fans were surrounding the car, and the cops were there, and it was hard to get in the car. Kyoko said, "Oh, I forgot my Teddy bear." John said, "Oh, I'll get you another one," meaning he's the daddy who can get her twenty. I went along with it, too, because it was a sort of physically impossible time to go and get the Teddy bear. But of course, later, John and I both felt very guilty about it, because, well, you can't replace *her* Teddy bear. So that was just one incident that came back to me in a flash. I was just starting to write the song, you know, and of course I started to realize that it's about me. This time around, I'm the one who lost my Teddy bear, you know. So it's like a combination of Kyoko and me. In that sense it just became—yet



"... about the best desk
for me at any price."

"I put my studio together to suit my particular needs for songwriting, sequencing, and film scoring. I took a look at all the mixing desks around, but most of the facilities I needed were only available on ridiculously expensive desks. So when I heard about the Soundtracs CM4400, I never imagined it would turn out to be about the best desk for me at any price. So I bought one and I'm delighted.

Now I'm up-dating it with the CMS2 package which will automate the digital routing and muting against SMPTE timecode — positive proof of the company's commitment to continual software development at a reasonable price. I'm impressed — definitely affordable quality."

Thomas Dolby

Circle #057 on Reader Service Card

THE CM4400 BY



affordable quality

The CM4400 features:
Internal computer allowing 30 different mixes to be pre-programmed.
Pre-programmed triggerable routing patches.
RS 232 Interface for personal computer to display routing.
Up-dateable software.
The CM4400 is always up-to-date.



Dealer list and brochure from: Soundtracs Inc. 745 One Hundred and Ninth Street, Arlington, Texas, 76011. Tel: (817) 460 5519
MCI Intertek Inc. 745 One Hundred and Ninth Street, Arlington, Texas, 76011. Tel: (817) 640 6447
In Canada: Omnimedia Corporation Ltd. 9653 Côte de Liesse, Dorval, Quebec H9P 1A3. (514) 636 9971

again, I'm trying to write about Kyoko, but it turns out to be me. Then I thought this was one of the songs I would have to put in the mother/child album, as well.

At the time, it was called "Teddy Bear." Somebody said there was a song called "Teddy Bear" that Elvis made. I don't know any of that, so I thought maybe there is a word that rhymes with Teddy Bear, and I'd better change the title. I thought the first line should be the name of a place, or something. Then it's easier to find one that rhymes with Teddy Bear. But then I thought if I'm going to choose the name of a place, I'd better be careful about this; make sure a nice location is mentioned. Anything, I just

went to look at a world map. It was the weekend, and I was at Cold Spring Harbor, so I went to the library there and started to look through the shelves. I couldn't find a world map. Then I came across a book about Irish castles, and I just opened it. The first thing that hit me was an Irish map with Cape Clear on it.

I realized that Cape Clear is in Clair County, which is a county where John and I had an island. Clair County is spelled c-l-a-i-r, but Cape Clear in Clair County with the same meaning is spelled c-l-e-a-r. And that's the first word that jumped out from this book. All in all, I just took it as a message, because I couldn't find a world map. Cape Clear, which has a double entendre, how *beau-*

tiful. And I had been looking for the word, Clair, because the French one rhymes with Teddy bear, and Clair was a word I had always liked so much—even in my childhood. Somehow I liked it—*clair de lune*—the tone of it. In fact, John and I were saying, "If it's a girl, the name is Clair." And John said, "Don't use Clair, because there are so many Claires in Liverpool." So for the song, I thought I'd find a French location with Clair in it—probably a road or street—rue de Clair or whatever. But even when I was going to look at the world map to find Clair, it didn't feel right to use a French name.

So then that was solved by finding the Irish castles book. It's just a very complex feeling that was solved by this concrete situation where this book sort of jumped out from the shelf.

Mix: Albert Goldman is still working on his book about John, which many people fear will be a lurid and uncomplimentary thing. Has he approached you for input? Do you have anything to say about it?

Ono: He hasn't approached me. I've heard so much about this project of his—since '81, or whatever, and everybody's warning me about it. I've heard from fans pleading for me to stop it—legally. So by now, I'm pretty used to this issue. And my feeling is, why don't we just bless him and think of something more positive to do—than to second-guess what he's going to write.

And we have a lot to do, don't we? Right now there are so many incredible things happening. Basically, all of us on earth, I think, are joining together in one thought—that we'd like to bring about a beautiful, peaceful globe. A global peace is what we all want, isn't it? Nobody's arguing about that. Everybody wants it. So in that thought we are sort of unified in a strange way, which is beautiful. Instead of searching for the differences, we should think about the similarities in our thoughts, to try and somehow reach each other. And that's one common denominator.

Mix: What you're saying is exactly in the spirit of the words you wrote on the album, "Rainbow Revelation."

Ono: That's another reason to bring Sean up again. One of the reasons that I think this album is a very practical one. Well, practical is a very strange word, but it is. Let's say that each song is like instructions, almost, or suggestions. I'm hoping that through the songs and the written introduction that people might find a way to make life easier. That's all.

Mix: Well, that's *enough*.

Ono: Well, I hope so. I hope it would help some people. ■

OUR CLIENTS EXPECT AND RECEIVE AUTOMATION AND OUTBOARD AVAILABILITY. WE OFFER SSL AND STUDER IN A FACILITY THAT IS WELL DESIGNED, APPOINTED AND MAINTAINED.

For their patronage in our first quarter, we thank A&M Records, John Adams, Aircraft, Clarence Avant, Glen Ballard, Duane Baron, Bruce Barris, Kevin Beamish, the Blasters, Bob Brown, Francis Buckley, Budweiser, CBS Records, D'Arcy, MacManus & Maslus, Elektra/Asylum Records, Danny Elfman, Joey Gallo, Siedah Garrett, General Mills, Jamle Glaser, Jamie & the Smashers, Kilque, Klymaxx, Krystol, Dave Leonard, Nan Leone, Jolie Levine, Los Lobos, Carrie Lucas, Craig MacGowan, Cliff Magness, MCA Records, Toi Moritomo, Taavi Mote, Oingo Boingo, Teddy Pendergrass, Mark Price, Qwest Records, Kevin Reach, Red 7, Mary Riggs, Roar, Cindy Rosenthal, Shalamar, Loull Silas, Jr., Sln, Ellis Sorkin, Mark Stein, Patty Stein, Dana Strum, T-Men, Andy Taylor, Thom Trumbo, Vinnie Vincent, Lynn Weiner, Windjammer, Howard Wolen, Y&T and Terry Young.

WE'D LIKE TO ADD YOUR NAME TO THE LIST.

Encore
ncore

YOU DESERVE IT WHEN YOU'RE GOOD.

ENCORE STUDIOS, INC.
721 S. Glenwood Place,
Burbank, California 91506
(818) 842-8300
Telex: 697-2449 ENCO UW

FACT!

AUDIO PRECISION SYSTEM ONE:

Performs most audio tests 3 to 10 times faster than the fastest audio test and measurement equipment presently available.

Delivers industry-leading residual thd + n, noise, flatness;

tests 16-bit digital systems to manufacturers specifications.

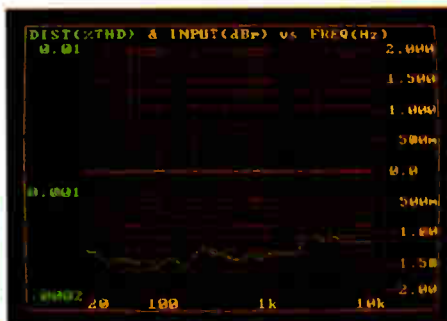
Provides real time test results graphed on screen; paper print-out at the touch of a key.

Comes bundled with software package for all common audio tests; runs automated tests 20 minutes out of the box.

Allows expansion with future modules for additional audio tests.

Total system cost, including computer and standard three year warranty on System One, is 1/2 the price of other automated audio test systems.

System THD + N	0.001%
Noise	1.5 μ V
22k 3W	(-114 dBu)
Flatness	0.05 dB



PROOF!

While we can't prove the distortion and noise specs without an actual demonstration, we can show the ease of use and flexibility of the graphics with a demo disk that can be used in any IBM® PC compatible computer.



If you would like more facts and the proof, return the coupon to:

Audio Precision
 P.O. Box 2209
 Beaverton, OR 97075
 503/297-4837 1-800/231-7350
 TELEX 283957 AUDIO UR

- I have enclosed \$10, please send demo disk and literature.
- Send literature only.

Name _____

Address _____

City _____ State/Country _____ ZIP _____

Company _____ Phone _____

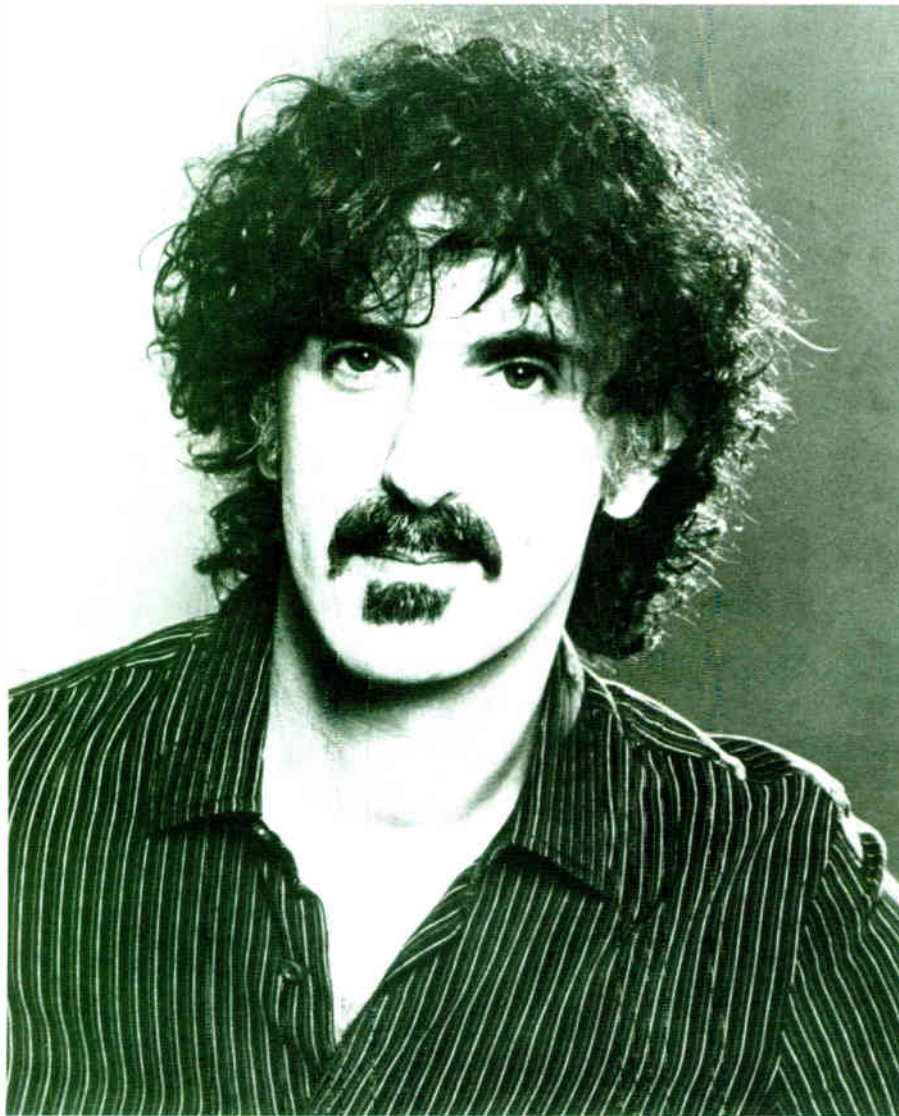
IBM is a registered trademark of International Business Machines.

Audio precision

Now, that's the way to test audio!

Circle #143 on Reader Service Card

World Radio History



Mr. Z Goes to Washington

by Rip Rense

In the beginning, there were the Wives. And the Wives did look upon the music of the children, and they did say, "Lo! This music is obscene." Then did come forth the Husbands. And the Husbands were senators, and they did look upon the music of the children, and they did say, "Lo! Yes, dear, the music is obscene."

And then there was Frank Zappa. And Frank Zappa did summon the power of

Art, and lo, he did change the voices of the Husbands into music itself. And yea, verily did Zappa cause the Husbands to sing the very things the Wives thought obscene.

And then he rested—his case.

Why'd ya do it, Frank?

"Well, because I thought they needed to have something nice in their stockings for Christmas."

It is probable that Zappa had other reasons for recording "Porn Wars," the avant-garde piece on his latest album,

Frank Zappa vs. the Mothers of Prevention. It is probable that those reasons have something to do with fighting proposed censorship of pop music.

Whatever the reason, "Porn Wars" will long have a bizarre niche in music history. Seven U.S. senators of anti-"porn rock" leanings plus the Reverend Jeff Ling of the Parents Music Resource Center—all chanting and howling about "gratification," "incest," "rape," "filth," and, well...

Among recurrent *motifs* in the work:

*Sen. Paula Hawkins (R-Fla.) snapping "fire and chains and other objectionable tools of gratification in some twisted minds" and "burrrrrr! burrrrrr!"

*Sen. Paul S. Trible Jr. (R-Va.) barking "rape!"

*Sen. Ernest "Fritz" Hollings chattering like a chipmunk, "maybe I could make a good rock star..."

*PMRC consultant Rev. Ling reading lyrics from a Mentors LP, including a phrase made famous on national television, "bend up and smell my anal vapors."

All of these words—and other words and phrases taken from the Senate Commerce Committee hearings on "porn rock" (or "*pone* rock," as Hollings calls it) are set against a backdrop of phase music and *musique concrete* passages—plus cosmic hog snorts, and an interjection first recorded for Zappa's 1968 ballet, "Lumpy Gravy": "This must be the end of the world. All the people turning into pigs and ponies. I can't let it happen to me."

The voices were programmed into a Synclavier digital computer system, and manipulated by Zappa and the Barking Pumpkin Digital Gratification Consort (Zappa plus engineer Bob Stone and Synclavier specialist Bob Rice) in tones ranging from "lowland gorilla" to "mosquito"—a nightmare undoubtedly never dreamed of by the "guest artists." But face it, senators—meeting you proved a nightmare for Zappa.

"You testify before one of those senate hearings and see how arrogant those bastards are," Zappa said. "They have blown themselves out of all proportion to reality... I can't blanketly accuse them all of being shithheads. I thought Exxon was okay (Sen. J. James Exon, D-Neb.). And I don't hate Danforth (Sen. John Danforth, R-Mo.). I do resent the fact that he would chair a committee when his wife was involved in part of the thing.

"But there are people there I wouldn't

Reflection Perfection...

...whether you're mixing down from multi-track or producing audio-for-video. TOA's new **ME Studio Monitor** outputs a crystal-clear mirror image of any input.

The ME's have symmetrically-arranged drivers. Take a look—the Left monitor is a mirror image of the Right monitor. What you see is what you get: stable and true stereo sound imaging within the confined spaces of recording studios and broadcast control rooms.

What's Your Reference Preference?

Do you prefer a 3-way system or a 2-way... or a full-range mini-monitor that sits atop your mixing console? Do you prefer mid- and high-frequency attenuators to tailor the monitor's output to specific room acoustics? Do you prefer a shielded **audio** system because you require **distortion-free video** monitoring?

It's your choice, because there's a different ME System to suit every need...

...each one easily handles the wide dynamic range & precise acoustic demands of digital and advanced analog audio-for-video.

Again and again and again...

Call or write for complete technical information.
TOA Electronics, Inc.

Professional Music and Entertainment
480 Carlton Court, South San Francisco, California 94080
(415) 588-2538

In Canada: TOA Electronics, Inc., 10712-181 Street
Edmonton, Alberta T5S 1K8, (403) 489-5511



©1985 TOA Electronics, Inc.
World Radio History



WEST MONROE

Music
and
Electronics

Complete
Pro Musical Needs
Call Us and Save!

featuring
KURZWEIL
Music Systems K250

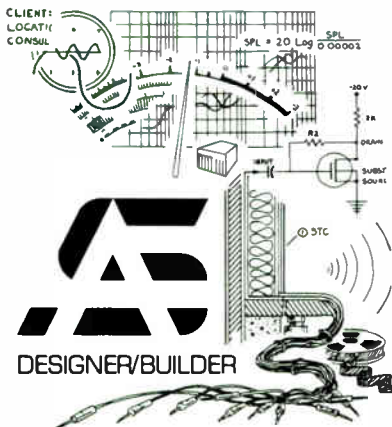
also
BC Rich Guitars
Trident Mixers

Also Stage Lighting
Available
Pro Discounts Available

PO Box 184
West Monroe, LA 71291
(318) 397-1488

Circle #058 on Reader Service Card

ACOUSTIC SPACES



DELIVERS CONCISE CONSULTATION
COST-EFFECTIVE DESIGN, INNOVATIVE
CONSTRUCTION TECHNIQUES AND
CUSTOM INSTALLATION. OUR IN-HOUSE
ENGINEERING STAFF AFFORDS COMPLETE
CONTROL OVER EVERY ASPECT OF OUR
CLIENTS' NEEDS.

RECORDING STUDIOS • MIXING/MASTERING ROOMS • SOUNDSTAGES
DESIGN/INSTALLATIONS/MODIFICATION OF SOUND SYSTEMS

ACOUSTIC SPACES
P.O. BOX 884
WOODSTOCK, N.Y. 12498
914-331-1726 • 914-338-8958

Circle #059 on Reader Service Card

trust with a plumbing job or anything else. They have no business writing laws for people."

The senators, under pressure from the PMRC, were considering much more than a "ratings system" for albums before, Zappa said, "I came along and said 'this is stupid.'" The PMRC originally, he said, gave a long list of demands to the commerce committee—including the censorship of concert performances. After the committee members read an advanced copy of Zappa's statements—which refuted the PMRC demands point-by-point on legal grounds—the PMRC modified its demands to only the "ratings system." Zappa's now-famous testimony of Sept. 19 addressed only this aspect.

Zappa has since been on a bonafide crusade, taking his campaign to every radio and TV station that will give him air time. He has spoken at Harvard University, and even made *Nightline* one memorable evening, eliciting patronizing compliments from Ted Koppel, apparently nervous that Zappa was going to say something you shouldn't on national TV. (Koppel repeatedly advised Zappa that he is "intelligent" and "articulate" after Zappa used the word "crap.")

So omnipresent was Zappa at one point that a spokesperson for the PMRC told this writer:

"Oh, good night! That man—there's no stopping him! Incredible. I don't know what his schedule is. He's everywhere! I think there's ten of him. I think Frank Zappa has been cloned!"

Zappa sees it another way—that the issue was ubiquitous. It sold soap.

"You have these wives of people in high places with their collars buttoned up to here, and they're so pure, and so nice, and so concerned, and so connected—and they come out with what appears on the surface to be this worthy noble cause and the media gives 'em mass exposure because it sells deodorant like crazy. You get to talk about sex, rape—you get it all in one package, and you don't need to show anything except the videos, which are free from the record companies."

Aides to the senators and Ling expressed everything from outrage to amusement over "Porn Wars." A spokesperson for Hawkins burst into laughter, and a source reported the senator found the idea "funny." Only a spokesperson for Sen. Slade Gorton (R-Wash.) seemed unhappy, and issued this brusque statement: "The senator really wishes there'd be more interest... in the federal deficit and things that mean things to people... The senator has better things to do than pay any attention to Frank Zappa."

(This, perhaps, was not surprising, considering that the senator's denunciation of Zappa during the committee hearings is on "Porn Wars," punctuated by hog snorts of godly proportion.)

No stranger to four-letter words in his recordings, Zappa feels that freedom of expression is an issue here—and that the senate's interest is fueled not only by Washington Wives, but by those good ol' societal building blocks, Money and Power. The record industry, it is widely thought, hoped that putting warning labels on LPs would sufficiently placate the senators and ensure passage of a bill to charge royalties on blank tapes.

Quoth Zappa:

"The senators are getting voter appeal by looking so just and concerned and so forth. On the other hand, they're playing power politics with the record industry, which is a \$4.4 billion-a-year business. So they can make the industry put on brown lipstick, and they're exalting themselves as senators. I think the whole bunch of them ought to be shipped out. They need to be raided. I asked for that in my congressional testimony."

The worst, he warned, has yet to come. Another four-initial group called PASS (Parents Against Subliminal Seduction) is seeking to censor rock concerts in San Antonio, Texas (a big heavy metal market) on the grounds that the shows are *unhealthful*. They've hired a psychologist to determine what legal age it should be "proper and healthful" to attend a live rock show.

"They're going to circumvent the First Amendment question," Zappa said, "by making it a health issue. And if they pass ordinances accordingly, those ordinances will be used as models by every other town in the country that wants to do the same thing. The PMRC brought all of these dipshits out of the woodwork."

Meanwhile, Zappa is relentless. He is producing an hour-long video concerning the issue—featuring animation and highlights of the hearings. He does not believe that testimony and television debates will stem proposed censorship.

"The only hope is the 18-year-old vote. If every 18-year-old voter in the U.S. registered to vote, you'd change the balance of power overnight. It's the only way you can fight it," he said.

And lo, did Frank Zappa seek to foretell the future:

"If the kids don't take the needle out of their arm or the beer out of their mouth, or whatever, and go down there and register, you can predict the bleakest beigned-out future. There's no way around it."

The SynthAxe Controller

Not a Guitar Synthesizer

The people who designed the SynthAxe started with the right idea: that "the conventional method of generating syn-



GET IT?

Too cute? Maybe, but a good description, since a demonstration isn't practical here. All we can give are the cold facts: 16Khz bandwidth (modifiable with the HF roll control), 8 programs, including gated drums, reverse reverb, some small structures, a few nice rooms and an absolutely huge hall. All very different and very usable. Zero to 200 Ms of predelay, continuously adjustable... variable decay time from very little on the small programs to over 10 seconds on the big ones... stereo inputs... stereo outputs... front panel mixing... infinite hold for looping vocals, strings or whatever into a never ending note. All the features and controls to duplicate any digital reverb sound you've ever heard, and a few you probably haven't. Want to know what Ecstasy sounds like? Hear it today at better music stores everywhere.



Circle #060 on Reader Service Card

Suggested retail price: \$749.00

HOW DO WE DO IT?

INDEPENDENT

SOUND

The *best* music production from CONCEPTION to MASTER.

415 ■ 929 ■ 8085

■ SAN FRANCISCO ■ CALIFORNIA ■

Circle #061 on Reader Service Card

thesizer control signals from a guitar by pitch-to-voltage conversion was inherently fraught with problems and limitations—the rich and ever-changing harmonics of a vibrating string and the difficulty of tracking its envelope, etc. So they set out to create a new instrument that allows a guitarist to control a synthesizer without having to make huge changes in his playing technique.

The SynthAxe actually has two sets of strings—a conventional-looking fretboard for the left hand and a separate set of six short “trigger” strings that are picked, plucked and strummed by the right. The trigger strings are velocity sensing and interface with the synthesizer much the same way a velocity-sensing keyboard does; depending on the synthesizer being used, the strings can modulate VCA levels, filter effects, attack and/or release times, etc. And damping can be done with either the left or right hand, as it is with “old-fashioned” guitars.

Pitch bend is tracked by a combination of sensing devices. A string bend code adjusts the pitch information for each fretted string, and an independent “whammy bar” (similar in action to the traditional kind) alters the pitch of all six strings equally.

The neck and trigger are at an angle relative to one another—the result, the manufacturer says, of extensive ergonomic research. Since it wasn’t necessary to space the frets according to harmonic relationships, the fretboard has a two-octave range and both ends can be reached and fingered comfortably—thanks to that angled neck.

Because of the fundamentally percussive nature of guitar dynamics, it was necessary to add sustain controls to the SynthAxe. Six piano-style keys, played by the right hand, control sustain for each individual string and are both velocity and pressure sensitive. There are also bass and treble group trigger keys, each relating to three strings independently of the others. A master trigger key, played with the heel of the right hand, fires off all six strings together and allows the player to hold a six-string chord with the heel of his hand while playing individual and group trigger keys with fingers and thumb.

In addition, an automatic trigger feature (with two switches for convenience) enables triggering with the left hand only, so left-hand runs can be combined with two-handed trigger string or trigger key passages. The left-hand trigger switches also have a locking mode which enables two-handed fretboard playing.

A set of pedals (standard equipment) add automatic hold, automatic capo and left hand string damp disable (canceling touch sensing on the pitch strings) functions.

—PAGE 96



**LUKATHER FOR
ROCKTRON**

**HOT PLAYER/
HOT PRODUCT**

“Rocktron products have become an integral part of my studio/stage setup. The HUSH II has definitely become the biggest wrench in the toolbox. Rocktron makes it juicy!”

Steve Lukather



SEE YOUR ROCKTRON DEALER.

ROCKTRON CORPORATION
2146 Avon Industrial Drive
Auburn Heights, MI 48057

Circle #062 on Reader Service Card

prophet 2000

Digital Sampling Keyboard Instrument

Sequential is proud to introduce the Prophet 2000, an 8-voice professional quality sampling instrument. Based on 12-bit digital technology, the Prophet 2000 will reproduce any sound you sample with astounding realism and studio quality audio fidelity. And that's just the beginning! Once you've sampled a sound (or selected one from our library of pre-recorded factory disks), you can modify it by using the many digital, analog, and keyboard controls provided. Each voice features a 4-pole, low pass VCF, a VCA, and velocity controlled, four stage envelopes. You can assign multiple samples (up to 16) anywhere on the keyboard. By assigning two or more samples to the same keyboard range you can create layered sounds and multiple-voice stacks for unison effects.



*Mfr's.
Suggested
Retail \$2499.00*

The Prophet 2000's velocity sensing 5-octave keyboard provides you with precise control over loudness, modulation amount, timbre, sample start points and crossfading between two separate sounds. The keyboard's weighted action responds positively to every nuance of your playing technique. Additional user-sampling enhancements include a variable input level control, complex sample editing (reverse, mix, truncate), and automated looping functions such as computer assisted zero cross-over and zero slope selection to help you find the best possible loop points.

The Prophet 2000 comes with multiple wavetables stored in on-board memory for building "traditional" synthesizer sounds. You can play these sounds alone or in conjunction with sampled

sounds by splitting the keyboard or layering sounds on top of each other. The on-board 3½-inch disk drive provides you with a fast and easy method of storing your sounds and custom programs.

The Prophet 2000 features complete MIDI implementation, as well as very impressive arpeggio capabilities including programmable up, down, assign, extend, auto-latch, and transpose modes.

Superior sound quality has long been a trademark of Prophet instruments. The Prophet 2000 adds to this legacy.

Visit your Authorized Sequential Dealer today and ask for a demonstration. Listen to the sound. The superior quality of the Prophet 2000 is as unbelievable as its low price!

SEQUENTIAL

For a complete catalog, please send \$2.00 to Sequential, Inc., 3051 N. First St., San Jose, CA 95134. Price subject to change without notice.

AUTOMATE

Your REEL to REEL

Finally, a cost-effective auto locator for your 2,4,8,16, or 24 TR. Installs in minutes and uses *no spare track!*

— INTRODUCING —

THE SV-1000 MINI-LOC

from Sound and Vision

features:

- Auto Record in/out
- Auto Loop
- Three search to cue points with smooth shuttle stopping
- Programmable trigger out for sequencers, drum machines, etc.
- Precise digital tape counter and tracking system with variable tach resolution
- Full transport remote

The MINI-LOC will work on practically any reel to reel with a remote port. Tascam-Teac, Otari, Fostex and many others. Call or write for specifics.

SOUND & VISION
Suite 928
8033 Sunset Blvd.
L.A., CA 90046
(805) 496-1518



See us at Booth #161 NAMM Jan 17-19

Circle #063 on Reader Service Card



**DeCUIR
SAMPLE CASE
COMPANY**

LOS ANGELES, CALIFORNIA

"EXCELLENCE WITHOUT EQUAL"

Your only source for the finest in sound enclosures for P.A. systems, amp racks, monitors and speaker cabinets when quality and affordability counts. All solid core plywood construction with premium carpet covering for a rugged performance. Most models come complete with fiberglass, phonejacks and recessed handles. Completely constructed and assembled in the U.S.A. A complete line of guitar and band instrument cases are also available.



WHOLESALE & DEALERS ONLY

DeCuir Sample Case Company
4012 So. Broadway Pl.
Los Angeles, CA 90037
Tel. (213) 233-4184

Circle #064 on Reader Service Card



At the SynthAxe labs in London, Lee Ritenour puts an Axe through its paces.

—FROM PAGE 94, SYNTHAXE

The SynthAxe can be connected to as many as eight synthesizers at once via the SynthAxe console. MIDI is the standard interface, with others available by special arrangement.

The idea for SynthAxe began in England in 1977 when composer and sound-track producer Bill Aitken became frustrated by his lack of keyboard technique and started looking for a way to express himself the way he could on guitar. He discussed his problem with engineer Mike Dixon, a guitarist and senior engineer at the studio Aitken was using, but more than a year passed before the two began collaborating on a solution. Dixon brought in another BBC engineer who found the idea challenging: digital designer Tony Sedivy.

A wrecked Yamaha CS80 was salvaged for sound generating electronics, and the breadboarding and experimentation began in earnest. By 1980, a one-octave fingerboard with discrete logic was transmitting pitch data to a Data General Nova mini-computer, which in turn drove a digital-to-analog interface with the CS80 electronics.

Research continued and the principals' careers progressed, and by 1982 Dixon was sales manager for Solid State Logic. Through his friend Rod Vickery of the Virgin Group Ltd., he persuaded Virgin to underwrite the SynthAxe project.

By this time the state of the synthesis art had evolved considerably. In addition to digital sound generation, the MIDI standard had been adopted and was spreading through the industry—making it possible for the SynthAxe to be optimized as a controller, and freeing the designers from concern with

sound generation. The pace of the story picks up from that point, with acquisition of a Fairlight for software development, prototyping, field testing and input from guitarists, the addition of mechanical designer Ken Steel to the team—and finally, introduction of the product itself in England in mid-1984.

SynthAxe will be shown at the Winter NAMM show in Anaheim this month. For further information contact the U.S. representative, Russ Jones, at (818) 993-4091 in Los Angeles. ■

Hank and Willie:

Duet with a Dead Man

by Rose Clayton

More than 30 years after his death, Hank Williams (Sr.) is one of the participants in Willie Nelson's ten-year (with CBS) anniversary duet collection, *Half Nelson*, along with Merle Haggard, Ray Charles, Julio Iglesias, Neil Young, and others.

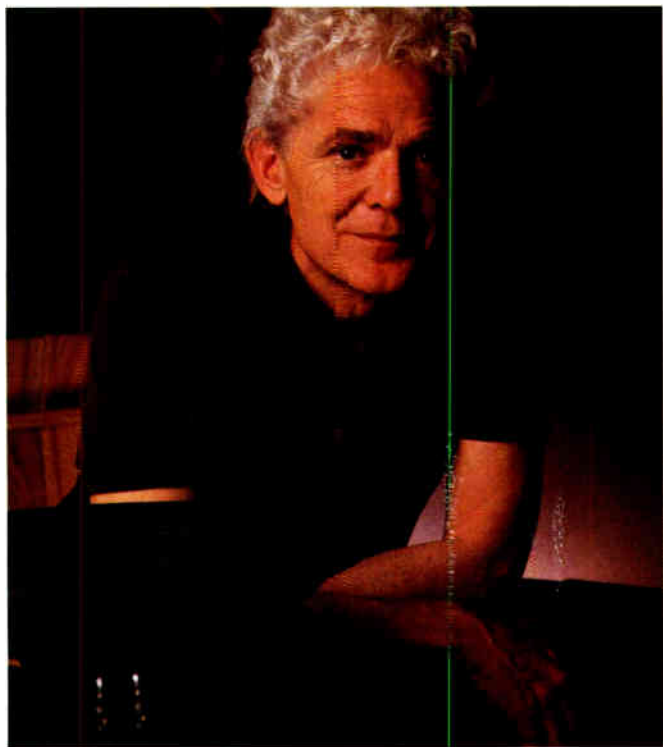
The project was a labor of love involving the research staff of the Country Music Foundation, Acuff-Rose Publishing, and CBS Records. The song, "I Told a Lie to My Heart," has never been released previously in any form, and in fact existed only as a demo disk recorded by Hank in late 1946 or early '47 when he became a staff writer for Acuff-Rose Publishing.

Researchers at the Country Music Foundation discovered the song in a collection of original demo recordings that had been preserved by Columbia Records staff producer Art Satherly and turned over to the CMF in 1983. In 1984, the CMF collaborated with Polygram Records on *Rare Takes and Radio Cuts*, a ten-song collection of previously unissued material and rare transcriptions from the CMF's collection. The project was compiled, researched and produced by the CMF's principal researcher Bob Pinson.

In the spring of '85, Pinson released 12 of the tunes Polygram had refused as *Just Me and My Guitar* on CMF Records. Seven of these songs had never been released in any form, and the rest were early versions of Hank's best-known songs. A bonus cut is "The Log Train," which Pinson says may have been Hank's last recording.

Hank's performance of "I Told a Lie to My Heart" was so excellent that CMF director Bill Ivey and the Foundation staff began searching for a way to make the recording contemporary without violating the original. Ivey approached Wesley Rose of Acuff-Rose and Rick Blackburn of CBS Records Nashville with the idea of a duet between Hank and Willie Nelson. Both Blackburn and

Before you choose speaker components, listen to Tom Hidley.



It's a good bet that of all the people reading this ad, 10 out of 10 know the name Tom Hidley.

One engineer we spoke with called him "the best engineer in the world." Another described him, a bit more colorfully, as "pretty damn hot."

But most of you know him as perhaps the foremost studio designer in the world today.

The reason we bring this up is that the speaker components Tom prefers for his clients are the ones we make.

TAD.

"I WILL USE ONLY TAD, UNLESS A CLIENT DEMANDS OTHERWISE."

In fact, he does more than prefer them. Insists Tom, "I will use only TAD, unless a client demands otherwise."

We, of course, are delighted that Tom feels so strongly. But it should also be of more

than passing interest to you, since you want the speaker components you use to be the best.

And on the subject of "best," Tom has some very definite opinions about TAD. "They are the most state-of-the-art, consistent quality products today. Nothing touches their performance, honesty, stability and transient response."

"NOTHING TOUCHES THEIR PERFORMANCE, HONESTY, STABILITY AND TRANSIENT RESPONSE."

There are some sound technological reasons for such enthusiasm. For example, we use only pure beryllium diaphragms in our compression drivers for high speed sound propagation and exceptional efficiency. We also assemble every component by hand, with tolerances as close as a millionth of an inch. And we use exhaustive and esoteric evaluation techniques — such as the Doppler laser and anechoic chamber — every step of the way, from original design right through to manufacturing.

"TAD MAKES THE BEST SOUNDING COMPONENTS I'VE EVER HEARD."

But for Tom, that's all frosting on the cake. "At the end of the day," he says, "it's what comes out of that speaker that determines success or failure. No matter what it measures, it all comes down to what it sounds like. TAD makes the best sounding components I've ever heard."

If you're in the market for professional speaker components, for yourself or a client, we hope you'll seriously consider what Tom Hidley has to say about TAD.

And thanks for listening.

TAD Technical Audio Devices

Professional Products Division of Pioneer Electronics (USA) Inc.,
5000 Airport Plaza Dr., Long Beach, CA 90815. (213) 420-5700.

Rose responded enthusiastically, and followed up with a written proposal to CBS.

"Willie called me from Hawaii as soon as he got the cassette," Ivey relates. "We agreed that we would take the original cut into the studio and add enough rhythm guitar to kick off the piece and allow space for Willie to add a guitar solo in the middle.

"The technical problems in adding guitar to Hank's original demo were formidable," Ivey continues. "The song had been cut direct to a 78 rpm acetate disk, using one microphone to pick up Hank's voice and guitar. There were numerous clicks and pops audible on the original disk, along with the hissing noise common to 78s." In addition, the frequency response limitations of the medium meant the guitar lacked the clarity of tone found in modern tape recordings.

"The performance itself was also a problem," Ivey says, "because it was quite informal and presented metrical and melodic inconsistencies." And because it was a publishing demo, the beginning and ending of the song were both abrupt, and Hank left no space where an instrumental solo could be inserted.

Ivey decided to add two measures of rhythm guitar at the beginning and a

verse of rhythm guitar to the middle for Willie's solo. "The goal at this stage of the project," explains Ivey, "was to produce a Hank Williams rendition of 'I Told a Lie to My Heart' that would also sound like a completely original Williams recording from front to end."

Ivey determined that Hank's original performance was pitched between the keys of D and E flat, and that he was playing the C position on his guitar using a capo on either the second or third fret. "I suspect he was playing either a large-body Gibson or a Martin—probably a Martin; the D string was slightly out of tune," he says. "I ended up using a Harmony Sovereign, with vinyl tape on the bridge covering about an eighth of an inch of the strings."

Engineer Rick McCollister and Woodland Sound Recording were recruited to duplicate the original sound of Hank's guitar. An old microphone was selected and covered with cloth. Background noise was taken from the inner groove of the demo disk and mixed in behind the new guitar part to match the sound of the original.

The result, according to Ivey, "was a complete recording with an additional guitar that kept intact the sound of the original performance. We sent this to Willie at his studio in Texas, and he

added the guitar solo and harmony vocals."

Says Nelson, "I always pick people to sing whose voice I want to hear with mine. Naturally, never thought of recording with Hank Williams. It was real exciting and real interesting. I was honored to get to do it."

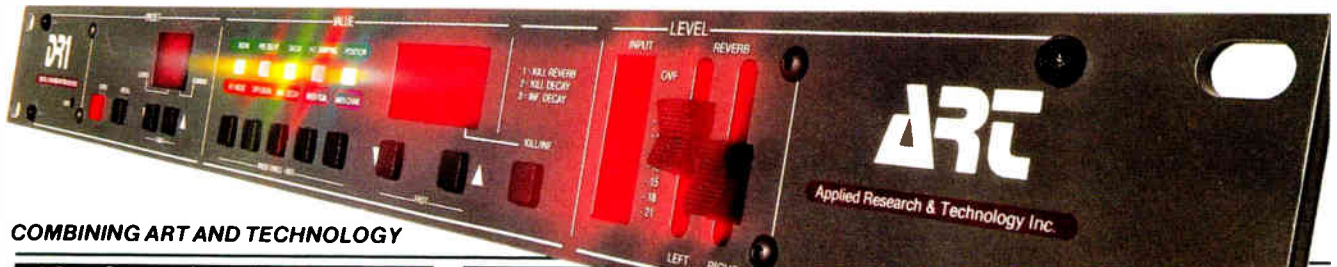
The resulting recording sounds as though Willie Nelson went back in time to join Hank Williams, rather than bringing Williams into the present. "The dignity of the final product" is the project's reward, says Ivey. "Making the history of country music relevant in the present is what the Country Music Foundation is all about." ■

Robert Cray's Blues Out of Bounds

by Robin Tolleson

Bluesman Robert Cray is hoping what he's heard is true—that artists who gain big followings in England soon follow suit in the States.

Cray's third album, *False Accusations*,



COMBINING ART AND TECHNOLOGY



In the business of professional audio, new products and ideas are being applied to expand the boundaries of creativity.

ART products are being used creatively in a growing number of studios, commercial installations, touring companies and broadcast/post-production facilities. This is the result of our dedication to the professional

audio industry - providing quality high technology performance.

When you're in a demanding audio situation, keep in mind that ART products are designed to help you achieve superior results with ease and reliability.

ART brings talent and technology together to produce excellence in audio.

We remain devoted to the art of professional audio...today and tomorrow.

ARC

Applied Research & Technology Inc.

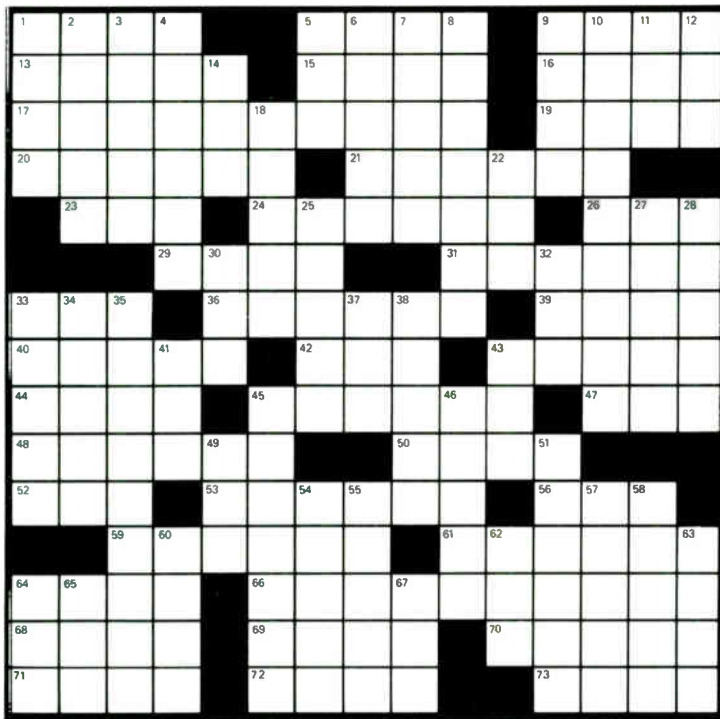
215 Tremont Street
Rochester, New York 14608
(716) 436-2720

• DR1 DIGITAL REVERB • 01A DIGITAL REVERB • DR2a DIGITAL REVERB • 1500 DIGITAL DELAY • 1 3 OCTAVE EQUALIZER • 2 3 OCTAVE EQUALIZER • PITCH TRANSPOSER PACKAGE

Circle #066 on Reader Service Card

MIX WORDS

©1986 Armand E. St. Martin



“TECHNOSOUND”

ACROSS

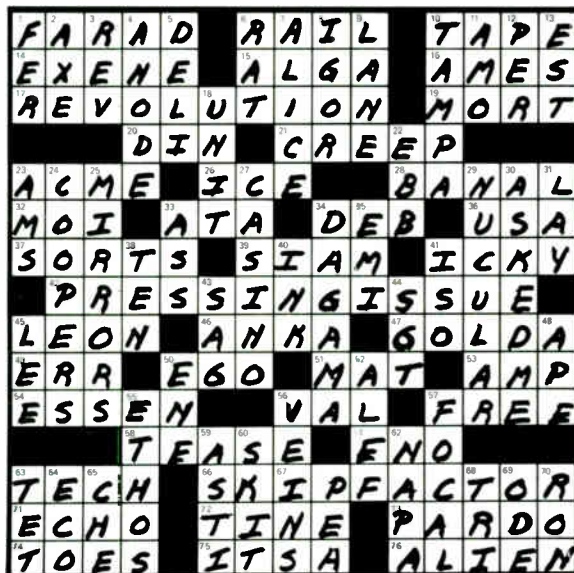
1. "The _____ Game," 1965
5. Shirley Ellis hit
9. Beam
13. H.S. test
15. Century plant
17. Dry
19. Zhivago's gal
21. Type of EQ
23. Of hearing
25. Perk on an artist's touring contract.
27. Tell
29. Direction
31. Type of recording
33. D-Day craft
35. Dina, _____ and Billy.
37. Wood finishing product
39. Fairlight product (abbr.)
41. Interpret digital signals
43. Italian money
45. Mrs. Chaplin and namesakes
47. Goof
49. Garret
51. Valley People "Dyna-_____"
53. Signal booster
55. Newt
57. Like more
59. Control devices (abbr.)
61. Type of computer port (abbr.)
63. Type of suit
65. Vegas or Palmas
67. Guadalajara party
69. South American Indian group
71. Without EQ
73. How long a Synclavier can record a sound
75. "The _____ is On" Jack Jones tune
77. Goddess of discord
79. Argentine strongman
81. Beer additive
83. Sandwich shop
85. Studio booking (abbr.)

DOWN

1. California wine county
2. Culture media
3. Slugger Roger _____
4. Got around
5. Common German verb
6. Baseball's guru?
7. Shakespearean sprite
8. Shut again
9. Design

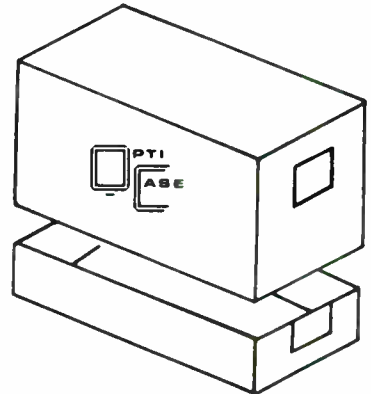
10. External dependent entity, like a "MIDled" synth
11. Onassis, to Jackie
12. Amek-_____ console manufacturer
14. Scottish relation
16. Recorder function
18. Add time to
20. More pleasant
22. Small stroke added to a letter
24. Piece of lanc
26. Messrs. Byrnes and Ames
28. Height prefix
30. Gratis tickets (abbr.)
32. Interacting pattern
34. MIDI, e.g.
36. Lode
38. Acoustic wall treatment, sometimes.
40. Pershing's outfit (abbr.)
42. Suitable
44. Made records
46. A raga could be called this
48. "_____ of Destruction"
50. "Such and Such Song, take 5," e.g.
52. Gape
54. Vellala
56. Thin as _____
58. Greek Island
60. Roman road
62. Agt., e.g.
64. Barbie's friend (pl.)
66. Certain monastic (abbr.)
68. Fall behind
70. Greek letter

Solution To December Mix Words



A.T.A. DESIGN TRANSPORT CASES
STANDARD CUSTOM O.E.M.

“THE OPTIMUM PROTECTION”



“Big Enough to Dare-
Small Enough to Care”



FEATURES:

- One-piece Wrap Aluminum Frame
- 1/4" Plywood Top and Bottom with 1/16th High Impact Plastic Exterior
- High Density Foam Lining
- Full Rubber Gasket Seal in Closure Groove
- Full-length, Nickel-plated Piano Hinge
- Steel Shell Handle, Leatherette Covered
- Nickel-Plated, Keylock Catches
- Built to Meet or Beat Air Association Transport Specification 300-II



Route 6, Box 235
Henderson, TX 75652
214/657-4663

See Us At NAMM Booth 2422
DEALER INQUIRIES INVITED

Circle #078 on Reader Service Card

hit #1 on the British independent charts (according to Melody Maker), and has risen into the Pop Top 20 to boot. For the 32-year-old guitarist and vocalist, it means getting stopped by strangers on the English streets. "I like that," he smiles.

Thrilled as he is by the success of *False Accusations*, Cray is already looking forward to working on his next album. "I've got some nice ideas for it," he notes. "I just broke up with my last girlfriend—'Bob not home. Bob gone too much'—so there's more inspiration now."

Since starting his recording career on the Tomato label in 1980 with *Who's Been Talkin'*, Cray and his band have worked an average of 250 nights a year. In 1984, he received four W.C. Handy National Blues Awards, among them Contemporary Artist of the Year

and Contemporary Album of the Year (for *Bad Influence*).

"A lot of those songs on *Bad Influence* were put together at a time when I was splitting up with this one girl; the song 'Bad Influence' was actually written about her. She knows that now, so it's all right," Cray says with a smile.

"For this new album, there's a lot of cheatin' and lyin' songs. It's not really that all this was going on, even though some of it was. What we basically try to do is write stories about life situations, and they call it the blues. Love and no love—just life. That's what we feel comfortable with."

Cray was introduced to the rigors of touring at a very early age, courtesy of the United States military. His father's Army duties took the family to Georgia, Washington, Alabama, Virginia and

Germany during Robert's childhood. The elder Cray was a lover of blues and gospel music, and Robert's first musical influences came from his father's record collection as he tinkled at the family piano.

"When I got a guitar in '65, it was because the Beatles came out and everybody got guitars," Robert recalls. "I was playing everything that was happening on the radio. I listened to B.B. King, Freddie King, started buying records of Magic Sam and Buddy Guy... I listened to everything—country blues, Robert Johnson, and even played a little bottleneck for a minute. I was really into B.B.'s sweet touch and Otis Rush's nice touch—real smooth. And then I liked the crazy style and percussive attack of Albert Collins. I liked the crazy guys and I liked them real smooth, too."

Gospel singers, blues belters, and even soul-stirrers like Sam Cooke have influenced Cray's vocal style. "One of my favorite singers is a guy named O.B. Wright, who passed on about three years ago. I like cats like Johnny Taylor, Bobby Bland... I like those smoother crooners, and again the total opposite—same way I like my guitar players—one way *and* the other, too."

From 1966 to '68, during the days when the soul of Stax Records was at its strongest, Cray was living in Virginia and discovering soul radio. There weren't any soul stations in the Northwest, where he'd been living. In the late '60s, he recalls, "you'd hear Sam and Dave and then you'd hear the Lovin' Spoonful. AM radio was like that... In Virginia, though, you had a lot more soul music on the air, mixed with gospel and other things."

Cray also listened to a lot of music while his family was in Germany, at least in part because he couldn't understand German television. But he had Armed Forces Radio to listen to, and the family bought a lot of records.

Robert Cray



PHOTO: JUDY WALKER

Finally, synchronisers as powerful as the machines they control.

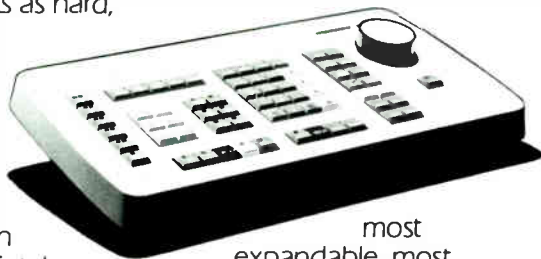
You know the problem. You've got five machines and your reputation on the line and your synchroniser seems to fight you every step of the way. The clock keeps running even when your tape isn't.

You need a computer based system so capable, yet so simple to use, that you can concentrate on your real job—editing. One that works as hard, fast and accurately as you do.

Relax. Editron has a synchroniser just right for you. Our model 500 is a multi-machine audio post-production system with detailed user interface intelligence and can run tape machines over a half mile away. It's perfect for large

studios and editing suites. Smaller facilities will appreciate the versatility of our model 100A rack-mountable synchroniser with the optional 200A remote controller.

Before you book your next session, do yourself a favor. Call us at (213) 275-1790 and arrange a personal demonstration of the most powerful,



most expandable, most economical synchronisers ever built.

editron

1616 Butler Avenue, West Los Angeles, CA 90025

Circle #067 on Reader Service Card

"When we were there, my parents were in their early thirties; they'd have parties, and you couldn't help but hear the music. I just always listened to music, everywhere."

And he played. "I guess traveling around had a lot to do with it, because when I moved to a new town I was shy about going out and meeting new friends right away, so I would stay inside and play my guitar."

In 1974 Cray formed a band in Eugene, Oregon, with bassist Richard Cousins and harmonica player Curtis Salgado. They began backing Albert Collins on tours up and down the West Coast—an association that continues to this day: Cray appears with Collins and Johnny Copeland on a new Alligator Records release, *Showdown*. "Albert's like 'Dad' in a way," says Cray. "It was really nice to do a record together. We pretty much knew how to back Albert up, so it was real nice to be able to do that in the studio and trade solos."

Recording engineer Bill Dashiell has worked on all three of the Robert Cray Band's albums—in between the group's extensive tours. "It takes so long to do them," he observes, "because they go out for months on end. You're working for a week solid and—BAM!—they're gone again. This latest album took more than a year to put together."

"Robert's performance is real consistent, and always good because he's out there playing all the time. His chops are always kept at a certain level. If anything, sometimes he's a little tired when he comes in off the road."

Cray, says Dashiell, "is not studio-oriented, so he doesn't demand much. He's interested in the overall performance. In fact, he usually isn't even there for the mixes because he's out on the road." The tracks were recorded in Los Angeles at Sage & Sound and the Music Lab, and overdubs were done in the warehouse-sized room at Haywood's.

Dashiell likes to use an M-49 to record

Cray's vocals ("I'm a tube guy"), and he uses the same mic for the room sound on the guitar. He puts a heavy dynamic mic—an SM57 or Sennheiser 421—right on Cray's guitar speaker. There aren't a lot of effects in the guitar sound. "Those that we use, generally speaking, come right out of the amp," says the engineer. "He might snatch a box from somewhere, a phaser or compressor or something, and then I do the usual amount of squeezing when I record it, and I add a little bit of echo."

"Mainly I try to get it in a nice, live room to begin with so it's nice and beefy. Robert likes that treble range—his voice and guitar are always very bright and trebly."

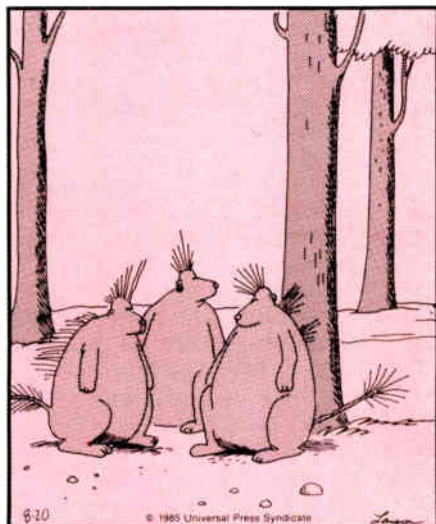
The Cray Band records together in the studio, preferring to use a minimum of overdubs. Dashiell makes sure the

levels are good and conditions optimal even when Cray is doing "reference" vocals, because chances are the singer will nail it on an early take. The same goes for guitar solos. "We put him in a booth, and he sings and plays along," says Dashiell. "Sometimes he'll get a good guitar solo, but we do have the option of redoing it if we need to."

In forging his new blues from the different styles of music he loves, Robert Cray hasn't looked solely to guitarists for instrumental inspiration. "There are certain notes and things by certain people, somebody funky like King Curtis—maybe Charlie Parker might have laid down a line, something real simple and short, but maybe I can get an idea from it. You can get ideas from any instrument. You can take it and apply it to your own axe." ■

THE FAR SIDE

By GARY LARSON



Punk porcupines

PRODUCTIVITY.

Imagine if Mozart were alive today how technology might maximize his creative genius. The production process has always maintained the same goals: shaping creative ideas into a finished product. Today's technology not only allows you to be more creative, but more efficient in your productions through the use of automation, synchronization and computer sequencing and editing. And at remarkably affordable costs.

Whether your needs are for creative music, professional recording, broadcast, production or post-production, Leo's Audio and Music Technologies is uniquely suited to supply your equipment needs. Leo's incomparable selection, systems interfacing, product training and professional services (including maintenance & customization) are just what you need to maximize your genius.

leo's audio and music technologies

Anticipating the needs of musicians and audio professionals since 1956.

5447 TELEGRAPH AVENUE • OAKLAND • CA 94609 • (415) 652-1553

Circle #068 on Reader Service Card

PLAYBACK

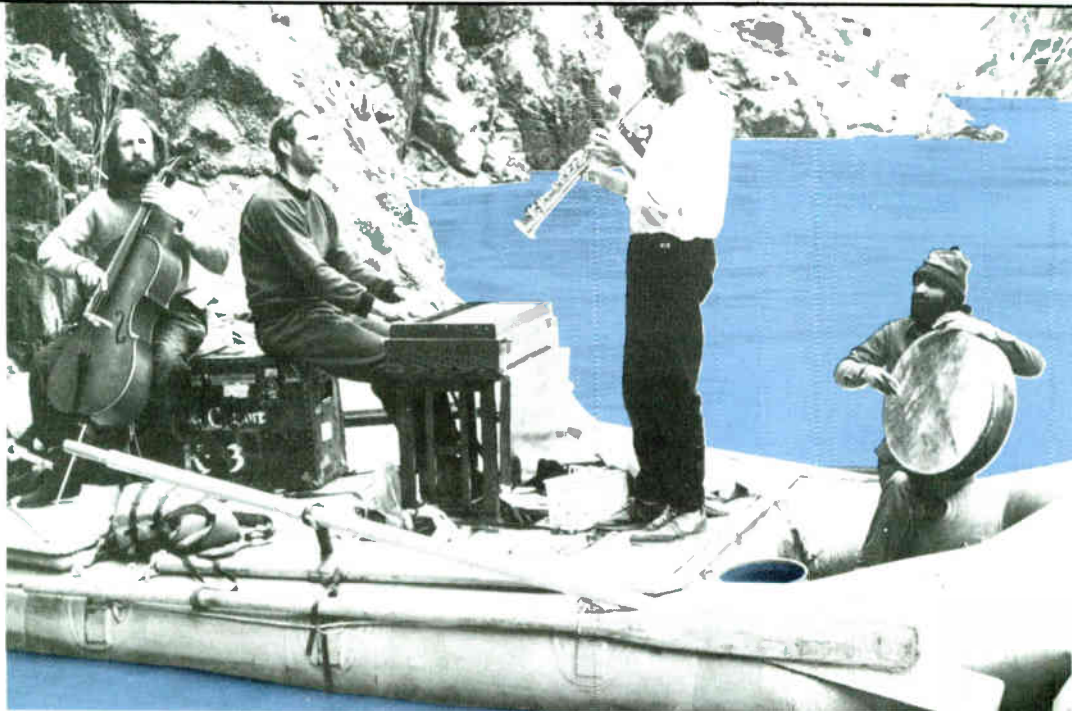


PHOTO JOHN LYDDON

Playing on the Colorado River(L-R): Eugene Friesen, Paul Halley, Paul Winter, Glen Velez.

PAUL WINTER'S STUDIO IN THE WILD

by Bruce C. Pilato

"Everytime I try to put words together to describe my experience in the Grand Canyon," says saxophonist and naturalist Paul Winter, "I fall all over myself. It's beyond the meager power that words have to describe life. My best answer is simply in my music."

This past October, Paul Winter was finally able to unleash *Canyon Consort*, a musical dream that had consumed his energies for over 12 years. An album and film documentary recorded throughout the Grand Canyon and in New York's Cathedral of St. John The Divine, (the world's largest Gothic church), it chronicles his remarkable search for the ultimate ambience, and more so, the supreme musical inspiration. A true labor of love, the project is the result of four extended (and often treacherous) recording expeditions through the Grand Canyon and several separate sessions recorded at the cathedral, both over a five-year period. The estimated cost was nearly \$350,000.

"The Canyon and the cathedral have such an overwhelming impact on you as a person that anything you do there is done from a more holistic space within yourself," he says. "You feel put back together; connected to the earth. The power of nature, or in the case of the

cathedral, the power of the architecture, has the effect of awakening the senses and clearing the mind, at the same time. The arrogant chatterbox that runs us most of the time is sort of disarmed by the overwhelming power of the spaces. As a result, you become more integrated."

In the effort to merge the natural sounds of the Canyon with their own serious musical compositions, Winter and his group, The Consort, spent over two months there (in four different trips), transporting their instruments, recording and film gear, and living supplies in rubber rafts, down the Colorado River and over spectacular rapids. The additional recordings which begin and end the project are taken from the cathedral where Winter is an artist-in-residence.

The result can be seen in a breathtaking hour-long film, made by David Vassar and John Lyddon, and scheduled to be aired on PBS. Highlighted by the brilliant natural scenery of the Canyon, and the Consort's gentle score, it was mixed by three-time Academy Award winner Mark Berger. It has also been recently released on a Hi-fi stereo home video cassette and has become one of the fastest selling nature-oriented videos ever. The record and CD are just as effective, and are available on Winter's own Living Music Records.

"This is not simply music *inspired* by the Grand Canyon; this is music of the Canyon," says Winter of the album. "We tried as much as possible to let the echoes, waterfalls, bird calls and other natural sounds guide us. Although we have barely touched the challenge of translating the spirit of the Canyon into sound, we are proud of this first step."

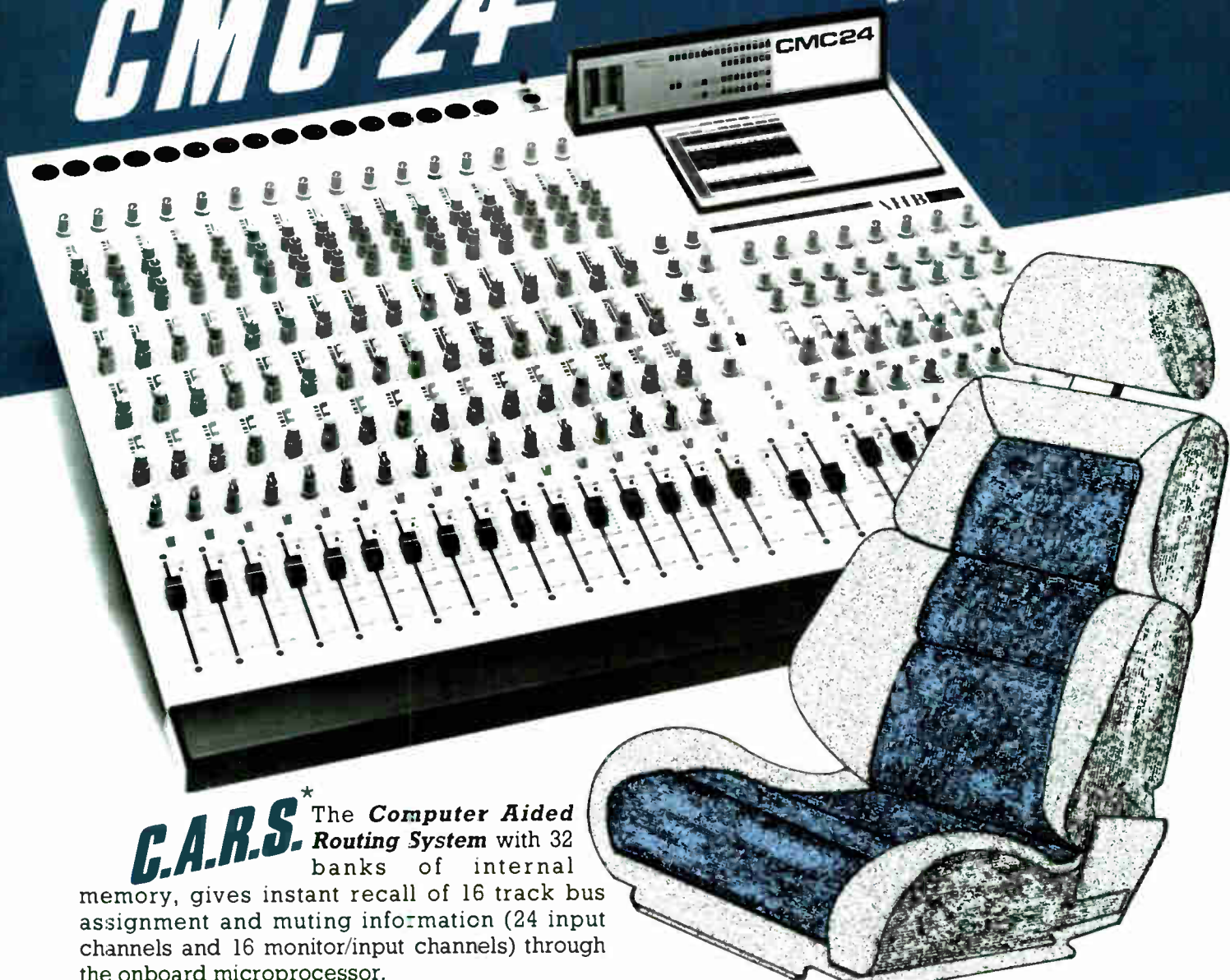
At 46, Winter is among the most popular of the "New Age" jazz musicians, though that is a category he does not particularly like to be associated with. Winter prefers to call what he does "living" or "earth" music because it is played completely on acoustic instruments and is usually combined with wilderness recordings of animals.

Coming from a long and illustrious musical family tradition—members of his father's family were among the first to play the saxophone in the United States, after it had been invented in France in the late 19th Century—Winter formed his first jazz sextet, a bebop group, in 1960, after a stint with the Les Elgard Big Band.

After a series of seven albums produced by the legendary John Hammond for Columbia, the sextet was asked to perform a Good Will tour of Latin America by The U.S. State Department. Upon returning, the group became the first

TEST DRIVE THE NEW CMC 24*

**\$5800* PUTS YOU
IN COMMAND**



C.A.R.S.* The **Computer Aided Routing System** with 32 banks of internal

memory, gives instant recall of 16 track bus assignment and muting information (24 input channels and 16 monitor/input channels) through the onboard microprocessor.

In addition, with the optional Computer Interface/Sequencer, the CMC-24 may be controlled by an external source such as Keyboard, Drum Computer or Tape Track. Anyway enough talk, we believe the Excitement is in the Driving . . . We know you're ready!

For more detailed information on how the new CMC Series can bring your Mixing Capabilities into the Computer Age, contact your local authorized AHB dealer Today.

* Price is subject to change without notice.

AHB

Mixing **ART** With **SCIENCE**

Allen & Heath Brenell (USA) Ltd.
Five Connair Road
Orange, Ct. 06477 / (203)795-3594

Circle #069 on Reader Service Card

Allen & Heath Brenell Ltd.
69 Ship Street, Brighton, BN1 1AE England
Telephone: (0273) 24928 Telex 878235

jazz group to perform at The White House, at the personal invitation of President Kennedy.

During the late '60s, Winter changed the focus of the group toward a more ethnic musical style, and changed the name to the Consort. He recorded four albums for A&M, one of which, *Road*, was taken to the moon by the Apollo 15 astronauts, who, in turn, named two craters on the surface after songs from the record.

In 1972, Winter broke through the mainstream market with the hauntingly beautiful *Icarus* album, produced by George Martin. In his autobiography, which is primarily an account of his years with The Beatles, Martin calls *Icarus* "the finest album I have ever made."

Though it was *Icarus* that gave Winter his broadest audience and largest recognition (he played dates with the likes of Peter, Paul & Mary, Procol Harum and even one show with then-unknown Bruce Springsteen), it wasn't until 1979's *Common Ground* album that Winter began recording the series of records that would fuse his music with the sounds of the natural world.

That album, which contained recordings of Winter playing to and with groups of wolves, whales and birds, was also the album that brought him together with a small, but dedicated, group of musical supporters, recording engineers, and environmentalists, who became the basic organization behind the Canyon project. Among them were Sam West, a former

ranger for The National Parks Service, who guided Winter through the Canyon; Chris Brown, currently Living Music Records vice president and chief engineer; and Mickey Houlihan, a wilderness audio engineer who has done all of Winter's outdoor recordings.

"All of us who are in this are operating from a larger sense than to make some records, put them out and make some money," says Brown, who in addition to doing many of the album's mixes, was also in charge of the album's post-production and editing. "The thing that drives us is the fact that all of us share a strong concern for the fate of the human race and the future of the environment. This is a critical enough time for humanity that some of us need to operate in a moral fashion," Brown adds. "We're here to make a contribution to the quality of people's lives, and in the specific case of Paul Winter, in concern for the plight of our environment. Personally, in 20 years, I feel we will be living in an environmental horror film; places like [New York's polluted] Love Canal will be everywhere."

Most of the others involved in the project feel likewise. In short, the Canyon Consort was the result of a benevolent obsession for about two dozen people, spearheaded by Paul Winter.

Winter first saw the Grand Canyon while touring the U.S. in 1963. He says while playing his horn for fun at the south rim of the Canyon, he imagined the echoes down inside to be extraordinary. Ten years later, while on tour for *Icarus*, he stopped there again and hiked part way down with his sax. "It was then and there that I decided to bring the band someday to make an album," he says.

It would be a challenge that took seven years and countless attempts to raise money (by means of environmentally conscience investors), to fulfill. In 1979, Winter was introduced to Mickey Houlihan, a former psychotherapist specializing in hypnosis and an avid member of Greenpeace, who Winter calls "a true man of the earth." Through their joint interest in whales and other environmental issues, they began working together. Houlihan soon abandoned his profession to become a wilderness recording engineer helping Winter make albums.

"I created a little niche for myself," says Houlihan, who is now based in Colorado, where he runs a small wilderness record label called Wind Over the Earth. "I couldn't compete in studios as a marketable item, but I loved being outdoors and I loved listening."

Houlihan also used his work in hypnosis to study how the pace and frequency of sounds affect us unconsciously. "We're so visually oriented, but you can close your eyes and not see something. You can't, however, close your

Studer Revox PR99 MKII

The Music Mastering Machine



If you're serious about music recording, you'll want to make your master tapes on a professional open reel. And if you want the best sounding tapes, you'll use a tape deck from the world's most respected name in audio recording: Studer Revox.

The new PR99 MKII packs a full load of production features into a low-priced compact recorder. Features like an LED real-time counter for exact elapsed tape time in hours, minutes and seconds. An Address Locate button to automatically search for any pre-selected address point. A Zero Locate feature to bring the tape back to the zero counter reading. Auto Repeat to continuously replay a tape segment of any length. And built-in variable speed control to raise or lower pitch up to 7 semitones.

Other PR99 MKII features include: • Die-cast chassis and headblock for durability • Self-sync • Input mode switching • Front panel microphone inputs • Balanced "+4" inputs and outputs • Swiss/German craftsmanship and precision. Options include monitor panel, remote control, steel roll-around console, and carry case.

As for sound quality, we think you'll find the PR99 MKII sonically superior to anything else in its price range. But that's for your ears to decide. Audition the PR99 MKII today at your Revox Professional Products Dealer.

STUDER REVOX

Studer Revox America, Inc., 1425 Elm Hill Pike, Nashville, TN 37210, (615) 254-5651

ears, because we vibrate."

Without any formal training as an audio engineer, and mostly through his work with Winter, Houlihan soon became known as one of the leading outdoor recorders in the country; the difference between Houlihan and others in the field is probably that he looks at projects such as the Canyon recordings as a naturalist first, and an audio engineer second.

"Here's this incredible special moment and it's not like, 'Take four!' It's like, 'This is it!' And if you get caught up in technology, you miss that experience which is why you're there in the first place. So, you learn to experience what's going on, and if it gets recorded, then great. You want your recording to be second nature; you never want it to interfere with being there."

His biggest challenge as a wilderness engineer and in his work with Winter in particular, is in bringing sensitive studio equipment into areas where there is wind, dust, water, sand, salt and other adverse conditions. "You can never take enough backup to prepare for what can go wrong," he says, "so you end up learning to trust the equipment and nature. You can cover the equipment as best as possible, but at some point you just learn to trust, and that trust is what makes the whole thing so alluring."

For the Canyon recordings, all the instruments and recording gear were packaged into waterproof bags and shipped down river on the same rubber rafts that carried the musicians, technicians, guides and their supplies. The original intention was to make one trip through the Canyon and record it for an album in 1980. But soon after that trip was completed, Winter and the Consort knew they had just begun what would become an immense project. Three other trips followed in 1981, '83 and '85. Although the record features recordings from all four trips, the film was made only from the '83 expedition.

Sam West, Winter's guide through the Canyon, provided the hands-on knowledge for where to go to record. Winter felt his contribution was so important that he credited him as co-producer of the album. After the second trip, Winter returned to specific side canyons and spent several days recording in them. But the hardest part was getting there. The only way into the heart of the Canyon was by rubber raft on the Colorado River. Keeping the equipment and the instruments dry and protected was one thing—keeping themselves alive, was yet another.

"When you are late in the city you get caught in rush hour traffic and that's a great inconvenience," says Houlihan. "When you're late in the Canyon, you get caught in the rapids at dark and that's a life-threatening situation."

CLEAN UP YOUR ACT!



Free Catalog!

INVISIBLE™ Stiff vibration free support
KEYBOARD STANDS for any size keyboard from Kurzweil to CZ101. Sets up in seconds. The new choice of pros like The Motels!

INVISIBLE PRODUCTS • P.O. BOX 230, CAMBRIDGE, MA 02139 • (617) 354-7329

Circle #071 on Reader Service Card

SELECTION!

It's simple. At EAR Professional Audio-Video we are experienced enough to sell quality products that you demand, service what we sell with factory trained technicians and- do it all at a competitive price. Call or write for our complete line card.

(602)267-0600

EAR Professional Audio-Video

2641 EAST McDOWELL PHOENIX, ARIZONA 85008

Circle #072 on Reader Service Card



Burlington
AUDIO TAPES INC.

TOLL FREE 1-800-331-3191
IN N.Y. (516) 678-4414

3M

Audio Recording Scotch® Tape



Full Line of 3M
Audio & Video Tapes.

In Stock and Priced Right.
Reels, Boxes, Custom Cassettes,
Leaders and Splicing Tapes.

**HARD TO GET ACCESSORY
ITEMS**

106 Mott Street, Oceanside, New York 11572

Circle #144 on Reader Service Card



Trident Console w/54 Remix Mod.'s

Otari MTR-90 • Studer 2 Track • Hitachi

Monitors: UREI, JBL, Yamaha, Auratone

AMS Reverb • Lexicon 224 • AMS DDL

Acoustat, Crown, SCS Power Amps

2 Lexicon Prime Times

Eventide • Roland SDE3000

4 Kepex Noise Gates

Teltronics • dbx • UREI

Mics: Neumann Tubes, AKG, Sony, RCA, EV

Kawal Studio Grand

Swimming Pool, Jacuzzi & Fun

*Do Your Ears a Favor
Come and Listen!
Call for Rates
(818) 883-9733*

*Preferred
Sound*

Circle #145 on Reader Service Card

"They couldn't leave anything there," says Brown, "including human excrement. They had to cart everything in and out again. It's a very delicate ecology and you aren't allowed to disturb it."

According to Houlihan, recording in the Grand Canyon was filled with more surprises than anyone could imagine. Most of the recordings had to be done either in the very early morning or the late evening, since during the day, the Canyon is constantly buzzing with the sound of sightseeing planes. In addition, midday was often spent packing and unpacking, eating, and just rowing up the 250-mile-long river.

The music was recorded on a 2-track analog Nagra model 4S tape machine at 15 ips on Scotch 226 7-inch reels. Most of the recordings were done with an AKG C-22 stereo mic. Everything had to run on batteries, including the Nagra, which used 12 D-sized batteries at a time. On an average trip, Houlihan would use over 200 of them.

There were no monitors of any kind used during the recordings, with the exception of headphones which were plugged into the tape deck. Houlihan also did not use a mixer; he recorded everything live to stereo, with the mics going directly into the tape deck.

"I set the mix by arranging the musicians," Houlihan says. "If you need more cello, then you move him in a little closer or you turn the sax away, or whatever. It's just all I can do to arrange that ambient space.

"If you're working in an ambient space like some of those acoustics of the Canyon, and if you can find an arrangement of the musicians where they can both hear each other and balance each other, then they can play with each other without having an audio engineer set the balance. Any changes in the dynamics, whether in an individual's instrument or in that of an ensemble, is audible to them. Everybody hears what's going on without headphones.

"What recording outdoors does," Houlihan continues, "is create a variety of unique situations. The creative part comes in trying to work within those forces."

For Winter's journey through the Canyon, Houlihan had to develop several specialized systems to help the equipment cope with the conditions. To avoid a print-through problem when the temperature would reach as high as 104 degrees, he designed a water cooling process that encircled the metal case containing the tape reels. To enable recording in wet areas, he designed a special foam mic covering dunked in Scotchguard.

But the biggest problem was wind. In order to capture the true ambience of the Canyon, the instruments were often recorded as far as 75 yards away. With

the aid of George Countryman (president of Countryman Microphones), Houlihan developed an effective windscreen made up of several metal rings welded together in a globe fashion and covered with a silkscreen material.

"When it comes to windscreens, it's not how dense it is, but rather how far it is from the mic. With this one, we were able to record in a 30-mile-an-hour wind with virtually no rumble," says Houlihan.

"There's two things that go on in the Canyon: the inspiration and the acoustics. You might find a place that is really inspiring visually, but the acoustics are just nothing. For instance, the river might be roaring by at 80 decibels."

After the last of the Canyon recordings were finished, Winter decided to supplement the project with some cathedral recordings, designed "to evoke the spirits of the Canyon." Recording in the Cathedral of St. John The Divine presented an entirely different set of challenges. Using the Fedco remote truck and recording with an MCI 16-track, the engineers had to cope with the different kind of noise problems of ambient recording in a large, enclosed setting.

"Paul's got a very sensitive approach to the space where he's recording," says Leanne Ungar, who, with Dixon Van Winkle, did most of the cathedral recordings, and mixed some of the Canyon tracks as well. "He wants to hear it. What's the point of being there if it's not gonna come creeping into the microphone and give you the sense of *being there?*"

"We had pairs of ambient AKG 414 mics sprinkled all over the cathedral and recorded them all because it does have its strange places," she adds. "We also rented these great old Neumann tube mics because Paul likes a warm sound on his sax and all the horns on the record. If you listen, you'll hear there's much less high-end definition than on horn sounds found on, say, most pop records.

"We spent a lot of time walking him around the cathedral trying to find the right place where the ambience of the room joined the sax to make that sound that he liked."

For Winter and Chris Brown, who was in charge of post-production, the hardest part was choosing what pieces to include. There were over 80 reels of tape to edit, and there still remains enough material for four more albums.

The mixdown sessions done at Winter's own Living Music Studio located on his Connecticut farm, altered little on the initial remote recordings.

"We did a lot of selective equalization, right down to the mastering sessions," says Brown. "We literally had Bob Ludwig ducking and doing momentary equalization to compensate for the noise problems. The players would be 60 to

Designed For Results!

THE SR-SERIES



If results are your bottom line in mixers, then we invite you to put our SR Series through its paces. Only then do we feel you will be convinced that AHB offers the features you have been looking for, at a price you can afford.

Stateside Savvy

One reason is because the SR Series Mixers were designed here in the "States" by our own R and D department, allowing us to incorporate features from customer input, into its Development . . . and Producing a Mixer for the Perfectionist in all of us.

The Results

Features such as 4 aux sends, 4 band E.Q., long throw faders, multi-source peak indicators on input channels and primary mix buses, stereo

and mono outputs, and external power supply with 48 volt phantom power are all provided as standard on all SR models.

Pro Performance

For 4-Track Recording and more demanding Sound Reinforcement situations, 16 and 24 input models are available with 4 submaster/group outputs as well as the addition of channel mute and E.Q. bypass switching on all input channels.

The Bottom Line

For more detailed information on the AHB SR SERIES of mixers, Call or Write Today. Give yourself "The Edge" with the Mixer That Achieves Recognition . . . Through Your Results!

AHB

Mixing ART With SCIENCE

Allen & Heath Brenell (USA) Ltd.

Five Connair Road
Orange, Ct. 06477 / (203)795-3594

Allen & Heath Brenell Ltd.

69 Ship Street, Brighton, BN1 1AE England
Telephone: (0273) 24928/ Telex 878235

Canadian Distributor: Heint Electronics Inc. / 1-416-727-1951

Circle #073 on Reader Service Card

ian ian ian


FROM START TO FINISH . . . ian

Highest quality Cassette Duplication. Dolby HX-PRO. Digital Mastering. State of the art Video Duplication 1", 3/4" U-Matic, VHS Hi-Fi, BETA Hi-Fi. In-house Printing and Packaging. Fulfillment Service.

ian Communications Group, Inc.
Wilmington, MA 01887 (617) 658-3700
 10 Upton Drive

Circle #074 on Reader Service Card

Juice Goose



**CONTROL YOUR POWER
AROUND THE WORLD**
See Us at NAMM Booth 2012


ELIMINATE:

- Spikes, Surges, Dips
- Brownouts, Line Noise

CHOOSE THE UNIT TO FIT YOUR NEEDS:

- Rack mountable (cases available)
- 3 to 15 AMPS (custom sizes available)
- Input 240 or 120 volts 50/60 Hz
- Output 120 volts (+/- 2%) 50/60 Hz

JUICE GOOSE has toured worldwide with:
 The Jacksons, Madonna, The Commodores,
 New Edition, Steppenwolf, U.S. Navy Bands.



For more information, contact:
JUICE GOOSE PRODUCTS
 5218 Beechnut
 Houston, Texas 77096
 713/664-7614

Circle #075 on Reader Service Card

70 feet from the mics, so obviously we had a lot of signal-to-noise problems, especially on those 2-track tapes. But we had to record it that way for the sound. I mean, you don't go in the Grand Canyon and make a direct recording of someone playing the saxophone. You can do that in your own backyard."

Although several guest musicians appear on the *Canyon* album, most of the music was made by the basic core of musicians who make up the Consort, mainly Eugene Freisen on cello, Paul Halley on keyboards, John Clark on French horn, and Glen Velez on percussion. According to Winter, the reason he wanted to make music in the Canyon in the first place was to see how he and the Consort would perform while in an "enlightened state."

"With that experience behind him, Winter is now gearing up for his next

project, a multi-album series called *A Song of Russia*, based on the music and natural wonders of the Soviet Union to be recorded on location beginning this year.

Winter says it has become very difficult for him now to work in conventional studios after the experience of making music in the cathedral and the Canyon. "For me personally, as a sax player, it's a real letdown to play in a studio room, because the sound is usually dead. It doesn't give you anything back, and putting on headphones and listening to yourself with digital reverb can be nice but technology still hasn't reproduced magic. I've never heard any reverb that's equalled the natural reverb of the cathedral in New York or The Grand Canyon.

"Nature," he says smiling, "still has one up on us." ■

Paul Winter on the rim of the Grand Canyon.

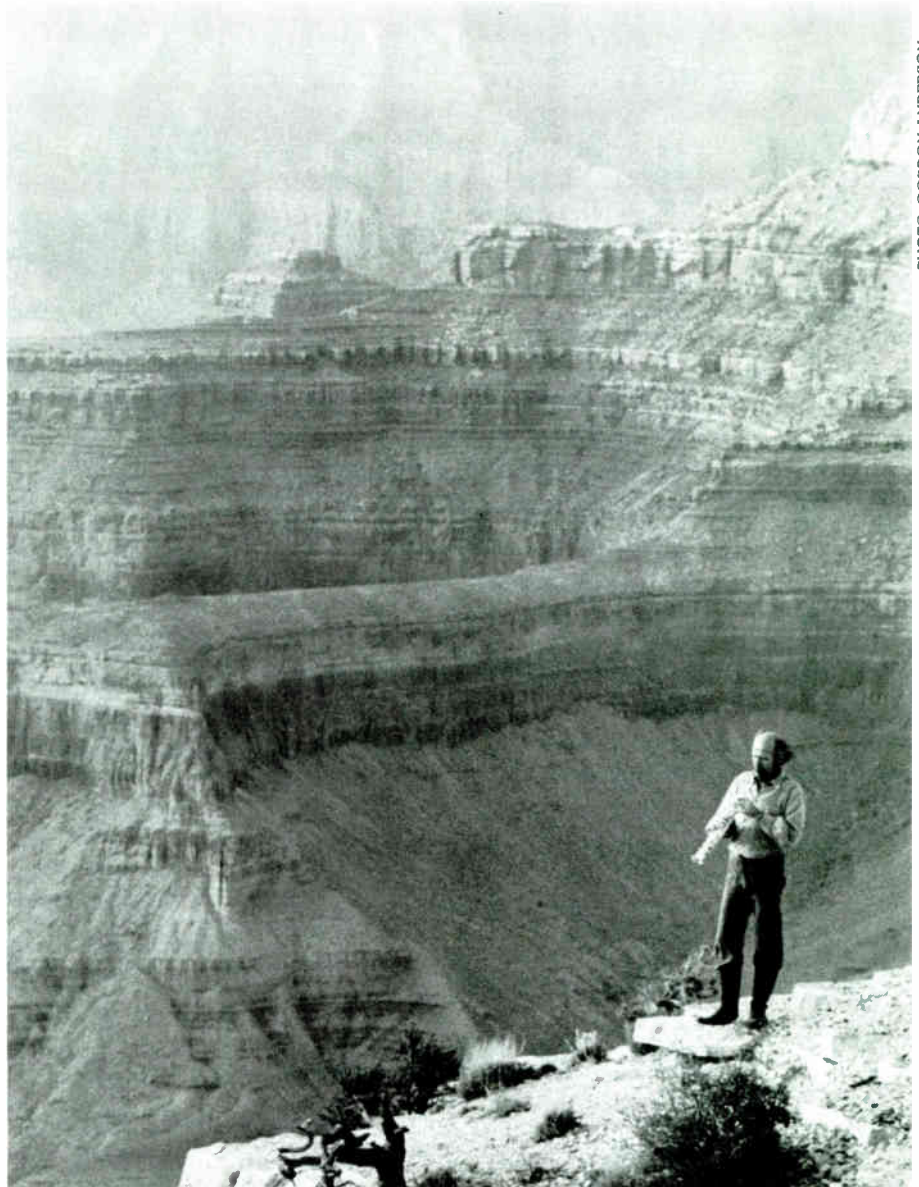
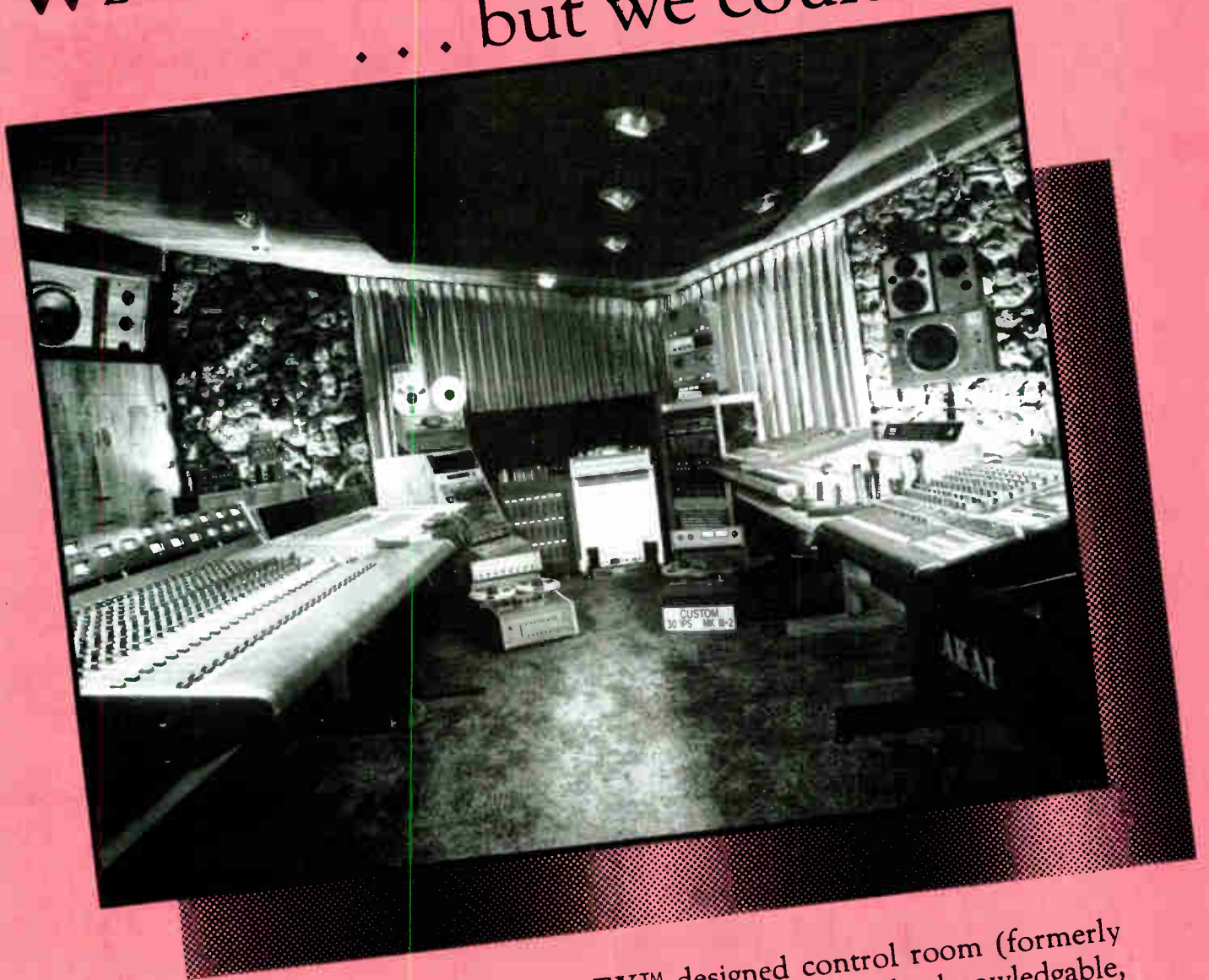


PHOTO: GORDON ANDERSON

WE'RE NOT IN THE STUDIO BUSINESS
... but we could be

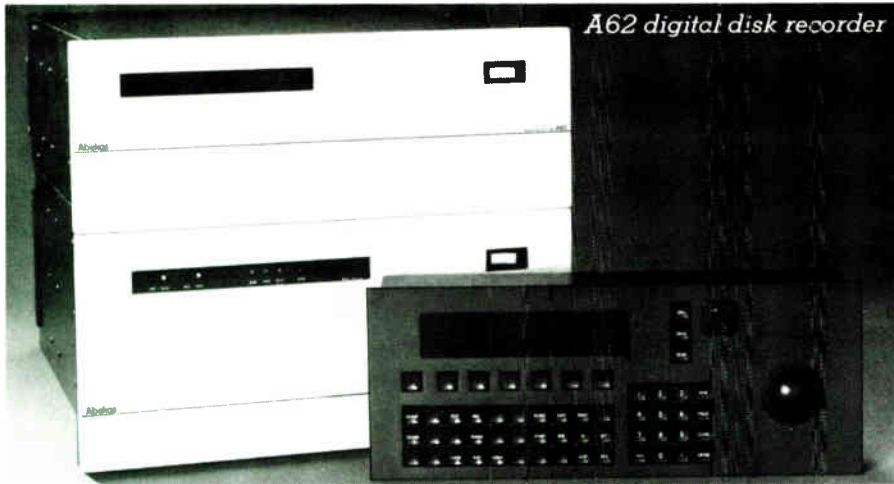


... because we have a **HIDLEY™** designed control room (formerly Kendun Recorders), we have the equipment and the knowledgeable, professional staff. **But we're not a studio, we're a store in a studio.** Our philosophy is to offer our customers the best possible environment to demonstrate the equipment before it's installed.

The dealer that makes a difference

619 South Glenwood Place Burbank, CA 91506 (818) 843-6320

**PROFESSIONAL
AUDIO SERVICES**
AND



A62 digital disk recorder

NEW TOYS FOR '86

by Elizabeth Rollins

More fun with ones and zeroes... Abekas Video Systems of Foster City, California is making a big splash in the deep-end of the post-production pool with their new A62 digital disk recorder. "It's essentially a video tape recorder without video tape; a whole new generation in post-production," claims Abekas product manager Lance Kelson. The A62 converts a video signal into digital information and stores it using an 8-inch Winchester hard-disk drive.

What does this mean to the artist/editor and the end user? The A62 has full internal keying and matting circuitry and can interface with special effects boxes to enable virtually unlimited layering using only one source machine with no generation loss. The unit allows simultaneous playback and record with a choice of speeds. It can disassemble live action video for frame-by-frame alteration (colorization, Paint Box modification, etc.) and frame-by-frame sequencing. The A62 can also record still-frame video for use in pre-mastering interactive video disks.

It's the significant savings of time, source VTRs, and first-generation quality that justifies the price tag: \$98,500 for the basic unit, which stores up to 50 seconds of video, and \$148,500 for the unit capable of storing 100 seconds of information. Greta Lind, an artist at Action Video in Los Angeles, describes how the advanced configuration of the Abekas is working out for her: "It allows me to instantly retrieve frame-by-frame, alter and record with no need to wait for

the tape to set up. It cuts my time and the client's cost tremendously." Lind says she was able to do 30 frames of animation in 30 minutes by interfacing the A62 with the Quantel Paint Box. After the information was stored, she was able to play it back at different speeds: $\frac{3}{4}$ ths time, $1\frac{1}{2}$ time, and two times normal speed.

At The Post Group in LA, editors were able to create a ten-second effect with more than 250 layers by using a single VTR source, an ADO and the A62, according to senior vice president Richard Thorne. Other facilities that had purchased the Abekas system at press time included: Modern Telecommunications, Inc. in New York, Post Effects in Chicago, Charlex in New York, and Le Studio in Morin Heights, Quebec.

The A62 is configured in this way: a main signal system chassis converts and processes the input, and the disk drive module stores that information. The lower priced 50-second storage system uses one Winchester drive, and for 100 seconds of storage, two drives are interfaced. The A62 accepts composite video and has an optional RGB output.

Rollover, Leonardo... here's a new multi-format video color correction system named the "da Vinci" by VTA Technologies, Inc. of Hollywood, Florida. The system allows 16 vector signal processing—that means the colorist can modify up to 16 colors in a frame, a vast improvement upon the previous limit of six vectors, or colors. With the use of a track ball and cursor, the color amplitude, phase, and gray value can be varied in

each of the 16 vectors.

The da Vinci workstation provides control of signal processing, list management and event storage (on floppy disk) audio, routing switching, waveform selection and GPI functions. Automatic scene detection functions cut down on the operator's time by marking and entering scene change information. The da Vinci handles film-to-tape, or tape-to-tape transfers; it accepts RGB, IYO, or R-y, B-y, G-y y components, as well as Betacam and M formats. It can correct NTSC or PAL composite signals without decoders or encoders.

While we're on the subject of painting by numbers, color correction for the *Sun City* video produced by the *Niles Siegel Organization* was done on a *Rank Flying Spot Scanner*. *Ira Schweitzer*, senior colorist at *Image Mix Inc.* (a division of Modern Telecommunications, New York) corrected more than 6,000 feet of 16mm color negative. The footage includes performances from Miles Davis, George Clinton, Bruce Springsteen, Bob Dylan, and many other anti-apartheid minded musicians. *Jonathan Demme (Stop Making Sense)* directed.

Facility Upgrades:

Century III Teleproductions in Boston just installed a couple of Sony 2000s and a second channel of ADO with concentrator, along with a Sony 2500 still-frame VTR which will interface with their Bosch 4000 and Paint Boxes... Hopping across town to Newbury Street, *Boston's Videocraft* has established a new department called the Graphics Workshop. The suite includes the Cubicomp solids modeling system with the Lightspeed Color Graphics system (which can handle 100 frames on-line storage and 50 high-quality fonts). A Grass Valley 100 component switcher, animation controller, modified Quantel digital effects generator and bluescreen room complete the package. The Graphics Workshop uses Betacam and RGB signals... *Sheffield Audio-Video Productions* in Phoenix, MD outside of Baltimore is in the process of engineering a major upgrade. Ground has been broken on a new two-building production post-production facility, which will include: soundstage, control room, dressing rooms, prop storage, tape library, and a meeting room. The projected opening is scheduled for early '86. Meanwhile, Sheffield has been beefing-up their audio-for-video capability. New

equipment includes a 16-track, one-inch audio recorder with BTX synchronizer for the one-inch on-line suite.

Crawford Communications— Beaming up the Business in Atlanta

Last summer, a study of the U.S. telecommunications market conducted by the New York firm of Frost and Sullivan, projected that the number of teleports in the U.S. will nearly double by the end of the year. "The Teleport Market in the U.S." says that by December, the industry will support 30 teleports, or, "antenna farms with links to business centers or individual customers in metropolitan areas." The study goes further to say that by the year 1995, there will be 200 teleports in the U.S.

One company that has recently launched a comprehensive satellite services division is **Crawford Communications** in Atlanta. *Mix* readers know Crawford already for their extensive video post-production facility, and for their 24- and 48-track recording studios. Last summer, satellite services director Candy Alger started beaming up business in this strategic television and corporate market.

Jesse Crawford, owner of the 20,000 sq. ft. complex, explains: "The post-production business is, of course, our base, and it seemed a logical expansion to go after the satellite service area because

the demand from the clients was there." It's a one-stop plan to produce programming or industrial material which can then be uplinked for distribution from the same facility.

Crawford offers two C-band earth stations and one Ku-band earth station, along with a 40-foot C-band rig transportable uplink, mainly for remote stories and sports. But uplink and receive is only one aspect of a teleport. "You have to be interconnected to the city you're in," says director Candy Alger, who first got involved with satellite communications years ago when she worked in the sports department at Atlanta's Turner Broadcasting. A 250-foot microwave tower, lines to the local phone company and permanent transmit and receive video loops keep Crawford connected to the Atlanta metropolitan area.

The Atlanta-based Coca Cola Company does teleconferencing using Crawford's production and satellite services. "Coke announced their Classic Coke product on our insert stage, posted it here, and then fed it to their ad firm in New York, McCann Erickson," says Alger. Crawford estimates that about one-third of their satellite clients are corporations.

The transportable covers sports uplinks for the broadcast networks and for Turner, plus news feeds. Alger cites an example of how the rig often works a

hot news story: "During hurricane Gloria we fed live stand-ups for about 32 stations. WSOC in Charlotte (North Carolina) hired us—usually one company hires you and they know they can sell time to everybody else who needs the uplink, so they can recover their costs. All the reporters just stood in line, waiting to do their story, like waiting in line to use the telephone.

There's more expansion news at Crawford. In October, the year-old interactive video department put on-line a Laser-Vision compatible DRAW disk system by **Optical Disk Corporation**. Department head Jeff Kemp says clients can make their own laserdisc for a mere \$300—"Disks were about \$1,800 for one—so you couldn't make a disk to just see if your design was correct," says Kemp, who is a programmer himself. "I think we're going to see people experimenting a lot more with interactivity because it's more affordable." Kemp claims the DRAW disk system has enjoyed great popular support—at least in the first few weeks. Cinetron, (a motion-control house in Atlanta), IBM, and Harcourt, Brace, Jovanovich were some of their clients in the first week of DRAW disk system operation. Programmers will be pleased to learn that Crawford is planning to purchase the new Sony View System (see Dec. '85 *Mix* "Video News") early this year to facilitate level four design. ■

1985 SMPTE Convention Los Angeles

The Society of Motion Picture and Television Engineers held the 127th SMPTE Technical Conference and Equipment Exhibit at the Los Angeles Convention Center, October 27 through November 1, 1985. It was the largest exhibit in SMPTE's history, with film and video manufacturers occupying over 700 booths and more than 150 technical presentations covering the latest developments and refinements in Film & Laboratory Technology, Personal Computer Applications, Film Camera and Projection Systems, International Technologies, Digital Audio Applications, Film-Tape Interface, Video Transmission and Processing Systems, Electronic Graphics, Multi-channel Television Sound, Video Post-Production, High Definition Television, Television Cameras, and Video Recording.

Where the NAB spring show is used by the industry to demonstrate prototype products and unveil technical breakthroughs and new prod-

uct introductions, the exhibits at the fall SMPTE show tend to showcase improvements and refinements, often dictated by potential users, of products and systems introduced at the previous NAB show, thus serving as a mid-year progress report to the industry. Although several papers were presented at the technical conference on the new digital VTR standard recommended by SMPTE and adopted by all the Major VTR manufacturers, not a single prototype was shown on the floor. Instead, Panasonic demonstrated its improved M II high band component half-inch VCR with PCM audio. This new tape format, while not yet completely standardized and not at all compatible with the company's currently available M I machines, offers performance superior to any existing video tape format now available. The machine, which looks much like a Sony BVU-800, uses a VHS shell loaded with 90 minutes of Metal-particle tape and a new signal component system. Although only a studio editor was demonstrated, it was promised that a full line of field and post machines would be shown at NAB '86 and that other VTR manufacturers

would be adopting the format.

MCI/Quantel showed its new universal control panel for its line of digital effects systems, which can be used to address different units using a standard protocol, and featured an improved user friendliness allowing, for instance, a number of complex 3-D shapes and motion sequences to be created on the Mirage DVE with ease of repeatability and a minimum of keystrokes.

Kodak showed its new version 8mm modular camcorder system which is a collection of small, snap-together components including camera, recorder, tuner-timer, and duplicating module. As this was not a show for consumer electronics, Kodak presented it as a high quality ultra portable audio acquisition machine with optional picture for reference. The system, which is manufactured exclusively for Kodak by Matsushita, will provide four hours of video with digital stereo plus FM Hi-fi audio, or up to 12 hours of digital audio alone on a single cassette. Hundreds of other important developments were presented at the show and conference, an invaluable event.

—Joe Van Witsen

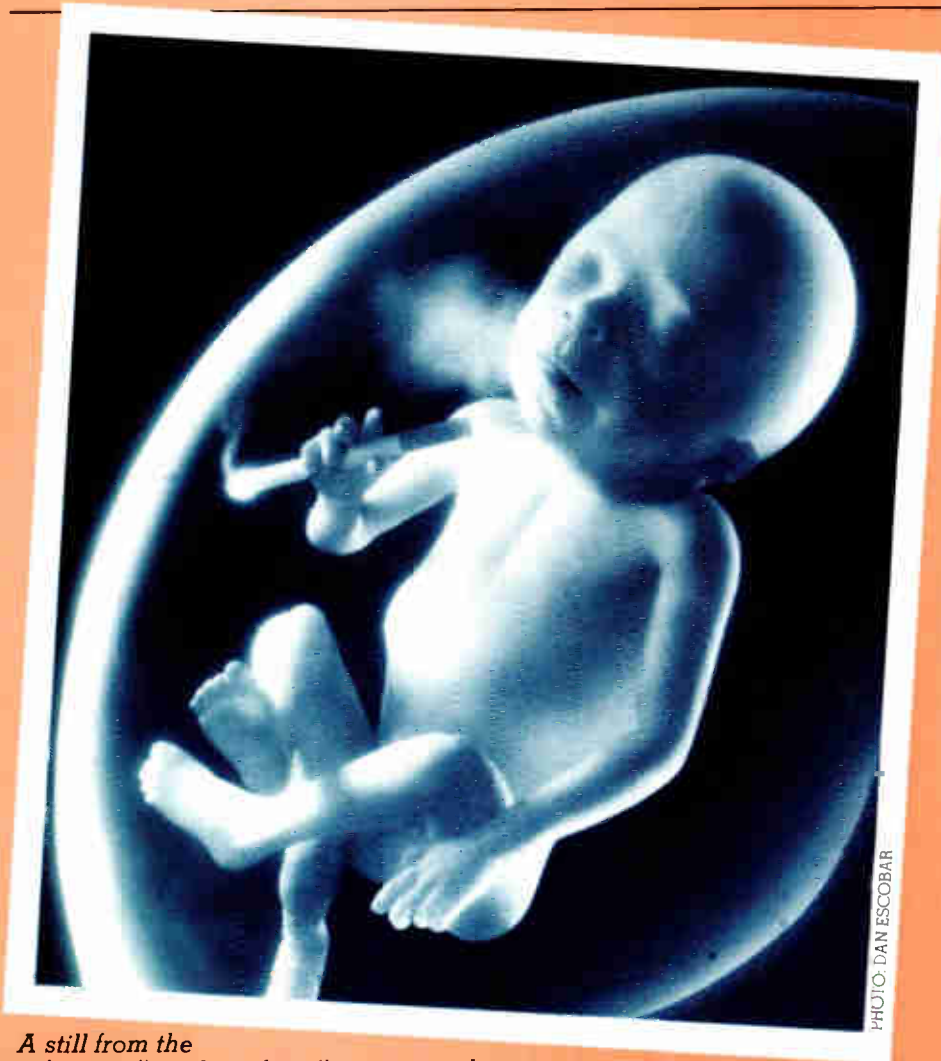


PHOTO: DAN ESCOBAR

A still from the infamous "smoking fetus" commercial.

EFX BY THE BAY

By Lou CasaBianca

The McVey/Vogt Production's headquarters can be found under a big number 39 in the Bayshore section of San Francisco. The '50s industrial exterior is a silent witness to the futuristic activities that take place behind its doors. Inside the picture changes dramatically. Computers, cameras, videotape recorders, lighting equipment, brightly-colored offices buzzing with the activity of multiple projects in production. McVey/Vogt is the brainchild of Tony McVey and Joe Vogt. The company is structured as a team of specialists, each contributing his own particular talent, resulting in a

whole that is greater than the sum of its parts. Over the past few years, they have produced a number of significant projects, Rick Springfield's "Bop Till You Drop" for RCA, and the controversial smoking fetus for the American Cancer Society among them.

By far the most visible and vocal of the partners is Joe Vogt, who appears to enjoy being in front of a crowd—winning it over with his easygoing manner and smile—as much as he likes being behind the camera. He is particularly proud of the fact that he is based in San Francisco and still able to attract and produce major productions. Vogt's background includes a film degree from San

Francisco State University. Partner Tony McVey is a sculptor/filmmaker from England who used his sculptor's background with stop-motion animation filmmaker Ray Harryhausen in *Sinbad and the Eye of the Tiger*. He was attracted to the San Francisco Bay Area to work with LucasFilm. Later, he left Lucas, met Vogt and they formed McVey/Vogt. Recently, we met with Joe Vogt to review some of their new projects.

Mix: Let's start at the beginning. Where did you go to school?

JV: I started studying at St. Mary's University in San Antonio, Texas. Later, I went to the University of Dayton, Ohio, then I moved out here. I dropped out of college and six months later I went back in because I wanted to get back into the swing of school again.

I was going to SFSU and decided after doing pre-med and business as my main field to go into art because that's always what I wanted to do. I found a course called Conceptual Design that they had just started. It was with this professor from MIT. He was very science oriented. He developed this program where it was more thinking creatively rather than just learning how to paint figures and still-lives. He would make us do all these weird projects. I got my degree in conceptual design and at the same time started getting into the film department at SFSU. For my senior project I decided I wanted to do a movie, so I made this \$25,000 four-minute movie, combining the Film department and the Art department. I got a lot of people on the campus involved in building sets, making costumes and stuff. From there I worked for Whitney Clark here in San Francisco on a sexual harassment film he made with Ed Asner called *Work Place Hustle*, which took off. After that I drove a truck for two years, then decided with almost two masters degrees I shouldn't be driving a truck. I decided to call RCA records, showed them my college film, and we got the Rick Springfield project along with Smokey Peters and that's where it started.

Mix: How about your partner, Tony McVey?

JV: Tony went to South Hampton Art College in England as a sculptor. Later, he worked for one of the museums over there. He was sculpting people and doing exhibits, dinosaurs and that kind of

thing. Then he got involved with Ray Harryhausen building models for *The Seventh Voyage of Sinbad* and *Sinbad and the Eye of the Tiger*. Then he got involved with the *Superman* feature people over there. Later, he came over and worked with Jim Henson on *The Dark Crystal*. After, he came out here and got a job working with LucasFilm. I think he started on *The Return of the Jedi*. He worked on *Enemy Mind* and did some sculpting for *Howard the Duck*. He did some small figures for pre-production. In England he was doing a lot of commercials for kids.

Mix: What was the first project you did together?

JV: I think the first time we worked together was on "Bop Till You Drop." He sculpted the big monster in the chair. He's amazing—you see a hunk of clay there one day and the next day the thing is done. I mean big pieces that he works on and they're beautifully done. I was blown away by his work. Then he approached me, after seeing the work we did with Rick Springfield. He's been trying to get one of his movies off the ground for about three years and so now we're doing it. Also, the smoking fetus for the American Cancer Society has created such momentum for itself worldwide that we just completed a still of it for magazines. We re-shot it, airbrushed it; it's better looking than the film version.

Mix: So you do "Bop Till You Drop" and the "smoking fetus," then decide to go forward in what direction?

JV: Well, this past year I've been working with Ron Eveslage, trying to get a project off the ground and they basically have been pushing me as a director for commercials, which has been working out fine. We've done a seatbelt spot. We've been doing some of those 976 Megaphone Company commercials. At the same time, I've been developing a real close relationship with my agent in L.A., Triad Artists.

Mix: Who do you work with at Triad Artists?

JV: Maggie Abbott, who is an old pro in this business; she's been doing it for 20 or 30 years. She's served as executive producer on several films. She works more on the music side where she's tying rock musicians in for feature soundtracks. They try to book all the talent and directors and all that, so she's pushing me in commercials, music videos and features. Features are the big thing they're trying to get me into. That's the hardest jump to make. I don't know why though, because everything we do is so planned out. In animation and effects we storyboard everything to a T. It's real-

ly just extending it from a video to a feature; it's not that different. The big thing about doing a feature is the film company trusting you with \$15 million.

Mix: What are some of the upcoming projects you'll be working on?

JV: We're working with The Commodores on a venereal disease project for MTV. We're going to be educating kids about how to love each other, basically, but also we'll be dealing with their responsibility for passing these things on and educate them in a kind of funny way. Tony's going to make 8-foot mites roaming around the stage tap dancing or condoms blowing up on a calliope, all kinds of off-the-wall things to make the point.

Mix: What other music-oriented projects do you have going at this point?

JV: We're doing the new video for Kashif for his new album on Arista. We're doing a missing children music video. There will be at least 30 rock stars in it, and it's going to be shot on location here showing kids how to take care of themselves in different situations. I've been seeing all the paperbags and milk cartons. As far as I'm concerned, most of these kids are never going to be seen again. The

answer is to nip this problem in the bud so kids know what to do in these kinds of situations. We're going to show kids under potential kidnap circumstances, sexually exploited kids, kids that are abused at home and run away. I think we're even going to have a scene about two divorced parents fighting over a kid, and how the kid gets caught in the middle. So it will focus on the kids, but adults are going to see the impact they have, too. ABC's *20/20* is doing an hour special on the making of the missing children video. The White House is involved, as well, as is the Justice Department and the National Center for Missing and Exploited Children.

Mix: Other than the Missing Children Project, Kashif, and the Commodores, does that pretty much round out what you're doing in music video?

JV: We haven't been pursuing music videos as much as we would like to. We've been trying to stay afloat so we've been doing commercials. "Bop Till You Drop," from what I'm hearing, is coming down as a classic video. It's one of the videos that people are going to remember in the next ten years. Just because of the look of it. It's so big.

—PAGE 173

Are you ready for Digital? Stereo T.V.?

... **RLS Acoustics** can help you design your future.

rls ACOUSTICS

Designing studios for the Digital Age . . .

DESIGN & CONSTRUCTION SERVICES

LEDE Type, or Traditional, Recording Studios • Audio Sweetening Rooms • Video Production Suites • Broadcast/Radio Facilities • Film Soundstages • Small Theatres • Quiet HVAC Systems

RECENT CLIENTS

Robert Berke Sound • Steve Dobbins Productions • Intel Corporation • San Francisco Production Group

(415) 541-0818

formerly **SONIC LANDSCAPES**

NORTHWEST

RECORDING · UPDATE

GEARING UP FOR THE FUTURE

by Linda Johnson

The healthy state of Northwest recording studios brought music to everyone's ears—literally—as it was primarily album production work that kept facilities busy in 1985. From Anchorage, Alaska on down to the sunny Boardwalk of Santa Cruz, California, music ranging from jazz to heavy metal to psychedelic filled the studios, and a good number of film/video and commercial projects weaved their way in as well, indicating a balanced and bustling market. With these varied sessions, many studios came to recognize the changing needs of their clients; as electronic keyboards and drum machines gained widespread



popularity throughout the recording industry, a good portion of West Coast facilities chose to modify their control rooms to accommodate direct recording, and several invested in the latest in synth-oriented equipment.

"Sales in synthesizers and related

products went up 200 percent this year," says Bob Ulius of Leo's Pro Audio in Oakland, CA. Indeed, after talking to studios in the San Francisco Bay Area and throughout the Northwest, we found Ulius' figures to be quite valid, as studio owners reported recent purchases (or

SAN FRANCISCO PRODUCTION GROUP



That there is increased concern with audio quality in video and film production has by now been amply documented. At many recording facilities, investment in audio-for-video production tools is viewed as a necessary requirement for survival under current intensely competitive conditions. At video post-production houses as well, the upgrading of audio facilities seems in general to now be viewed as inevitable. Despite the chorus of agreement on the importance of audio in the future of video, however, a crucial question of timing still remains. Commitment of substantial resources based on anticipated rather than actual demand can be chancy in any business. In the world of media technology, high costs and swift obsolescence intensify the risks. At what point does it actually make financial sense for a facility to invest in advanced audio-for-video capability?

San Francisco Production Group is one video post-production house that has developed a seemingly sen-

—PAGE 126



From Sound Genesis, The Live Oak Grows.

Berkeley composer, producer, arranger and Live Oak Studio owner Jim Gardiner's dream was to put together the latest computer technology and automate his existing console. To be ready for the future. Today.

He knew where he wanted to be. And he came to Sound Genesis to help him get there.

Together, we designed a state-of-the-art automation system featuring the Sound

Workshop ARMS-II Console Computer and DISKMIX from Digital Creations.

Now, Live Oak stores many versions of a mix on floppy disks linked to SMPTE time code on the multi-track master tape. They can do more mixes, faster, with more tracks available at a fingerstroke. Jim can even compose on the computer and feed it right into the system.

We're happy to have helped the Live Oak grow. We'd like to do the same for you.

ARMS-II and DISKMIX are registered trademarks of Sound Workshop Professional Audio Products, Inc., and Digital Creations Corporation, respectively.



sound genesis®

BEFORE YOU MAKE A SOUND, LISTEN TO US.

2001 BRYANT STREET, SAN FRANCISCO, CA 94110
415 285-8900 • 213 622-0212 • TWX 910 372-7393

Circle #090 on Reader Service Card



Music Annex, Menlo Park, CA.

at least serious consideration thereof) of drum machines and/or synthesizers. And as some facilities (and artists) are not thrilled with, nor conforming to, the demands of this rapidly spreading trend, a balance exists between the two worlds of high-tech sounds and "real" music in the Northwest recording scene.

Kurt Riemann, owner of Surreal Sound up in Anchorage, AK, is a perfect example of someone trying to cater to the various demands of today's musicians. He owns a Kurzweil 250, several Yamaha synthesizers, and an Ensoniq Mirage, all of which are "constantly being used," according to Riemann; but he also recently completed a demo for The Psychedelic Skeletons which was done live-to-2-track for "that natural, raw guitar sound." A synthesist himself, Riemann says his dream would be to do full-time synth movie scoring, but the market just isn't there. Instead, "we do a little of everything here," he says. Since moving to a new building this past winter, and upgrading to 24 tracks, Surreal has kept their new MCI JH-600 board busy with various record and commercial projects.

Across the Pacific on sunnier turf, Sea West Studios in Hauula, HI, recently invested in a vast amount of equipment: Linn 9000, Yamaha TX8L6 rack mounted DX7, AMS digital delays, an Audio+Design/Sony PCM-701 digital 2-track recorder, and an Oberheim Xpander. "Investment in musical instruments is definitely what's happening in studios," says producer Rick Keefer. "You just *have* to have all that gear to make sounds that are compatible with what's out on the market today." Working exclusively on record projects, Sea West had Michael Furlong and Adam Bomb in recently

putting the new equipment to good use.

On neighboring island Maui, George Benson's Lahaina Sound Studios recently added LinnDrums, a Yamaha DX7, a Yamaha grand piano, and last but certainly not least, a brand new SSL console which, according to studio manager Amos Daniels, has been attracting several new clients. They've been recording for artists from as far away as Japan and Italy, as well as for a Kenny Loggins/American Bandstand project.

Sun Valley Audio in Idaho has attracted several artists to its resort-like facility, Barbra Streisand and Carole King among them. "We'd like to encourage people to come here as an alternative setting," says owner Amos Galpin, "and to expand ourselves on that base." Reporting a "strong summer" in record production, Galpin notes that his Kurzweil 250 gets used "by every single person who comes in," and adds that he has plans to replace his ICC 9000 console with a 40 channel, fully automated version. "We're taking our shot now," he explains, "and would like the place to be attractive enough to bring people in from L.A."

Not quite as far south as the city of stars, Priscilla Gardiner of Live Oak Studio in Berkeley, CA reports that they've had no problem attracting clients to their state-of-the-art studio this past year. Specifically targeted towards customers interested in digital sampling and MIDI-controlled peripherals, Live Oak has been busy with several record projects and some film soundtrack work. "We're completely set up for synthesizer work," says Gardiner. "We're totally computerized now." The studio is well-equipped with a new Disk Mix II, a 32-track MIDI sequencer, a Macintosh for off-line storage for sampling, and an IBM computer that operates the control board during mixdown. Some artists in recently using the facility and its equipment—including a widely-used Kurzweil 250—were David Grisman, Rosie Gaines, Makoto, and Frank Harris.

"We're getting new toys all the time," says Helen Hovey of Fane Productions in Santa Cruz, CA, who reports that having synthesizers has been a big "plus" in attracting clients to their studio. Having recently MIDI-fied all their synthesizers, they've also just added a new DX7 to their already extensive collection. Other purchases by Fane include a Linn 32-track digital sequencer and an E-mu SP-12 percussion sampling drum machine. In the studio using some of those new "toys" were Eddie and the Tide, Northwinds, and Leon Patilla.

Across the Bay in San Rafael, Tres Virgos was taken over last June by artist/producer Narada Michael Walden. The new studio—Tarpan—has been overhauled and is now set up for 48-track recording with Q. Lock. A Trident TSM

console works as a center piece, and the monitor system has been upgraded with UREI 813As and 813Bs. "This studio is set up primarily for Narada's needs," says studio manager Janice Lee. Working almost exclusively on Walden's and other in-house projects, Tarpan has been booked solid with such artists as Clarence Clemons, Jermaine Stewart, Whitney Houston, Natalie Cole, Aretha Franklin, and Walden who will soon begin work on his next LP.

In nearby Sausalito, co-owner Dan Godfrey of Studio "D" reports that his facility had a terrific first year in business. Indeed, with the likes of Huey Lewis, Santana, and Jim Gaines in working on various projects, things can't be all too bad. They've recently modified their Trident TSM console, and added a large selection of vintage tube mics. But Godfrey insists that it is the *physical* characteristics of the studio that attract clients the most. "Studio 'D' has *the* big live, natural drum sound in the Bay Area," says Godfrey, "and that's something you just can't get with any equipment."

Also in Sausalito, The Plant Studios (which received a TEC Award nomination as Recording Studio of the Year from Mix readers) has re-opened for an interim period, pending sale of the facility by the Justice Department. U.S. Marshals seized the studio and other assets last September, alleging that The Plant's owner had purchased the business with profits from narcotics sales. None of the studio employees were implicated in the charges, and at press time a number of well-known industry figures (including major artists) were bidding on the studio. Currently cutting tracks at The Plant are Buddy Miles, produced by Jim Gaines and Lou Chandler; and Carlos Santana, working on a self-produced project.

Referred to as an "artist's studio" by owner Peter Gilford, Color Zone Productions in Novato, CA has had a steady number of musicians in working on demos and records, including Richie Ray, Sean Michael, and two members of the Huey Lewis band who were in remixing some material from 1976. Gilford says his clients have been using his Emulator II to "an incredible extent. A lot of people aren't familiar with sampling, and when they learn about it, they can't believe what they were missing." Gilford also recently purchased a Linn 9000 and a Nakamichi digital mastering recorder. "Our goal is to produce master-quality demos," he concludes.

With two 24-track recording studios, one 8-track media production room, a video soundstage, and a cassette duplicating facility, Music Annex Recording Studio owner Dave Porter reports that business is excellent in all aspects of his Menlo Park-based studio: Ronnie Montrose and Jeff Berlin have kept the

Eventide's Newest Harmonizer® Bursts Upon The Audio Scene



The H969 is coming through to deliver . . .

The Cleanest Audio

The H969's new ProPitch™ digital electronic-splicing algorithm gives you the cleanest, most glitch-free pitch change ever. Deglitching is active over a wider bandwidth, too — a full octave wider. And Eventide has employed 16 bit linear PCM circuitry in the H969 for the first time in a Harmonizer, for superb audio performance in all modes.

The Easiest To Use

We know that you don't always think in terms of "pitch ratios". Sometimes, you simply want to go up a major third, or down a fifth. So to make things easy, the H969 gives you twelve "instant" pitch change presets. Setting a precise major third, minor third, fifth, seventh or octave of pitch change is a cinch — just push one button. Each interval can be selected as a sharp (increase pitch) or flat (decrease pitch). There are also instant presets for sharp and flat micro-pitch change, for vocal doubling and effects.

You choose from two ways to select pitch ratios and delay times on the H969 — positional and auto incremental. Individual coarse and fine adjust controls make it a snap to get exactly the pitch ratio you want. And once you choose your settings, the digits are rock-stable. Unless of course, you ask the H969 to automatically vary the pitch ratio — up or down, at your choice of speed.

To make the H969 as easy to use in live performance as it is in the studio, we've included a front panel preamplified input, in addition to the usual XLR-type studio level input. Just plug in your instrument. There's a companion front panel output jack, too. The H969 also has remote line in/out switching capability, plus remote pitch ratio/delay time set provisions. A keyboard can also be accommodated.

The Widest Delay Range . . . And More

With the H969, you get much more delay than we've ever put into a Harmonizer before — 1.5 seconds at full bandwidth (40Hz - 15kHz \pm 1dB). Need even more? Just hit the "double mode" button and you can extend delay range to over 3 seconds, with 8kHz bandwidth. For added convenience, you can choose and save any five delay times for instant recall. Delay time and pitch ratio are each displayed on an independent readout.

The Broadest Array Of Effective Features

The H969's full 1.5 / 3+ second digital memory is available in Infinite Repeat as well as Reverse Audio modes, dramatically increasing the versatility and usefulness of these effects. You can also vary the length of the reversed or repeated audio segment after capture. Pitch change, Flange and Doppler effects can be used in tandem with Reverse and Repeat modes.

Flanging on the H969 Harmonizer offers unlimited options. Flange sweep rate can be varied over a very wide range, or you can sweep manually. You can freeze the flange sweep at any point you select, and you can preset the point at which the flange sweep begins. We've also added a new Doppler mode.

The Best Harmonizer Ever

The H969 is an addition to Eventide's full line of Harmonizer special effects units. Our industry standard H949 is still going strong. The H969 ProPitch Harmonizer maintains Eventide's leadership position. For your most demanding applications, the H969 represents the state-of-the-art in pitch change technology. Hear it at your Eventide dealer soon.

Eventide
the next step

One Alsan Way
Little Ferry, N.J. 07643
(201) 641-1200

Circle #091 on Reader Service Card

studios busy; Joanie Greggains has been sweating on the soundstage with her daily *Morning Stretch* series; and sales in the tape duplication facility have tripled since opening early last year. But still, Porter wants more for his studio. "I lost five clients who bought synthesizers for their homes," he says, and he is now seriously considering investing in a large, computer-based synthesizer system sometime this year. "We want to build something bigger and better to bring them back," he says. Porter concludes that he hopes that his studio will one day be able to do a project "from concept to finished project. We already have a graphics guy," he laughs.

Another Bay Area "mega" facility, Russian Hill Recording in San Francisco, just completed ADR (automated dialogue replacement) on a new Michael Jackson film, *Captain EO and the Space Knights*, a George Lucas-produced, 3-D movie made for a specially-designed theater in Disneyland. The four-and-a-half-year-old facility reports no major upgrades, but studio manager Gaynell Toler says that they are planning to expand with in-house synthesizers and computers sometime this year. But for now, business is doing just fine. Voila: commercial work for Levi Strauss, Chevron, and Bank of America; music recording for Mark Isham, Phil Aaburg, and



Bear Creek Studio, Woodinville, WA.

Dick Bright; and feature film/TV ADR on *Enemy Mine* (directed by Wolfgang Peterson of *Das Boot* fame), *Jewel of the Nile*, *Trouble in Mind* (Divine in his first straight role), and all the music on the *Charlie Brown* and *Garfield* animated series. "We like diversity," understates Toler.

"Simplicity," says Peter Buffett, owner of Independent Sound in San Francisco, of what is his studio's best feature. Working steadily for ad agencies such as Foster Farms, PG&E, and HP Calculators, Buffett notes that "we (he and wife



Mary) have been a keyboard studio since 1978, and we've developed along those lines," he says, unfazed by the current trends of synthesizer madness. The only purchase Buffett made recently was that of a synchronizer card for his Otari MTR-90 to sync up with 3/4-inch video. Independent Sound is already well-equipped with a Kurzweil 250, Linn 9000, a DX7, and a relatively new Roland Super Jupiter. With a control room and studio in one small area, Buffett says with a laugh, "We're getting rid of keyboards!" In a more serious

(Left to right) Bassist Rob Wasserman with vocalist Rickie Lee Jones at a session at Russian Hill Recording in San Francisco working on Rob's upcoming LP.



MR. BONZAI

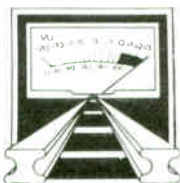
presents



STUDIO LIFE: The Other Side of the Tracks

Hey, Babe. Take a walk on the lighter side. Join the crew at Ryan Recording as they struggle for respect and profit in the recording industry. The journey is satiric and whimsical, sometimes a bit bizarre but always illuminating.

Mr. Bonzai's work has been praised by critics, recordists, and piano tuners from every corner of the world. Isn't it time you found out what they're all laughing about? Treat yourself to the insider's view of STUDIO LIFE.



Send \$7.95 per copy plus \$1.00 postage and handling to MIX Books, 2608 Ninth Street, Berkeley, CA 94710. California residents add 6.5% sales tax.

**"Grammie's House,
what a hot new studio you have!"**



The latest technological goodies.

Start with an exquisitely designed new control room, maybe the world's largest.

Add the incredible SSL 6000 fully automated console with total recall, 24-48 track digital audio/video post production equipment, Studer Mastering Recorders, a Fairlight Synthesizer with CVI and voicetracker, a Linn 9000, and a Yamaha C7 Grand.

We've got a rack of outboard, too, and four kinds of reverb. Enough to knock you right on your little red riding hood.

Your Grammie never had it this good.

Grammie's House is a new Victorian era mansion nestled

in a quiet neighborhood near downtown Reno. Minutes from unlimited recreation and nightlife. Just a short limo ride from Lake Tahoe, America's greatest indoor-outdoor, year round paradise.

Inside, there are plush, elegant living quarters with brass beds, and a convenient kitchen featuring Nouvelle Cuisine.

It's the ultimate creative setting. Technology and environment in perfect harmony. After all, the better you feel, the better you sound. And the better you sound, the better we feel.

Make your way to Grammie's House.

Got a recording session in the works? Come to Grammie's House in Reno. For reservations, call (702) 786-2622.



CHIPS DAVIS Acoustic Design

Hear what the world's coming to at these Chips Davis facilities: StarStudio, Hamburg, West Germany; Tres Virgos Studios, San Rafael, California; Sounds Interchange, Toronto, Ontario; NBC PPS 1, CR's 2 and 4, Burbank; NBC Brooklyn 2 (Cosby Show); Crescendo Audio Productions, San Juan, Puerto Rico; Radio/TV Caracas, Caracas, Venezuela; The Audio Archives, Syracuse University, Syracuse, N.Y.; In Las Vegas, call (702) 731-1917; In San Francisco, call (415) 459-2888.

Circle #092 on Reader Service Card

SAN FRANCISCO SOUND RECORDERS

Dan Alexander is excited. After more than a decade in the recording industry, with ownership interest in several studios along the way, Alexander's San Francisco Sound Recorders has opened its doors to the public. The studio has been a long time coming, but if Alexander's enthusiasm is any indication, his patience will be well rewarded.

"Dan estimated about six months of work and I predicted eight," says studio manager and long-time Alexander associate John Cuniberti. "It looks like we're coming out somewhere closer to ten." Alexander, a dealer of used audio gear who has helped his share of studios over the years, adds: "I always tell people to be prepared to spend twice the money and three times as long as they originally anticipate." In the



—FROM PAGE 118, *N.W. STUDIOS*

tone, he concludes: "If you have one good synthesizer representing each phase of technology, that's all you really need. It's great!"

Tom Mallon of Tom Mallon Studios in S.F. seems to hold similar basic values of simplicity. Though he recently relocated and upgraded his studio to 16-track with a new Otari MX-70, Mallon recorded several well-received, non-commercial-oriented albums and demos in his old 8-track facility, for such artists as Chris Isaak, Fields Laughing, The Muskrats, Esther's Orbit Room, and Flying Color. No talk of techno here.

Another 16-track studio in S.F., Duncan Street Studios, just opened in August last year. Owner John Blakeley reports that business is steady, with commercials for comedy group Duck's Breath Mystery Theater, and album work for locals Pride and Joy, Ray Star, and Peter Lamson keeping him busy. With a barrage of vintage guitars ('53 Telecaster, '54 Stratocaster, '63 Fender 12-string, and tons more), a 1906 Busch-Gerts piano, and a champagne drum set straight from the early '60s, Blakeley concludes that his studio is "open to anything anyone wants to use it for."

Record and demo work with artists such as Jeff Fogerty (son of Tom), Monkey Rhythm, Norton Buffalo, and Commander Cody kept Prairie Sun Recording in Cotati, CA busy this past year,

much of which had to do with the exclusive use of independent engineers/producers like Michael Cotton (The Tubes) and Gregg Rolie (Journey), according to studio manager Clareese Sayadinn. The studio upgraded with a Studer A80 24-track autolocator, Neve and Orban compressors, and updated Prophets, and Sayadinn adds that through a network of musicians, Prairie Sun gets a great deal of musical gear such as an Emulator II, three AMS digital reverbs, and several DX7s. "More musicians have the synthesizers themselves," Sayadinn explains, "so they just bring them in as needed. And we have a huge echo chamber (1,000 sq. ft.) which is really popular and attracts a lot of people for that huge drum sound."

Yet another studio in the Bay Area attracting several recording artists is Fantasy Studios in Berkeley. Fully-equipped for film/video sweetening, mixing, and post-production, as well as for record mastering, Fantasy is perhaps one of the area's leading recording centers. Greg Kihn and Journey are regular visitors there, and other artists in using the facility this past year included Red 7, Angela Bofill, Mojo, and The Kantner/Balin/Cassidy Band. The list goes on and on, so let it be said that Fantasy is easily living up to its name.

Commercials, films, records... you name it, they're doing it at Bear Creek Studios in Woodinville, WA. And due to

all the business from clients ranging from Chevron and Boeing to Sesame Street to Lionel Richie and Eric Clapton, Bear Creek was able to invest recently in new equipment: A BTX Softouch ¾-inch JVC recorder, various processing devices, AMS 1580 digital delays, and last but not least, a new Kurzweil 250 to add to their collection of synthesizers. "We're always looking for what's new on the market," says owner Joe Hadlock. "More and more synth work is being done in the control room nowadays, and right now we're looking at the Macintosh computer as new programs are being written." Hadlock adds that while album work gives him creative satisfaction, commercial and film work provides him with the income he needs, and this year he plans to expand his "home studio that's grown out of control" to an additional building downtown which will exclusively handle TV/video and film-related business.

Jim Loomis of Triad Studios in Redmond, WA admits that business has been spotty in the last year, but album projects for Randy Meisner, Ginny Reilly, and Eric Tingstad, and work on a single entitled "Seattle Helps the Hungry" kept Triad alive, if not kicking. Loomis notes that he's planning to restructure the rate scale of his studio in hopes of attracting more local artists. "We're a very sound studio acoustically," he insists, adding that he plans to focus entirely on LP

—PAGE 124

case of San Francisco Sound Recorders, Alexander's succinct summary of his standards for the project give one an indication of why the construction could not be rushed: "We tried to go for perfection in everything."

Located in the former Wally Heider recording complex at 245 Hyde Street in San Francisco, the studio was born out of the dissolution of the original partnership that had operated Hyde Street Studios on the site since 1980. In a set-up that Alexander refers to as a "condo" arrangement, Hyde Street continues to operate studios A and D under the direction of former partner Michael Ward. Alexander's new and totally independent business has taken over studio C.

"I was never comfortable with the multi-room studio arrangement," says Alexander. "[Studio C] was always my favorite room. It's got a lot of history. We get people coming in for sessions who tell us they played here when it was Heider's and they've always loved the room."

The challenge that Alexander

and Cuniberti set for themselves upon taking over the space was to retain those qualities that gave the studio its character, while bringing every aspect of the facility up to the highest level possible. Alexander's audio business (Dan Alexander Audio) proved to be an important asset to the pair in several ways as they set out to realize their goals. First, the business allowed them the luxury of not having to make the studio operational right away. "With every other studio situation in which we had been involved," says Alexander, "we had to get paying clients in the door immediately just to survive." This time, however, Alexander's audio sales made it economically feasible to build the studio at a more relaxed pace, using "a lengthy process of trial and error."

Another aspect of Alexander's business that influenced the development of the room was his extensive travels made in the course of buying and selling equipment. "Most engineers are probably only really familiar with about ten rooms at the outside," he says. "I've visited

three or four *hundred* studios in the U.S. and Europe over the years." Because his trips frequently involve setting up mics for A/B comparisons, Alexander has had the chance to become more than casually familiar with a great number of facilities. In the process, he has picked up quite a few ideas about "shoulds and shouldn'ts" in studio design. San Francisco Sound Recorders' monitor system, for instance, is a copy of "the best system I ever heard" (though he prefers not to reveal its location). This tri-amped hybrid combines RCA, Altec and JBL components with a UREI crossover and power by Phase Linear and Marantz.

While Alexander has known for years that this system was his hands-down favorite, pulling together all the elements was no easy job. Some parts date back to the late '40s, and others, though more recent, were manufactured in limited quantities. Here again, Alexander's audio business played a helpful role: "I am a professional audio scrounger. It took me four-and-a-

—PAGE 123

PHIL RAMONE ON FOSTEX HEADPHONES

T-20

The T-20 enjoys an advantage which can be neither designed nor bought: positive word-of-mouth acceptance and recommendation within the professional audio community.

"Musicians simply like to work with them. One of the best moments in the studio was when we tried the T-Series headphones and the musicians said how great it was to be able to play and really hear themselves."



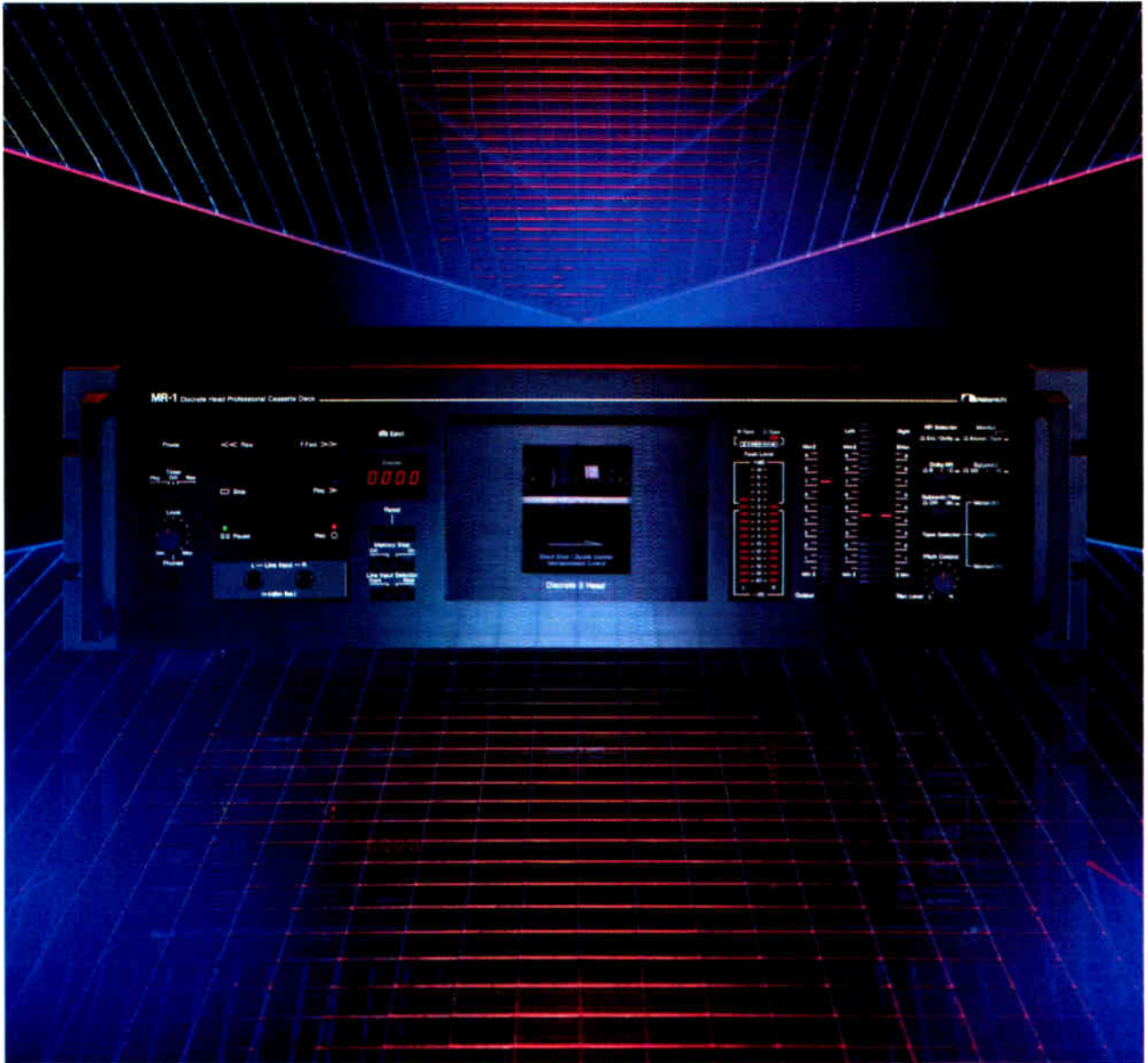
Phil Ramone

FOSTEX
Pro Sound Division

FOSTEX CORPORATION OF AMERICA
15431 Blackburn Avenue
Norwalk, CA 90650
(213) 921-1112

Circle #096 on Reader Service Card

Focus On Excellence



Introducing the MR-1 Discrete Head Professional Cassette Deck—
From Nakamichi—the company that created the cassette revolution!

The MR-1—a *professional* deck with front and rear
balanced inputs, unbalanced inputs, balanced and unbalanced outputs,
linear-scale peak-reading meters, independent
Tape and EQ selection, Dolby-B and -C NR, provision for external NR,
remote control, EIA rack mount and more!

The MR-1—with an Asymmetrical Dual-Capstan Direct-Drive Transport with
less than 0.027% flutter, an exclusive pressure-pad lifter that eliminates
scrape flutter and modulation noise, and a Motor-Driven-Cam operating
system that ensures gentle tape handling, automatic slack takeup,
and long-term reliability.

The MR-1—with the legendary Nakamichi Discrete 3-Head recording system
for 20—20,000 Hz \pm 3 dB response, absolute azimuth accuracy,
and incredible headroom.

The MR-1 Discrete Head Professional Cassette Deck—
From Nakamichi—the company whose profession is recording!



Nakamichi U.S.A. Corporation 19701 South Vermont Ave., Torrance, CA 90502 (213) 538-8150

*Dolby NR manufactured under license from Dolby Laboratories Licensing Corporation
The word "DOLBY" is a trademark of Dolby Laboratories Licensing Corporation

Circle #093 on Reader Service Card

FROM PAGE 121, S.F. SOUND

half years, but I found all the components in the system."

When Alexander began to rework his new room, the monitor system was the first thing installed. He was not disappointed by the results. "They have clarity, phase coherency and evenness of frequency response," he says. "Everyone who has heard them says they sound great. Our experience so far also shows that they translate real well to the outside world." White 1/3-octave equalizers will be available for those engineers who wish to alter the response curve, but Alexander expects them to be used rarely.

"The monitors are even better than we had hoped," agrees Cuniberti. "Once they were in, they set a high standard that everything else had to live up to." With that in mind, all audio lines in the studio and control room were completely replaced with Mugami cable. ("The difference between the Mugami and other cable can definitely be heard when comparing two cables with the same mic," asserts Alexander.) An automated 40x16x24 API console with parametric EQ, direct outs and five VCA subgroups was installed as the centerpiece of the upgraded control booth.

Meanwhile, work proceeded on enlargement of the isolation booth and enhancement of acoustics in the studio. The 33 by 21' room "has always had a great openness," says Alexander. "It's less dead than most rooms this size." "Polycylindrical diffusers" (hollow wood panels arched on one side and filled with fiberglass) were hinge-mounted along one wall, allowing variation of decay time. A problem of undesirable reflection between the ceiling and the parquet floor was addressed by experimentation. Cuniberti describes the process:

"We laid panels on the floor and moved them around to all different positions in the room until we were happy with the sound. Then we hung the panels from the ceiling exactly in the positions where they had been on the floor." The end result is a room which Cuniberti and Alexander believe has kept its feel while shedding some previous drawbacks.

When the sawing and soldering were complete in the studio and control booth, Alexander brought in the rest of the equipment he had been collecting for the room. "Being an audio dealer has been a great advantage," he reiterates. "It

has allowed me to amass everything we want." While he is known for his fondness for vintage gear, notably AKG and Neumann tube mics, Alexander's impressive equipment inventory features what he feels is "the best, old or new." Otari tape machines (MTR 90 MKII-24, MTR 12 half-inch 2-track), a Publison DDL/Harmonizer and an AMS digital reverb can be found on the same list with a Pultec tube DI/Preamp and a Teletronics LA2A in an eclectic blend of technological eras.

Alexander plans to build the studio's business by relying on word-

of-mouth generated by promotions designed to entice engineers to give the room a try. "I am after people who are concerned with genuine audiophile quality," he says. "Once an engineer works here, he won't be satisfied working somewhere else. The difference in quality will be readily apparent in comparison. I think that difference will show up in the final product that the client gets." With shake-down sessions underway as of late October, Dan Alexander is ready for the opportunity to put his confidence to the test.

—Philip DeLancie

STEP UP TO THE NEXT MAJOR MIC

Whether you're at the top or on your way there, you want to concentrate on your performance. Not your mic's performance. That's why Audix created the OM-1.

Beyond the OM-1's streamlined brass body, there's a hypercardioid dynamic mic that effortlessly raises acoustic gain, fights feedback, and rejects more off-axis sounds than any other (over 30dB front-to-back ratio).

You can rely on the OM-1 to add presence and clarity in the high end. Reduce boominess in the low. The OM-1's interchangeable grille caps let you tailor the sound to *your* needs. Choose the ball cap for crisp, clear vocals. . . or use the flat cap for amplified and brass instruments, kick drums, and pianos. Even with a trumpet or bass drum, the OM-1 never overloads.

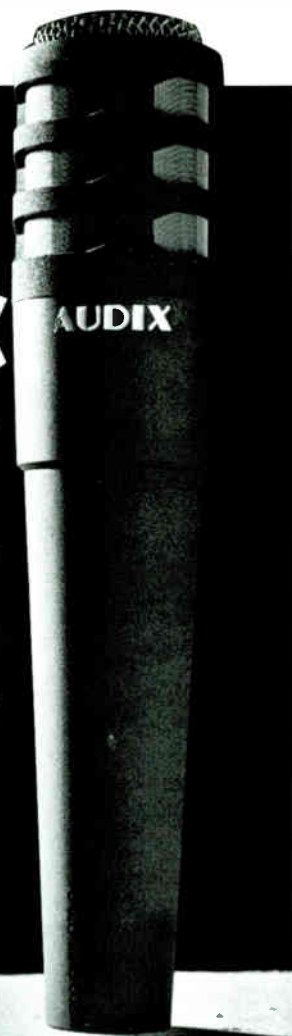
The OM-1—it's like having a condenser in a dynamic mic. It's

Beyond State-of-the-Art.™

AUDIX®

110 Ryan
Industrial Court
San Ramon
California 94583
(415) 831-0808

Distributed by
Chesbro in the
Western U.S.



Circle #094 on Reader Service Card

—FROM PAGE 120, *N.W. STUDIOS*
projects this year, despite the slack in biz in '85.

At Steve Lawson Productions in Seattle, billings are up about 20 percent over last year. "We've seen a substantial increase in our nighttime music recording," Lawson says. Among the contributing factors is the success of engineer Terry Date. His client, local heavy metal band Metal Church, has just signed a multi-album contract with Elektra Records on the strength of Metal Church's first album which Date co-produced. Date and engineer Bruce Calder have been recording everything from hip-hop music to rock and roll to jazz. Studios A and C were locked up all summer with album projects, and more recently Steve Miller booked Studio C to cut basic tracks for a new album. "Similar to other studios across the country, we're trying to stay competitive technologically; figuring out financially what

are the most reasonable equipment investments," says Lawson. "The Northwest studios may be in a unique position in that we must take into account the relative closeness to Los Angeles, and the availability there of studios with the latest technology."

DNA Productions in Seattle recently gave the world of video a try, and owner David Thompson reports that business is going "exceptionally well in both the video and the record market." JD Souther and Jim Schmidt (formerly of the Eagles), Legacy, and Invader were some of the artists in working on record projects, and local rockers, Perfect Stranger, chose DNA to do the filming, directing, editing and sweetening of their new video. Though the studio recently upgraded with a DX7 and LinnDrums,

—PAGE 177

Triad; Redmond, WA



SF NARAS Takes A New Direction

by Linda Jacobson

If you live south of Alaska, west of Denver, and north of San Luis Obispo, then you're in the region covering the San Francisco chapter of the National Academy of Recording Arts and Sciences. And if you happen to be an Academy member, you probably know that your new chapter president is John Barsotti.

Barsotti is also a voting governor in his second two-year term, and recently was appointed to the Academy's educational committee as the SF chapter representative. When Barsotti's not at a NARAS meeting, he's completing his doctorate in education, or producing and engineering independent musical projects. Most of his days, however, are spent in the Broadcast Communication Arts department at San Francisco State University, where he teaches people how to control and manipulate sound.

Barsotti was a young keyboard player in 1968 when he enrolled in State's BCA department—a unique milieu that possesses one of the area's largest soundstages and an up-to-date multi-track audio studio. He quickly and profoundly became involved in the program. As his former professor, present associate, and NARAS pioneer Paul C. Smith puts it, "John soon became a teaching assistant, then lab instructor, then took over the audio labs, graduated, and came to work with me. He was very active in designing the intermediate and advanced audio classes. Together, John and I are the audio department." Barsotti also developed the curriculum of SF State's summertime Music/Recording Industry (MRI) program, which he set up because so many people—some already in the industry, some not—wanted to expand

their audio know-how without enrolling in a degree program.

"It's really important to me," comments Barsotti, "to work on the forefront of the industry while I'm teaching. I can reflect all the changes and pass them along. I'd like to see even more interplay between NARAS and the educational arena. I always tell my classes about the NARAS events, such as the Studio Tours, because it's so beneficial for our BCA and MRI students to attend. It goes the other way, too. When BCA or MRI has seminars, we tap NARAS and bring our professionals in to talk to the students."

Barsotti's held almost every local NARAS office since he joined in 1975, a few months after the chapter's inception, and has witnessed its growth from several dozen members to over 350. Now, as the chapter's leader, he says, "What we see in the near future for NARAS is organizing its structure at the local level. I'd like to organize NARAS more as a business, which is difficult because everybody is donating their time. At the last Board meeting, however, we formed a Business Management committee. We've never made group decisions about where the money should be spent, how much is coming in, how much is going out. We had our first meeting last night, and it was very exciting."

"This isn't to say that it wasn't good before, it's just that we've never been this large. There was no need for much structure. Now, with more Board members, trustees, and members, we need more structure."

"The other thing we want to do is be more visible to the chapter's general membership. Rather than have five or six events that only hit tiny segments of the chapter, we'll have fewer events but with wider appeal, so we attract the musician, the mastering technician, as well as the engineer."

Barsotti's other plans for NARAS encompass the entire nation. Like NARAS' national president Michael Greene, Barsotti is committed to the chapter system. Without each individual chapter—SF, Los Angeles, Chicago, New York, Atlanta, Nashville, and Memphis—there would be no "national" organization, and for that reason Barsotti intends to "see more interplay between the San Francisco chapter and the other local chapters. Right now we don't have much to do with each other, and that shouldn't be. We're going to work to bring everybody closer together."



Call us TOLL-FREE
1-800-248-4827
or Inside California
1-800-348-4827



SHOWCASE
A·U·D·I·O

A Division of Guitar Showcase
3090 SO. BASCOM AVE.
SAN JOSE, CA 95124
408/377-5864

Let Showcase Audio & Tascam Show You The Light

TASCAM MS-16 ONE-INCH 16-TRACK

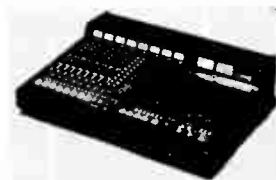
The Tascam MS-16 is a low-cost, 16-track machine using a one-inch-tape format at a single speed of 15 ips.

The Tascam MS-16 is a surprisingly good machine by any measure. It would seem that the "semi-pro" class of audio equipment has been derived largely by the addition of larger meters and a few more lights to what are substantially consumer-level devices. It is a pleasure to find a comparatively inexpensive piece of equipment that doesn't make the routine checks and adjustments necessary to the achievement of a high degree of quality and reproducibility of audio program product a task rivaling a frontal lobotomy. Head assemblies can be interchanged with only a metric hex driver. Biasing and equalizing are performed with full availability of metered-level information. Speed offsets are easily read to 0.1% resolution and minimal Search-to-Cue/Zero functions make this machine an outstanding performer in the audio signal respects alone.

Add to this the accessibility of capstan-drive signals and external-control functions, and we have a fine example for other competitors in this market to emulate.

Reprinted by permission of Recording Engineer/Producer April 1985.

Wow and Flutter: 15 ips: less than
±0.08%; peak DIN WTD:
±0.07% peak DIN
UNWTD: 0.04% NAB
WTD: 0.07%
NAB UNWTD.



388 "STUDIO 8" 8 TRACK RECORDING SYSTEM

The TASCAM 388 "STUDIO 8" is an extremely versatile tool for creative people in a variety of fields: musicians, arrangers, composers, and film/video post production people. The 388 is a complete recording system incorporating a full-function 8-in/8-buss mixer and a full servo controlled 8-track reel-to-reel recorder.

The mixer section includes 8 input channels, 8 PGM output busses, L/R stereo busses, Aux buss, Effect buss, 2 Effect return systems and Monitor section. Each input channel offers: wide range XLR balanced input, 1/4" line input, Access send/receive, 3-band parametric EQs, etc.

The recorder section was adopted compact 1/4" tape, 7" reel, 8-track format. We designed the new 3-motor full servo-controlled mechanism for the "STUDIO 8". Features include: Real time counter, SMPTE compatibility, Locator functions, built-in dbx with on/off (1-4 \$ 5-8) and ch. 8 defeat switches, and TAPE LOAD mode. The servo system and rec/play amps can be aligned and adjusted easily from the top.

M-300 SERIES MIXING CONSOLES

M-320: 20 IN/4 PGM Out/Stereo
Out/Mono Out

M-312: 12 IN/4 PGM Out/Stereo
Out/Mono Out

M-308: 8 IN/4 PGM Out/Stereo
Out/Mono Out

The new TASCAM M-300 series mixing consoles are equipped with a very flexible combination of features and functions so they can be successfully used in an extremely broad range of applications: from small studio recording, to mixing for live sound reinforcement, to audio broadcast production, and audio sweetening for video post-production.



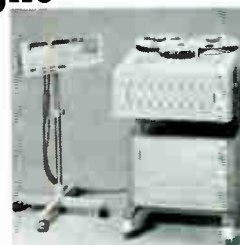
THE 200 SERIES MULTI-PURPOSE MIXERS

Sound reinforcement. Studio recording. Broadcast and video production/post production. These professional mixing jobs are as different as they are demanding.

The TASCAM 200 Series mixers were designed to handle all of these tough assignments—conveniently and dependably.

There are no shortcuts in the design or construction of the 200 Series. Here at TASCAM, we've been building mixers for over two decades. We're well aware of the crosstalk and R.F.I. problems that can develop in the field. So we design maximum protection into our consoles. Each channel has own circuit card for better isolation, mounted on a steel chassis for optimum strength and security. You never know what you'll run into on the road, so the 200's are built to accept inputs from any source. A generous power supply affords ample headroom for full dynamics and low distortion. The result is a mixer you know you can count on.

Both the 8-channel M-208 and the 16-channel M-216 were designed with your needs in mind. Whether you use your 200 Series board for several different applications or just one, its superb adaptability and solid design make it an exceptional investment.



Our line of
quality
products...

ADA
AKAI
AKG
ALESIS
AMPEX
ANVIL
APEX
ART-AUDIO
ATLAS
AUDIO-TECHNICA
BIAMP
BOSE
CARVER
CELESTION
CHERRYLAKE
COUNTRYMAN
CROWN
CUTEC
DBX
DELTA LAB
DDD
ENSONIC
ETA
EXR
FENDER
FOSTEX
FURMAN

GALAXY AUDIO
GOLDLINE
HARBINGER
HALL AUDIO
HME
HYBRID ARTS
IBANEZ
JBL
KLARK-TEKNIK
KORG
KURZWEIL
LEXICON
LIT LITE
LOFT
LSS
MID-ATLANTIC
MIMETICS
MONSTER-CABLE
MADY
MOTRONICS
NUMARK
OTARI
PAS
PASSPORT DESIGN
PEAVEY
PRO-CD

RAMSA
RANE
REMI
ROLAND
SENNHEISER
SHURE
SONY
SOUNDCRAFT
SOUNDCRAFTSMEN
STEWART
STL
STUDIOMASTER
SUNDOLM
SWITCHCRAFT
SYMMETRIX
SYNTECH
TANNOY
TAPCO
TASCAM
TEAC
THOMPSON
TIMES SQUARE
ULTIMATE SUPPORT
WINDLWIND
YAMAHA

Circle #095 on Reader Service Card

FROM PAGE 114, S.F. PRODUCTION sible approach to the timing question. Started in 1981 at its present location on San Francisco's Bryant Street, SFPG in its earlier days provided both production and post-production services. Over the years, the company has become almost exclusively post-production oriented. Dan Johnson, SFPG's business manager, explains this transition as partly a response to perceived market direction, and partly a way for the company to avoid competing for production work with its own post-production clientele.

"We started out going after the small to medium budget market, which is where the need was," says Johnson. "We developed our reputation in that area, and we've upgraded over time to our present situation, where we can serve the high-end projects, but also still be within reach of smaller productions."

A recent major renovation of SFPG's 10,000 square foot facility provided the occasion for development of long range plans regarding in-house audio capability. As explained by Mark Cretcher, audio engineer, the immediate goal was to be able to satisfy the needs of

clients who use SFPG for video post, but turn elsewhere for their audio work. "Nobody really wants to drive across town to do their audio at some other studio," says Cretcher, "if you can deliver what they need all in one place." The first phase of SFPG's audio upgrade, slated for completion December 1985, is designed to provide clients with in-house facilities for voice-overs and automatic dialog replacement (ADR), audio transfers, 8-track soundtrack building and a comprehensive music and effects library.

While these initial steps towards full service audio-for-video may seem relatively modest compared to some facilities, SFPG's long range goals are more ambitious. Cretcher envisions a comprehensively equipped, fully automated 24-track sweetening room, hopefully ready for operation as soon as early 1987. The decision to hold off for the moment on this more extensive audio capability is based partly on the idea that demand from the clients themselves will determine the best time to upgrade. Additionally, SFPG's priority commitment in this most recent renovation has been to their new video editing suite, referred to

as "El Grande" by the technical staff.

One could easily suppose that Cretcher might be disappointed to see the sweetening room of his dreams temporarily passed over in favor of "El Grande," known more formally as Edit 1. In fact, however, Edit 1 has been designed and built literally from the ground up to house SFPG's future audio sweetening facilities. The room's current complement of video gear (CMX 3400 editor, Grass Valley 300/3A triple re-entry switcher, Ampex ADO, E-Flex DVE and Chyron IV graphics/tilting system) will eventually be moved to a space in the building that has already been set aside for the future, final home of Edit 1.

SFPG called upon acoustical engineer Randy Sparks of RLS Acoustics to design the interior shape and treatment of the audio room to be. The inner shell of the room is decoupled from the rest of the building to minimize acoustic transmission in either direction, with the floor slab floated using Kinetics' vibration isolation system. Current audio gear includes an 8-input Neve 5400 series console, controllable by the CMX 3400 with JBL 4430 bi-radial monitors.

"Best sound system in the league is fun to listen to."

SPORT Magazine
rated the
Meyer Sound
MSL-10 Stadium
Loudspeaker tops!
Find out why.

BALLPARK FIGURES

GRADING THE STADIUMS FROM SEATS TO SUDS

KEY:

Ratings are based on a scale of 1 (lowest) to 10 (highest). Comments include food, drink and souvenirs, accessibility, including public transportation, parking and ease of access, neighborhood, location and surrounding amenities, upkeep, cleanliness, quality and state of repair of stadium and its amenities, ambience, describes overall feeling of enjoyment at the ballpark.

TEAM	AMERICAN LEAGUE										TOTAL	COMMENT
	CONCESSIONS	ACCESSIBILITY	PAK / JUNK	RESTROOMS	REPAIR/MAINT	NEIGHBORHOOD	PARKING	UPKEEP	CLEANLINESS	QUALITY AND STATE OF REPAIR		
ANAHEIM STADIUM CALIFORNIA ANGELS	7	7	8	9	9	6	5	9	8	68	The fans turn out in record numbers although they don't always seem to know why. But, if even beach balls can spoil a totally efficient park with its own unique appearance.	
ROYALS STADIUM KANSAS CITY ROYALS	6	6	8	6	8	8	7	9	9	67	A contemporary baseball palace, expertly designed with only one game in mind. The mountains alone are worth seeing. But why is the only grass beyond the leftfield fence?	
COUNTY STADIUM MILWAUKEE BREWERS	9	8	6	5	7	8	7	7	7	64	An underrated pleasure in every way, County Stadium still boasts the league's top-quality—orange with sauerkraut and that secret stadium sauce. Save room for several.	
FENWAY PARK BOSTON RED SOX	3	7	8	5	8	7	9	7	10	64	The Green Monster is the single most dominant feature in American League ballparks. The intimacy of Fenway is worth preserving forever.	
MEMORIAL STADIUM BALTIMORE ORIOLES	6	6	6	6	7	9	7	7	8	62	No fans are more vocally supportive than at Memorial Stadium, where unshowered spectators are rewarded with "Give that man a contract."	
TIGER STADIUM DETROIT TIGERS	8	7	8	5	4	5	7	7	9	60	Tiger Stadium looks, feels even smells like a ballpark should. Thanks in part to the league's best hot dogs sizzling on flat grills.	
COMISKEY PARK CHICAGO WHITE SOX	9	6	8	4	2	5	8	8	9	59	Still the most fun—once you get inside. Exploding scoreboard and the noisiest, rowdiest fans pumped by Nancy Faust's organ music and plenty of liquids. Concessions are an international delight.	
OAKLAND COLISEUM OAKLAND A'S	7	8	3	7	6	6	6	8	6	57	The seats provide lovely views of the neighboring mountains. Unfortunately, the playing field is almost as far away. Best sound system in the league is fun to listen to.	
ARLINGTON STADIUM TEXAS RANGERS	7	5	7	5	9	3	5	8	8	57	A masterfully upgraded minor league stadium under spectacular Texas skies. But the fans have little spark. Perhaps they've had too many nachos in the stifling heat. Even at night it's hot.	
THE METRODOME MINNESOTA TWINS	6	6	5	8	7	6	5	9	4	56	Baseball in the "Twilight Zone, due to the translucent ceiling and spongy turf. You'll hear the best unknown organist, Ronnie Newman, and the PA barking, "No smoking in the Metrodome!"	
YANKEE STADIUM NEW YORK YANKEES	6	7	7	6	1	4	8	7	9	55	The Yankees' aura remains—the facade, the monuments and the incomparable Bob Sheppard on the PA—making a trip here worth the risks involved.	



Meyer Sound

Meyer Sound Laboratories, Inc.
2832 San Pablo Ave Berkeley CA 94702
(415)486-1166

While Edit 1 has been designed for eventual audio sweetening use, its current role as SFPG's top of the line editing suite means that Edit 2 is, for the time being, likely to be the most actively employed room for audio. Acoustical redesign and treatment of this room by Sparks is to have been complete by December 1985. The audio console is a Sound Workshop Series 34, 12 in, with monitoring on JBL 4425s. A CMX 340 editing system, Grass Valley 1600 switcher (with E-Mem) and an NECE-Flex comprise the room's video set up.

Accessible through tie lines to both Edit 1 and 2 is a narration booth for voice-over and ADR. An adjacent small control booth (under construction as of this writing) will allow narration records as well as transfers and other simple audio projects to proceed without tying up the edit rooms.

At the heart of this network of rooms, connected to each by groups of tie lines, is Master Control. An Otari MTR-90 one-inch 8-track, scheduled for upgrading to 24-track when Edit 1 is transformed into a sweetening room, can be accessed via the tie lines from whichever room has the need.

While the final transition to full service audio may be a year or more away, elements of the audio system are already in place. Gear currently available to clients includes the Lexicon 200 digital reverb, a dbx stereo compressor, a Valley People effects rack (noise gates, comp/limiters), an Orban reverb and an Audio Arts Parametric EQ. Also on hand are a Linn-Drum machine and a Prophet 5 analog synthesizer. A Yamaha FM digital synthesizing system will be added soon, allowing clients MIDI interfaced scoring to picture.

Cretcher and Johnson are both positive about SFPG's current direction. With three on-line interformat CMX editing suites, one off-line suite, a 30' x 35' insert stage, computer graphics and animation capability and a new conference/viewing room, the company is clearly committed to full service video post-production. Full service audio is viewed as an important part of that commitment. With the building of an editing room designed to studio quality audio sweetening specifications, SFPG seems to have found an ideal way to meet today's priorities while preparing for tomorrow's audio-for-video demands.

—Philip De Lancie

10 REASONS WHY YOUR PRODUCTIONS SHOULD BE AT MUSIC ANNEX...

- | | |
|--|--|
| <p>1 MITSUBISHI MOTOR SALES OF AMERICA
(Cassette Duplication)</p> <p>2 CBS RECORDS,
(Album Production)</p> <p>3 JOANIE GREGGAINS PROD.
(Video Production)</p> <p>4 LEVI STRAUSS, INC.
(Cassette Duplication)</p> <p>5 TYCER, FULTZ AND BELLACK
(Media Production)</p> | <p>6 WINDHAM HILL RECORDS
(Best-Selling Records)</p> <p>7 HOME BOX OFFICE
(Film Production)</p> <p>8 APPLE COMPUTER
(Media, Cassette Production)</p> <p>9 BATTENBURG, FILLHARDT AND WRIGHT
(Media Production)</p> <p>10 YOUR NAME HERE...</p> |
|--|--|

MEDIA PROFESSIONALS CHOOSE MUSIC ANNEX



Music Annex

970 O'BRIEN DRIVE MENLO PARK, CA 94025 (415)328-8338

Circle #098 on Reader Service Card

We're changing.



sun valley audio

We're installing the NEW ICC 9000

40 Channels • Automated • KNOBLOG™ • Gates & Limiters Every Channel, 12 Sends/Channel

sun valley pro audio

The Source In The Northwest for

OTARI • JBL • AKG • KURZWEIL • ICC • LEXICON • EVENTIDE • 3M TAPE • VALLEY PEOPLE

Box 285, Sun Valley, Idaho 83353 • 208-726-3476

Circle #099 on Reader Service Card

• NORTHWEST STUDIOS •



CONTENTS

130	4 TRACK STUDIOS
132	8 TRACK STUDIOS
142	16 TRACK STUDIOS
152	24- TRACK STUDIOS

Mix listings procedure: Every month, **Mix** mails questionnaires to recording studios and/or other vital facilities and services for the recording, sound and video production industries. Basic listings (name, address, contact) are provided free of charge. Extended listings (equipment, credits, specialization), and photographs or company logos may be included at a nominal charge. If you would like to be listed in a **Mix** Directory, write or call Lauri Newman, **Mix** Directories, 2608 Ninth Street, Berkeley, CA 94710, (415) 843-7901.

Upcoming Directory Deadlines:

Video Production/Post-Production Facilities: **Jan. 14, 1986**

Northeast U.S. Recording Studios: **February 5, 1986**

Sound Reinforcement/Remote Recording: **March 5, 1986**

Southwest Studios/Recording Schools: **April 7, 1986**

NORTHWEST STUDIO LOCATION INDEX

The information in the following listings section was supplied by those listed. *Mix* claims no responsibility for the accuracy of this information. People and equipment change, so please verify critical information with the studios.

ALASKA

Anchorage

8 Audio Production Studio 132

8 Boogie-Till-Dawn 132

24 Surreal Studios 168

Fairbanks

24 Unregulated Recording 171

Juneau

8 S-G-L Record 139

CALIFORNIA (NORTHERN)

Alameda

8 Bay Records 132

24 Infinite Studios 162

Aplos

16 Music Art Recording Studio 148

Atwater

16 Atwater Recording 142

Belmont

24 Happy Tracks Recording 161

24 OTR Studios 164

Ben Lomand

4 Phantasma Sound 130

Berkeley

8 Bobcat Recording 132

4 Control 1 130

24 Dorado Recording 156

24 Fantasy Studios 158

16 Likewise Productions 146

24 Live Oak Studio 162

8 North Berkeley Recording 138

8 1750 Arch Studios 139

4 Robert Shumaker Recording 130

16 Sierra Sound Labs 150

8 Studio P 139

8 Syntones 140

Big Bend

8 Transient Sounds 140

Blue Lake

16 Redwood Creek Recording 150

Boulder Creek

8 Mountain Studio 138

Burlingame

8 Audio Visual Associates 132

8 Dravin Audio Prod. 134

Brisbane

16 Brand Studios 144

Carmichael

24 Pacific Mobile Recorders 164

Campbell

8 McPet Music 136

4 Reel Time Productions 130

24 Soundtek Studios 167

Concord

24 Akashic Recording 152

24 R.O. Studios 166

Cotati

24 Pralle Sun Recording 166

4 Skuller Productions 130

4 Zone Recording 131

Davis

16 Davis Sound Studio 144

8 Sneak Sound 139

Denair

16 Musical Image Productions 148

Dutch Flat

8 Jude Productions 136

Fairfield

4 "Barking Dogs" 130

Felton

8 Fox Recording 134

Fremont

8 Audiographic Production 132

8 Hextrex Productions 135

8 Pearl's Place 138

Hayward

24 Phil Edwards Recording 156

4 Walkersound 131

Healdsburg

8 Schechter Studios 139

Homeood

8 Wild West Graphics & Communications 141

Larkspur

24 Hart Productions 161

8 Jazzbeaux Studio 136

Livermore

8 Current Sound Productions 134

16 Little People Studio 136

Los Gatos

8 Summit Studios 140

Madara

24 Sound Technique Recording 167

Manteca

8 Creation Studios 134

Martinez

8 Possum Studio 139

Mendocino

8 Mendocino R.O.P. 138

Menlo Park

24 Music Annex Inc. 163

Merced

8 Rai-Recording 139

Mill Valley

16 Fresh Studio 146

8 Sensational Sounds 139

Modesto

24 E.T. Recorders 157

8 Jade Productions 135

Morgan Hill

8 Peekaboo Mountain Studios 138

Newda City

4 Anada Recording 130

8 Soundcapule Studios 139

24 Unicorn Studio 171

Newark

24 Montage Recording 163

Novato

4 Big Ear Studio 130

16 Calypso Records 144

24 Color Zone Productions 154

Oakland

8 Antomar Studios 132

4 Artchoko Productions 130

16 Bay Sound Reproduction 142

8 Center for Contemporary Music 134

4 Chonk Moonhunter 130

8 Dangerous Rhythm Studios 134

8 Deva Studios 134

8 Freeway Eight Track 134

16 Freeway Recording Inc 146

4 Instant Music Recording 130

24 Denny Jaeger Creative Services, Inc. 162

16 Outback Studios 148

16 Peakdesign 148

8 Third Wave Productions 140

8 Werewolf Sounds 141

Occidental

24 Joe Hoffman Studios 161

Orinda

8 Xandor Recording 141

Pacifica

8 Keyboard Studios 136

Palo Alto

16 James Daniels Productions 144

8 Jazone Audio Services 135

8 Recording Etc. 139

Quincy

8 New Life Broadcasting 138

Redwood City

8 Arcal Productions 132

16 Dragon Studios 145

Richmond

24 Bayview Studio 153

24 Starlight Studio 167

Sacramento

8 Israel Productions 135

24 Moon Recording, Inc. 163

8 Myers Audio Recording 138

16 Ray Nakamoto Productions 148

16 Paradise Studio 148

24 Pyramid Recording 166

16 Bill Rase Productions, Inc. 150

8 Studio Z Recording 140

24 Swingstreet Studios 168

San Bruno

8 Avlo Productions 132

San Carlos

24 Spectrum 167

San Francisco

8 Arterma Audio 132

16 Bank of America Media Services 142

24 Bear West Studios 153

16 Robert Berke Sound 144

8 Bralove Productions 132

16 Capp St Studios 144

24 C.D. Presents/Recording 153

24 Coast Recorders 153

8 The Concept Organization 134

24 Different Fur, Ltd. 156

16 Duncan Street Studios 146

8 EMW Studio Systems 134

8 Emissus Productions 134

8 Heavenly Grotto Recording 135

8 Hiatus Productions 135

24 The Hyde Street Studios 161

24 Independent Sound 161

4 KITS Radio 130

8 McCune Studios 136

8 Mental Floz Musik 138

16 Peter Miller Recording 147

24 Mobius Music Recording 162

24 M.S. Productions 163

24 Oasis Recording 164

24 One Pass Audio 164

16 Parvus Studios 148

24 Kelly Quan Recording 166

24 Russian Hill Recording 167

24 San Francisco Sound Recorders 167

16 Randall Schiller Productions 150

8 Seismic Productions 139

16 Sound & Vision 150

16 The Sound Service 150

24 Studio C 168

4 Surrogate Noise, Ltd. 131

8 Transmedia, Inc. 131

4 Transparent Recordings 131

4 Al Vedo Associates 131

24 Dave Wellhausen Studios 171

8 Wrong Element Studios 141

San Jose

16 Astral Sounds Recording 142

24 Ayre Studios 152

8 Bent Nail Studios 132

8 B-Side Music 134

16 Creative Sound Studio 144

8 Hard-Clouds Prod. 134

4 Lovebone Publishing 130

8 Mig Sound 138

4 P.F.S. Recording 130

16 San Jose State University 150

8 Bill Tarvin Productions 140

8 3-B Productions 140

24 Tiki Sound Studio 170

8 Bob Wilson Recording 141

San Mateo

16 Avid Productions 142

San Rafael

8 A Brown Sound 132

16 Atmosphere 142

16 Mannsound 147

16 Synchronicity 151

16 Synstacy 151

24 Studio D Recording 168

24 Tarpan Studios 168

24 Video Affects 171

Santa Clara

16 The Archives 142

16 Audio Visions 142

8 Cave Studios 134

8 Ego Maniac Studio 134

16 Hot Tracks 146

4 Penorama Productions 130

8 Thomas Recordings 140

Santa Cruz

4 Bonny Doon Sound Works 130

24 Fane Productions 157

16 Magic Sound 146

4 Sounds Natural Audio 131

4 Square One 131

Santa Rosa

24 The Banquet Sound Studios 152

16 Ocean Breeze Recording 148

Sausalito

16 Authentic Sound 142

24 The Plant Studio 164

Scotts Valley

16 Rick Chaisse Prod. 144

24 L.P. Studios 162

Sonoma

24 Sonoma Sound 167

South Lake Tahoe

24 Hallmark Recording 160

South San Francisco

8 Ping Pong Productions 138

8 Progressive Sound Inc 139

Stinson Beach

24 Ocean Studio 164

Stockton

24 Custom Recording 156

8 KUOP Recording Studios 136

Studio City

8 Dancing Bear Studio 134

Sunnyvale

24 Binary Code 153

8 Blue Note Studio 132

16 Suite 17 151

Tracy

8 Ditan Recording 134

Tulelake

24 Mountain Mobile Recording 163

Vallejo

8 Sunshine Recording 140

Watsonville

16 Twilight 151

Whetland

8 Studio Sea 140

COLORADO

Arvada

4 Sanctuary Studios 130

Aurora

4 Xenadu Studios 131

Bayfield

16 Magic Music Recording 146

Boulder

8 Claws-On Productions 134

16 Coupe Studios 144

24 Mountain Ears Recording 163

24 Slow Boat 167

8 Wrenovation Sound 141

Colorado Springs

16 Little Elk Studio 146

24 San Studios, Inc. 164

16 Starsong 150

Denver

24 FTM Studios 158

8 Hands-On Recording 134

4 Hank's Basement Audio 130

8 Inial Records Co 135

16 JMC Music Group 146

8 Mammoth Recording 136

8 Multivision of Denver 138

8 Reel Art Recording 139

8 Reels on Wheels 139

8 Rocky Mountain Artists, Inc. 139

8 Schlagel Studio 139

8 Sound Control 139

8 Soundmark, Ltd. 139

4 Starwest Productions 131

4 Western Cine Services, Inc. 131

Englewood

16 Brown Bag Productions 144

8 Heartbreak Hotel Studio 135

4 Road Warner Sound 130

Fort Collins

16 Paragon Sound 148

Frisco

8 Fair Winds Productions 134

Hot Sulphur Springs

8 XL Communications 141

Loveland

8 On The Rock 138

8 Sound Control 139

Evergreen

8 Rocky Mountain Artists, Inc. 139

North Glenn

24 Avalanche Recording 152

16 Fast Track 146

Thornton

8 Underground Sound 141

Westminster

24 Colorado Sound Recording 153

GUAM

Agana

8 Sounds Unlimited 139

HAWAII

Hauula

24 Sea West Studios/Hawaii 167

Honolulu

24 Commercial Recording 154

24 Dolphin Sound 156

4 ETS Record Co 130

24 Studio Hawaii 168

4 Studio Q 131

Kailua

24 Soundlink/Dolphin Sound 167

Kailu-Kona

8 LCO Music Productions 136

Kauai

8 MantraSound Studio 136

Mau

24 Lahaina Sound Recording 162

16 Melody Line Productions 147

Mt. View

16 Rain Recording 150

IDAHO

Boise

4 Snake River Sound 131

8 Waveform Recording 141

Eagle

8 Stolen Horses Productions 139

Idaho Falls

8 Mike's Music 138

Keetchum

24 Sun Valley Audio 168

Lucile

16 Shewbread Music 150

Meridian

16 Cellar Door Studios 144

Rexburg

8 Renoire Audio Productions 139

MONTANA

Billings

16 Jester Sound Studio 146

Bozeman

8 Peak Recording & Sound 138

Huson

16 Backstreet Recording 142

Judith Gap

4 Cowhide 130

Missoula

16 Music Center Studios 148

NEVADA

Incline Village

24 Cougar Run/Lake Tahoe 154

Reno

24 Grammie's House 160

24 Starsound Audio, Inc. 168

8 TB Recordings 140

Sparks

24 Axe-Trax 152

OREGON

Albany

4 Database Productions 130

Ashland

4 Tipleodeon Audio Productions 131

Cave Junction

8 Sugarbear Studio 140

Eugene

8 EM AN-EE Sound Studios 134

8 Generation Organization 134

16 Gung-Ho Recording 146

24 Nud Recording 170

8 Subliminal Recording 140

Glenden Beach

4 Pine Apple Studios 130

Grants Pass

8 Little Oak Sound 136

Jacksonville

16 Starlight Recording 150

Lincoln City

8 Harbinger N.W. Productions 134

Medford

8 McCoy Studios 136

8 Simus Productions 139

Milwaukie

4 Hydrophear Recording 130

24 Sound Impressions 167

Newberg

16 Dog Fish Sound 145

Portland

16 Cascade Recording 144

4 Chinese Dog Girl Studio 130

24 Desitrek Studios 156

8 Gary Gadwood Recording 134

8 Grass Roots Recording 134

16 Jon Newton Music 148

24 Northwestern, Inc. 164

24 Recording Associates 166

8 Renegade Recording 139

24 Spectrum Studios, Inc. 157

8 Teknifilm, Inc. 140

Roseburg

8 Roseburg Music 139

Salem

8 Cherry Recording 134

8 Western Oregon Sound 141

Springfield

8 Commercial Attractions 134

Tigard

8 Forte 134

UTAH

London

24 Audio Vision Studios 152

Mapleton

16 Rocky Mountain Production 150

Orem

24 Summit International Studio 168

Provo

24 Rosewood Recording 166

4 Sound Concepts 131

Salt Lake City

16 Access Productions 142

24 Boonville Media Communications 153

8 Covenant Recordings Inc 134

24 Sound Column Studios 167

WASHINGTON

Bellevue

8 Nova Recording Services 138

Bellingham

8 Dash Studios 134

16 Lay A Track Recording 146

Bothel

8 Horner Audio Productions 135

Buckley

16 C M I 144

Cheney

16 Eastern Washington Univ. 146

Ellensburg

8 Allright Productions 132

Federal Way

16 Argosine Productions 142

Gig Harbor

4 C.W. Recording 130

Greenbank

8 South End Productions 139

Index

8 Paradise Sound Inc 38

Kennewick

8 MEI Sound Studios 36

Kent

8 Echo Studio 134

Olympia

8 Capitol City Studios 134

8 Westmont Recording 141

Port Orchard

8 Horizon Audio Recording 135

Redmond

24 Trad Studios 70

Richland

8 Birkin Grl. 32

Seattle

8 The Amazing Pink Things 132

8 Applewood Recording 132

8 Audio Recording Inc. 132

8 Blackwood-Laird Studio 132

16 Crow Recording 144

24 DNA Productions 156

24 Ironwood Studio 162

8 JB Recordings 136

24 Steve Lawson Productions 162

4 Lew's Recording Place 130

16 Milltree Productions 47

24 The Music Source 164

16 The Right Track 150

16 Roxwood Studios 150

8 Salmon Bay Productions 39

4 Soundtec 131

8 TDS Productions 40

24 Telemation Productions 168

24 Triangle Recording 70

8 Vineyard Studio 141

Spokane

8 Audio Recording 32

8 Inland Audio Visual Co 135

4 Reel Creations 30

16 Sound Recording 150

Tacoma

4 Evergreen Sound Studios 130

8 P.L.U. Audio Services 138

24 T.I. Recording Studio, Inc. 170

Vancouver

8 Coxy Dog Recording 134

Woodinville

24 Bear Creek Studio 153

Yakima

16 MSI 147

WYOMING

Alpine

16 Jeeps Bar & Recording 146

Carpenter

8 Dusty Roads Studio 134

Casper

8 Casper College Music Dept 134

Jackson

8 Sound Tracks Recording 139



• **ANANDA RECORDING STUDIO**
14618 Tyler Foote Rd., Nevada City, CA 95959
(916) 292-3111
Owner: James Donald Walters
Studio Manager: John M. Peters

• **ARTICHOKE PRODUCTIONS**
also REMOTE RECORDING
4114 Linden St., Oakland, CA 94608
(415) 655-1283
Owner: Paul Kalbach
Studio Manager: Paul Kalbach

• **"BARKING DOGS"**
also REMOTE RECORDING
917½ Washington St., Fairfield, CA 94533
(707) 428-3240
Owner: Raymond Towns, Jr.
Studio Manager: Nikko

• **BIG EAR STUDIO**
also REMOTE RECORDING
801 McClay Rd., Novato, CA 94947
(415) 892-5911
Owner: Mel Martin
Studio Manager: Mel Martin

• **CHINESE DOG GIRL STUDIO**
also REMOTE RECORDING
5718 N.E. Alton St., Portland, OR 97213
(503) 282-2491
Owner: C.D.G./Semprini Music Group
Studio Manager: P.J. Newman

• **CHONK MOONHUNTER**
also REMOTE RECORDING
2721 Bellaire Place, Oakland, CA 94601
(415) 436-6978
Owner: Curtis Choy

• **CONTROL 1**
also REMOTE RECORDING
2207 Shattuck Ave., Berkeley, CA 94704
(415) 848-4395
Owner: KPFA Radio
Studio Manager: Jim Bennett

• **C. W. RECORDING**
only REMOTE RECORDING
4014 155th St. N.W., Gig Harbor, WA 98335
(206) 857-7588
Owner: Charles Wright
Studio Manager: Charles Wright

• **DATABASE PRODUCTIONS**
also REMOTE RECORDING
1598-C 15th Ave. S.E., Albany, OR 97222
(503) 928-1239
Owner: Craig Rose
Studio Manager: Craig Rose

• **BONNY DOON SOUND WORKS**
7994 Empire Grade, Santa Cruz, CA 95060
(408) 426-5249
Owner: Allen Hall
Studio Manager: Allen Hall

• **ETS RECORD CO.**
also REMOTE RECORDING
P.O. Box 932, Honolulu, HI
(808) 533-6095
Owner: Richard Riccio
Studio Manager: Ed Dorman

• **EVERGREEN SOUND STUDIOS**
also REMOTE RECORDING
P.O. Box 11061, Tacoma, WA 98411
(206) 474-1905
Owner: Joe Brignone
Studio Manager: Joe Brignone

• **HANK'S BASEMENT AUDIO**
also REMOTE RECORDING
5665 E. Colorado Ave., Denver, CO 80224
(303) 756-8777
Owner: H.B. (Hank) Anderson, Jr.
Studio Manager: H.B. (Hank) Anderson, Jr.

• **HYDROSPHEAR RECORDING**
4703 S.E. Monroe, Milwaukie, OR 97222
(503) 659-1372
Owner: John DuVal
Studio Manager: Cpt. Fog

• **INSTANT MUSIC RECORDING SERVICE**
also REMOTE RECORDING
1833 Solano Way, Oakland, CA 94606
(415) 237-8270
Owner: Linc & Liz Warren
Studio Manager: Linc Warren

• **KITS RADIO**
50 9th St., San Francisco, CA 94103
(415) 626-1053
Owner: Entercom, Inc.
Studio Manager: Ed Krampf

• **LEW'S RECORDING PLACE**
also REMOTE RECORDING
1219 Westlake Ave. N., Seattle, WA 98109
(206) 285-7550
Owner: Lew Lathrop
Studio Manager: Lew Lathrop

• **LOVEBONE PUBLISHING**
1210 Matterhorn Dr., San Jose, CA 95132
(408) 729-1971
Owner: James Bradford
Studio Manager: James Bradford

• **PANORAMA PRODUCTIONS**
also REMOTE RECORDING
2353 De La Cruz Blvd., Santa Clara, CA 95050
(408) 727-7500
Owner: Don Dulmage
Studio Manager: Gary Moore (audio), Chris Dulmage (video)

• **P.F.S. RECORDING**
also REMOTE RECORDING
P.O. Box 6840, San Jose, CA 95150
(408) 275-6322
Owner: Mike Halloran
Studio Manager: Mike Halloran

• **PHANTASMA SOUND**
also REMOTE RECORDING
7935 Fremont Ave., Ben Lomond, CA 95005
(408) 336-2494
Owner: Errol G. Specter
Studio Manager: Errol G. Specter

• **PINE APPLE STUDIOS**
also REMOTE RECORDING
P.O. Box 427, Gleneden Beach, OR 97388
(503) 757-8702, 764-2617
Owner: Clayton Ashley
Studio Manager: Henry Zellers

• **RAWHIDE**
also REMOTE RECORDING
Bercaile Creek, Judith Gap, MT 59453
(406) 473-2242
Owner: John C. & Andy Mills
Studio Manager: Jack Mills

• **REEL CREATIONS**
also REMOTE RECORDING
E. 11321 37th, Spokane, WA 99206
(509) 928-2460
Owner: Alan J. Perry
Studio Manager: Alan J. Perry

• **REEL TIME REPRODUCTIONS**
only REMOTE RECORDING
190 Marianna Way, Campbell, CA 95008
(408) 265-5364
Owner: Tim Whyte
Studio Manager: Tim Whyte

• **ROAD WARRIOR SOUND**
only REMOTE RECORDING
4090 S. Pearl St., Englewood, CO 80110
(303) 761-8738
Owner: Douglas Zeno
Studio Manager: Douglas Zeno

• **SANCTUARY STUDIOS**
8143 Routt St., Arvada, CO 80005
(303) 423-2476
Owner: Scott E. Wunch
Studio Manager: Scott E. Wunch

• **ROBERT SHUMAKER RECORDING SERVICES**
only REMOTE RECORDING
2321 Russell #1E, Berkeley, CA 94705
(415) 548-9986
Owner: Bob Shumaker

• **SKULLER PRODUCTIONS**
also REMOTE RECORDING
8479 Lakewood Ave., Cotati, CA 94928
(707) 795-0172
Owner: Kevin Moore
Studio Manager: Kevin Moore

● **SNAKE RIVER SOUND**
also REMOTE RECORDING
 1008 N. 6th, Boise, ID 83702
 (208) 345-5282
 Owner: David Smyth
 Studio Manager: David Smyth

● **SOUND CONCEPTS**
also REMOTE RECORDING
 108 W. Center & 175 W. 300 So., Provo, UT 84601
 (801) 375-7333
 Owner: Michael K. Jensen
 Studio Manager: Kaye L. Jensen

● **SOUNDS NATURAL AUDIO SERVICES**
also REMOTE RECORDING
 214 Keystone Ave., Santa Cruz, CA 95062
 (408) 425-8015
 Owner: Bill Burnside, Ken Botelho, Bill Van Bloom
 Studio Manager: Bill Burnside, Ken Botelho, Bill Van Bloom

● **SOUNDTEC**
 Mail Station GO-10, V of W, Seattle, WA 98195
 (206) 543-7107
 Owner: Ted A. Peters
 Studio Manager: Dean Evans, head eng.

● **SQUARE ONE**
also REMOTE RECORDING
 104 Yosemite Ave., Santa Cruz, CA 95060
 (408) 429-6929
 Owner: John V. Reynolds
 Studio Manager: John V. Reynolds

● **STARWEST PRODUCTIONS**
also REMOTE RECORDING
 1391 N. Speer Blvd. #490, Denver, CO 80204
 (303) 623-0636
 Owner: Steven Pettit
 Studio Manager: Steven Pettit

● **STUDIO Q (Part of QDD)**
also REMOTE RECORDING
 816 Queen St., Honolulu, HI 96813
 (808) 521-6961
 Owner: Miquel Quenyer
 Studio Manager: Gray Gleason

● **SURROGATE NOISE, LTD.**
also REMOTE RECORDING
 P.O. Box 421395, San Francisco, CA 94142
 (415) 550-7891
 Owner: DL Keller
 Studio Manager: Dan Keller

● **TIPLEODEON AUDIO PRODUCTIONS**
also REMOTE RECORDING
 1720 Colstine Rd., Ashland, OR 97520
 (503) 482-5556
 Owner: David C. Malby
 Studio Manager: Mike Johnson

● **TRANSPARENT RECORDINGS**
only REMOTE RECORDING
 P.O. Box 880933, San Francisco, CA 94188
 (415) 563-6164
 Owner: Lilly Lewis
 Studio Manager: Lilly Lewis

● **AL VEDRO ASSOCIATES, INC.**
also REMOTE RECORDING
 725 Second St., San Francisco, CA 94107
 (415) 957-1131
 Owner: Al Vedro
 Studio Manager: David Demontluzin

● **WALKERSOUND**
also REMOTE RECORDING
 25140 Fairview Ave., Hayward, CA 94542
 (415) 581-7926
 Owner: David L. Hootwalker
 Studio Manager: David L. Hootwalker

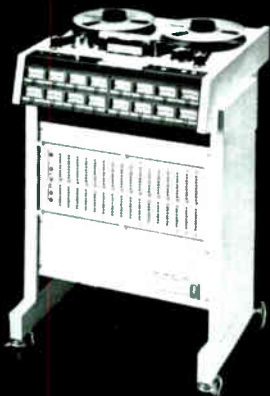
● **WESTERN CINE SERVICES, INC.**
 312 S. Pearl St., Denver, CO 80209
 (303) 744-1017
 Studio Manager: Paul Emrich
 Engineers: Paul Emrich, David Emrich
 Tape Recorders: Magna-Tech MR 1036, 35mm/16mm, 3 track, HCA FR 10, 35mm/16mm, 3 track; Scully 280-2, 3 track, Scully 280-4, 4 track
 Mixing Consoles: Soundcraft 600 B, 24 x 8 x 2.
 Monitor Amplifiers: McIntosh
 Monitor Speakers: JBL, Altec
 Echo, Reverb & Delay Systems: EMT plate; 140 Stereo.
 Other Outboard Equipment: UREI 565 filters, Teletronix leveling amps, Orban Paragaphic EQ 672, Dolby 361/12 tracks of 35mm or 18 tracks of 16mm for film mixing.
 Microphone: Neumann U67
 Video Equipment & Services: Audio for video sweetening (and video duplications), Ampex 1", Sony 1/4" and Beta, Panasonic VHS
 Rates: Available upon request.

● **XANADU STUDIOS**
also REMOTE RECORDING
 1163 Lewiston St., Aurora, CO 80011
 (303) 366-6815
 Owner: Richard J. Abitbol
 Studio Manager: Richard J. Abitbol

● **ZONE RECORDING**
also REMOTE RECORDING
 7884 Old Redwood Hwy., Cotati, CA 94928
 (707) 664-1213
 Owner: Blair Hardman
 Studio Manager: Blair Hardman

The Mix Bookshelf Catalog contains the best audio, video and music industry texts available from over 40 publishers. For your free copy, see page 165.

Proven Success



OTARI MX-70 1" 16 Track Recorder

MX-70 features a microprocessor-controlled constant-tension transport, a full-function remote controller, exceptional audio electronics, and connectors for interfacing to any SMPTE/EBU time code based editing system, controller, or synchronizer. **RETAIL PRICE \$14,950.00**



AMEK/TAC SCORPION

- 2 Chassis Sizes: 16 x 8 x 2 and 24 x 16 x 2
 - Fully Modular Construction
 - 12 - 32 Inputs
 - 4 Band EQ, Swept Mids, high/low shelving
 - 8 and 16 Tape Monitors/Effects Returns
 - 8 and 16 Buss Outputs/Subgroups
 - 4 EFX/Cue Sends
 - 4 EFX Send Masters with AFL
 - Transformerless Mic Preamps
 - 48 Volt Phantom Power each Channel
 - Direct Outs on all Inputs
- RETAIL PRICE FROM \$6,495.00**



Our New Location
619 South Glenwood Place
Burbank, CA 91506
(818) 843-6320

Circle #100 on Reader Service Card



•• **AVLO PRODUCTIONS**
269 Maatck Ave., San Bruno, CA 94066
(415) 589-8941
Owner: Tony Avila, Steve Lillo
Studio Manager: Tony Avila, Steve Lillo

•• **BAY RECORDS**
1516 Oak St., Suite 320, Alameda, CA 94501
(415) 865-2040
Owner: Michael Cogan
Studio Manager: Michael Cogan
Engineers: Michael Cogan
Dimensions of Studios: 30 x 40
Dimensions of Control Rooms: 18 x 12
Tape Recorders: M-79, 8 track, Ampex ATR 800 2, 2 track, Sony 854-4S, 4 track.
Mixing Consoles: Custom built.
Monitor Amplifiers: McIntosh MC60s, Hafler 225
Monitor Speakers: JBL 4311
Echo, Reverb & Delay Systems: MICMIX Super C
Other Outboard Equipment: dbx 160 compressor, SAE graphic, Metrotech graphic.
Microphones: Neumann U87s, AKG D224E, CA52, Beyers M260, E-V RE15, etc.
Instruments Available: Grand piano
Rates: \$30/hr plus tape in the studio. 1000 LPs from your tape and artwork for \$3,200 including color covers, every thing 1000 45s \$800 total

•• **BENT NAIL STUDIOS**
2375 Cory Ave., San Jose, CA 95128
(408) 244-0766
Owner: Dave Morris
Studio Manager: Dave Morris

•• **BIRKIN GRIF**
P.O. Box 1096, Richland, WA 99352
(509) 946-7914
Owner: Alonzo Powers
Studio Manager: A Powers
Engineers: A Powers
Dimensions of Studios: 14 x 12, 12 x 13
Dimensions of Control Rooms: 14 x 12
Tape Recorders: Tascam 40-4, 4 track; Tascam 38, 8 track; Tascam 32, 2 track; Technics M234X, cassette.
Mixing Consoles: Tascam 30, 8 x 4; Biamp 6702, 6 x 2.
Monitor Amplifiers: Yamaha CA 400
Monitor Speakers: ADS LB10 Realistic Mach One
Echo, Reverb & Delay Systems: Lexicon PCM4, Binn; 6702
Other Outboard Equipment: 150 NR on air recorders
Microphones: S.E. Audio Technica ATM 63, Sony ECM 270
Instruments Available: Yamaha CX5M, Yamaha F115, Roland JX 3P, Electrocomp 101, Roland TR 909, Roland GR 300 guitar synth, Roland G 808 guitar synth controller, Carvin & Taka guitars, Fender Jazz Bass, Yamaha G50 112II & Carvin pro bass amps, Slingerland 5 piece drum set
Rates: \$15/hr

•• **BLACKWOOD LAIRD STUDIO**
also REMOTE RECORDING
603 Eastlake Ave. E., Seattle, WA 98109
(206) 622-8837
Owner: Maggie Laird
Studio Manager: Maggie Laird

•• **BLUE NOTE STUDIO**
also REMOTE RECORDING
172 Bernard St., Sunnyvale, CA 94086
(415) 965-2138
Owner: Brady Austin
Studio Manager: Geoff Giese

•• **BOBKAT RECORDING STUDIO**
P.O. Box 5503, Berkeley, CA 94705
(415) 548-9766
Owner: Kathleen Bobkat
Studio Manager: Bobkat

•• **BOOGIE-TIL-DAWN**
also REMOTE RECORDING
17100 Feodosia, Anchorage, AK 99516
(907) 345-2017
Owner: Gary Sloan
Studio Manager: Gary Sloan

•• **BRALOVE PRODUCTIONS**
621 Lawton St., San Francisco, CA 94122
(415) 566-9811
Owner: Bob Bralove
Studio Manager: Bob Bralove

•• **A BROWN SOUND**
23 Joseph Ct., San Rafael, CA 94903
(415) 479-2124
Owner: Robert Brown
Studio Manager: Robert Brown
Engineers: Peter Penhollow
Dimensions of Studios: (59) 20 x 24; (75) 20 x 50; (101) 20 x 30 x 50.
Dimensions of Control Rooms: 12 x 15
Tape Recorders: Otari MX 5050-8X, 8 track; TEAC 3440, 4 track; Sony 4330, 4 track.
Mixing Consoles: Tangent 1602, 16 in x 2 out; Crest 16X Yamaha 6 in x 2 out.
Monitor Amplifiers: JBL Icecube, Dyna 70
Monitor Speakers: JBL Auratone
Echo, Reverb & Delay Systems: Space Station, SST 282 Ibanez AD-230, MXR, Fender tube, Echoplex Moog Phaser Space Echo 150.
Other Outboard Equipment: SAE 2700 graphic EQ, UREI limiter, Biamp graphic EQ, IVP pre amp, dbx noise reduction.
Microphones: Sennheiser 409, 421, 441, AKG, Sony, E V, Shure.
Instruments Available: Piano, synthesizer, drums, and others on request.
Rates: \$20/hr and up. Block time available

•• **ALBRIGHT PRODUCTIONS**
also REMOTE RECORDING
607 West Ave., Ellensburg, WA 98926
(509) 962-2820
Owner: Sam Albright
Studio Manager: Steve Fisk

•• **THE AMAZING PINK THINGS STUDIO**
4429 Greenwood Ave. N., Seattle, WA 98103
(206) 789-1043
Owner: Dana Countryman
Studio Manager: Bill Johnson

•• **ANTENNA AUDIO**
865 Florida, San Francisco, CA 94110
(415) 824-2523
Owner: Antenna Theater
Studio Manager: Richard Povall

•• **ANTOMAR STUDIOS**
also REMOTE RECORDING
Oakland, CA
(415) 482-0839
Owner: Anthony Pasciocco
Studio Manager: Tony Pashuco

•• **APPLEWOOD RECORDING STUDIOS**
4542 49th S.W., Seattle, WA 98116
(206) 932-6348
Owner: Harlan Michael Weniger
Studio Manager: Harlan Michael Weniger

•• **ARCAL PRODUCTIONS**
2732 Bay Rd., Redwood City, CA 94063
(415) 369-7348
Owner: Arcal, Inc.
Studio Manager: Sai Viola

•• **AUDIOGRAPHIC PRODUCTION LAB**
also REMOTE RECORDING
Fremont, CA
(415) 657-8716
Owner: Dave Humrick, Robin Humrick
Extras: Experienced engineer (over 10 years) with name credits programming and free use of digital drums, keyboard /sequencer, and bass computer, production assistance, photography.
Direction: Formerly a private production studio, "The Lab" can produce master quality recordings at a fraction of what a large would charge. In addition, our sync system allows 16 & 24 track projects to be started here at a much lower rate and transferred later without compromising quality. "The Lab" is ideal for singers, songwriters, or anyone who needs a fast, inexpensive, and flexible way to create their music.

•• **AUDIO PRODUCTION STUDIO**
7404 Sand Lake Rd., Anchorage, AK 99502
(907) 243-4115
Owner: Creative Productions, Inc
Studio Manager: Bruce Graham, Ginni Daulin

•• **AUDIO RECORDING INC.**
also REMOTE RECORDING
4718 38th Ave. N.E., Seattle, WA 98105
(206) 623-2030, 525-7372
Owner: Kearney W. Barton
Studio Manager: Kearney W. Barton

•• **AUDIO RECORDING STUDIO**
also REMOTE RECORDING
E 9315 Trent, Spokane, WA 99206
(509) 487-9319, 928-9440
Owner: Gary Long
Studio Manager: Gary Long

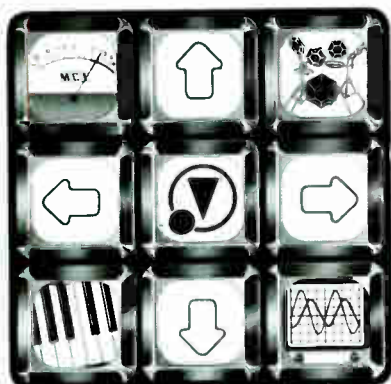
•• **AUDIO VISUAL ASSOCIATES**
also REMOTE RECORDING
1515 Old Bayshore Hwy., Burlingame, CA 94010
(415) 692-1271
Owner: Steve White
Studio Manager: Ron Vierra

AMPEX

Ampex 456 Grand Master[®] Studio Mastering Tape

More studios master their hit albums on Ampex Grand Master™ than on all other tapes combined. In Northern California, more and more studios depend on Leo's Professional Audio for their Ampex tape and recording supplies.

**LARGE
LOCAL STOCK
PANCAKE TO
2 INCH**



**leo's audio
and music
technologies**

*Anticipating the needs of musicians
and audio professionals since 1956.*

5447 TELEGRAPH AVE. • OAKLAND • CA • 94609 (415) 652-1553

●● **B-SIDE MUSIC**
4911 Camden Ave., San Jose, CA 95124
(408) 978-0790
Owner: Mark Whiteley
Studio Manager: Dale Deremer

●● **CAPITOL CITY STUDIOS**
also *REMOTE RECORDING*
911 E. 4th Ave., Olympia, WA 98506
(206) 352-9097
Owner: Allen P. Giles
Studio Manager: Allen P. Giles

●● **CASPER COLLEGE MUSIC DEPT.**
also *REMOTE RECORDING*
125 College Dr., Casper, WY 82601
(307) 268-2532
Owner: Casper College
Studio Manager: Terry Gunderson

●● **CAVE STUDIOS**
also *REMOTE RECORDING*
P.O. Box 3667, Santa Clara, CA 95055
(408) 244-2283
Owner: Cave Recording
Studio Manager: Brett Tyson

●● **CENTER FOR CONTEMPORARY MUSIC**
Mills College, Oakland, CA 94613
(415) 430-2191
Owner: Mills College
Studio Manager: Richard Povall

●● **CHERRY RECORDING**
also *REMOTE RECORDING*
5779 Basil St. N.E., Salem, OR 97301
(503) 399-9775
Owner: Ron Skog
Studio Manager: Ron Skog

●● **CLAWS-ON PRODUCTIONS**
also *REMOTE RECORDING*
Bear Mtn. Dr., Boulder, CO 80303
(303) 499-1144
Owner: Lisa & Dan Clawson
Studio Manager: Lisa Clawson

●● **COMMERCIAL ATTRACTIONS**
also *REMOTE RECORDING*
37914 Shenandoah Loop, Springfield, OR 97478
(503) 747-6268
Owner: Guy Ritter
Studio Manager: Guy Ritter

●● **THE CONCEPT ORGANIZATION, INC.**
85 Bluxome St., San Francisco, CA 94107
(415) 495-6521
Owner: Joseph M. Bilitzke, V.P., gen. manager
Studio Manager: Geoff Linder, tech. director

●● **COVENANT RECORDINGS INC.**
also *REMOTE RECORDING*
1345 S. Major St., Salt Lake City, UT
(801) 487-1096
Owner: Lew Kofford
Studio Manager: Chns Jensen

●● **COZY DOG RECORDING STUDIO**
603 S.E. Morrison Rd., Vancouver, WA 98664
(206) 694-1845
Owner: Tad Suckling
Studio Manager: Tad Suckling

●● **CREATION STUDIOS**
1449 Quincy Ave., Manteca, CA 95336
(209) 823-6864
Owner: Scott Dougherty
Studio Manager: Scott Dougherty, James Liptak

●● **CURRENT SOUND PRODUCTIONS**
also *REMOTE RECORDING*
1882 Park St., Livermore, CA 94550
(415) 447-7262
Owner: Scott Faulk, Jerry Christie
Studio Manager: Scott Faulk



●● **DANCING BEAR STUDIO**
also *REMOTE RECORDING*
11645 Woodbridge St., Studio City, CA 91604
(805) 482-5139
Owner: Bill Ohashi
Studio Manager: Bill Ohashi

●● **DANGEROUS RHYTHM STUDIOS**
3700 B. East 12th St., Oakland, CA 94601
(415) 261-9150
Owner: Kevin Kvarme, Bill Raymond
Studio Manager: Bill Raymond

●● **DASH STUDIOS**
also *REMOTE RECORDING*
207 Texas St., Bellingham, WA 98225
(206) 671-4029
Owner: Doug Ash
Studio Manager: Christy Wilkins

●● **DAVIN AUDIO PROD.**
also *REMOTE RECORDING*
1400 Marsten Rd., Unit D, Burlingame, CA 94010
(415) 344-2419
Owner: Kevin Casey, David Huebner
Studio Manager: Kevin Casey, David Huebner

●● **DEVA STUDIOS**
3525 Calafia Ave., Oakland, CA 94605
(415) 638-3341
Owner: Bruce Mishkit
Studio Manager: Bruce Mishkit, Raena Rodriguez

●● **DITURI RECORDING**
307A W. 11th St., Tracy, CA 95376
(209) 836-5288
Owner: Louie Dituri
Studio Manager: Louie Dituri

●● **DUSTY ROADS STUDIO**
Rd. 204 #5886, Carpenter, WY 82054
(307) 649-2288
Owner: Duane C. Morse
Studio Manager: Duane C. Morse

●● **ECHO STUDIO**
3611 S. 261 St., Kent, WA 98032
(206) 854-9717
Owner: Michael J. Glasgow
Studio Manager: Michael J. Glasgow

●● **EGO MANIAC STUDIO**
90 Woodhums Rd., Santa Clara, CA 95051
(408) 243-7431
Owner: Sahi Sasmita, Myron Dove.
Studio Manager: Myron Dove, Sani Sasmita.

●● **EM-AN-EE SOUND STUDIOS**
P.O. Box 70288, Eugene, OR 97401
(503) 485-8796
Owner: Gary Kaplan
Studio Manager: Edward McManus, Andy Widders-Ellis

●● **EMW STUDIO @ SYSTEMS**
76 Pasadena St., San Francisco, CA 94134
(415) 334-4061
Owner: Joseph Enright, Antonio Enright
Studio Manager: Chip Wagner, Dan Mandredi, Julie Mayrho

●● **FAIR WINDS PRODUCTIONS**
also *REMOTE RECORDING*
309 S. 3rd, Frisco, CO 80453
(303) 668-3227
Owner: Jeff Bahde
Studio Manager: Jackie Bahde

●● **FOCUSED PRODUCTIONS, INC.**
30 Berry St., San Francisco, CA 94107
(415) 777-3108
Owner: Jeff Roth
Studio Manager: Jeff Roth
Extras: 16mm interlock film projection and/or SMPTE time code synchronization of multi-track to video image for scoring, mixing, and audio post-production work in film and video.
Direction: Ideal for live video shoots and film score recording to image, this 8-track studio (Otan) has been praised by musicians for its sound, comfort, and "feel." Focused specializes in video "sweetening" and is equipped with a 3/4-inch VTR, BTX synchronizers and computer keyboard and automated mix console.

●● **FORTE**
12495 S.W. Summercrest Dr., Tigard, OR 97223
(503) 620-7849
Owner: Walter Bruhn
Studio Manager: Walter Bruhn

●● **FOX RECORDING**
also *REMOTE RECORDING*
P.O. Box 120, Felton, CA 95018
(408) 335-5562
Owner: Thomas F. Fox, Jr.
Studio Manager: Thomas F. Fox, Jr.

●● **FREEWAY EIGHT TRACK**
2248 E. 14th St., Oakland, CA 94606
(415) 532-3700
Owner: Corporate owned
Studio Manager: Francis Trouette

●● **GARY GADWOOD CUSTOM RECORDING**
only *REMOTE RECORDING*
11995 N.W. Kearney, Portland, OR 97229
(503) 644-0683
Owner: Gary Gadwood
Studio Manager: Gary Gadwood

●● **GENERATION ORGANIZATION**
also *REMOTE RECORDING*
4840 Brookwood St., Eugene, OR 97405
(503) 484-9087
Owner: Lew Thorne
Studio Manager: Lew Thorne

●● **GRASS ROOTS RECORDING**
also *REMOTE RECORDING*
2737 N.E. 25th, Portland, OR 97212
(503) 281-5108
Owner: Michael O'Rourke
Studio Manager: Michael O'Rourke

●● **HANDS-ON RECORDING STUDIO**
530 E. Alameda Ave., Denver, CO 80209
(303) 698-1669
Owner: Lorraine Baum, John Burris
Studio Manager: John Burris

●● **HAPPY TRACKS RECORDING**
P.O. Box 398, Belmont, CA 94002
(415) 595-4666
Owner: John Harbold
Studio Manager: Doug Dayson

●● **HARBINGER N.W. PRODUCTIONS**
also *REMOTE RECORDING*
4416 S.E. Hwy. 101, Lincoln City, OR 97367
(503) 996-2575
Owner: L.F. Caulkins
Studio Manager: L.F. Caulkins

●● **HARD CLOUDS PRODUCTIONS**
also *REMOTE RECORDING*
321 N. 9th St., San Jose, CA 95112
(408) 294-6439
Owner: Craig Druitt
Studio Manager: Craig Druitt

●● HEARTBREAK HOTEL STUDIO
3885 S. Logan St., Englewood, CO 80110
(303) 761-8060
Owner: Cary Steinberg
Studio Manager: Cary Steinberg

●● HEAVENLY GROTTTO RECORDING
11 Milton St., San Francisco, CA 94112
(415) 469-0192
Owner: Eric Jensen
Studio Manager: Eric Jensen

●● HEXTRAX PRODUCTIONS
P.O. Box 4067 (Mission & Warm Springs)
Fremont, CA 94539
(415) 490-7732
Owner: Hext Brothers Enterprises
Studio Manager: Craig Hext
Engineers: Ron Hext, Craig Hext
Dimensions of Studios: 23 x 25 x 16
Dimensions of Control Rooms: 18 x 10 x 8
Tape Recorders: Tascam 80-8, 8 track; TEAC A-2340-SX, 4 track; TEAC A-6100-MkII, 2 track; Akai 4000 DS, 2 track; Aiwa AD1250, cassette; TEAC A1705, cassette.
Mixing Consoles: Sound Workshop 128DB8EQ, 12 in x 8 out; TEAC Model 3, 8 x 8 x 4; Biamp 8802, 8 x 2 x 1.
Monitor Amplifiers: Spectro Acoustics 500 SR, Crown D75, Peavey Century.
Monitor Speakers: Klipsch La Scala, Yamaha S4115H.
Echo, Reverb & Delay Systems: Master Room XL-305, Roland DC-10.
Other Outboard Equipment: dbx 161 compressor, Spectro Acoustics 2102 EQ.
Microphones: AKG 330BT, AKG 125D, Shure SM57, TEAC M-80, Realistic P2M, Electro-Voice RE20
Rates: 8-track, \$25/hr; 4-track, \$16/hr, including engineer, block rates available.

●● HIATUS PRODUCTIONS
1311 Sutter, San Francisco, CA 94109
(415) 398-3124
Owner: Kate Hayes, Tom Yates
Studio Manager: Kate Hayes, Tom Yates

●● HOERNER AUDIO PRODUCTIONS
also REMOTE RECORDING
2200 196th St. S.E. Suite #85, Bothell, WA 98012
(206) 481-3477
Owner: Clinton J. Hoerner
Studio Manager: Clinton J. Hoerner

●● HORIZON AUDIO REC. CO., INC.
also REMOTE RECORDING
10297 Bethel Burley Rd. S.E., Port Orchard, WA 98366
(206) 895-0404
Owner: H.A.R.C. Inc.
Studio Manager: Jay Kluth

●● INFAL RECORDS CO.
also REMOTE RECORDING
2217 Champa St., Denver, CO 80205
(303) 295-1500
Owner: Victor M. Hernandez

●● INLAND AUDIO VISUAL CO.
also REMOTE RECORDING
N. 2325 Monroe, Spokane, WA 99205
(509) 328-0706
Owner: Larry Ellingson
Studio Manager: Justin Allemand

●● ISRAFEL PRODUCTIONS & RECORDING STUDIO
5772 Broadway, Sacramento, CA 95820
(916) 455-5278
Owner: John F. Lizarraga
Studio Manager: Pedro V Reynoso

●● JADE PRODUCTIONS
also REMOTE RECORDING
P.O. Box 4803, Modesto, CA 95352
(209) 578-3770
Owner: Gina A. Rose
Studio Manager: Alvin R. Rose

●● JAZONE AUDIO SERVICES
also REMOTE RECORDING
Palo Alto, CA
(415) 321-2788
Owner: David Clementson



**CASSETTE
TECHNOLOGIES**

Call Us When You've Finished Playing

IN ADDITION TO 10 YEARS
EXPERIENCE, WE OFFER



OTARI 1/2" Mastering and DP80 Bin Loop
Duplication



DOLBY™ A, B, and HX PRO™, dbx™ Type I and
II Noise Reduction



INFONICS 200A In Cassette Duplication for
Studio Quality Short Run Projects



BASF, Agfa, IPS, Shape, Bulk Tape,
Accessories, Close to Sea-Tac Int'l Airport

Complete Graphics Services and Specialized
Packaging Available



34310 9TH AVE. S., SUITE 107, FEDERAL WAY, WASHINGTON 98003
TELEPHONE (206) 874-2185 AND (206) 952-5055

Circle #102 on Reader Service Card

GATE EXPAND COMPRESS DUCK DE-ESS LIMIT

3 Sections + 6 Functions = Total Control



The LC-X Expander/Compressor/Limiter from Furman Sound has three independent sections that work simultaneously on your dynamics. This allows you to expand or gate at one threshold (and ratio); compress limit, or duck at a second threshold (again at a selected ratio); and protect against overload with a peak limit at a third threshold, all at the same time, easily, predictably, cleanly, and quietly.

There's also a complete complement of features including: side-chain in and out jacks, a De-ess button, switchable metering, and attack and release controls. All controls are calibrated in actual units of measurement.

And we didn't skimp when it came to quality, either. In fact, the LC-X has some of the best performance in the business: like low noise (104 dB s/n unweighted) and ultra low distortion (0.015% with 20 dB of gain reduction). The LC-X outperforms the competition, even units costing much more.

If you work with audio, you owe it to yourself to check out the LC-X. Write or call for your free copy of our new brochure and learn about all the possibilities of this amazing processor.

FURMAN
Signal Processing

Furman Sound, Inc. • 30 Rich St. • Greenbrae, CA 94904 • (415) 927-1225 • Telex 172029SPXSRLF

Circle #103 on Reader Service Card

●● **JAZZBEAUX STUDIO**
Larkspur, CA
(415) 927-0456
Owner/Manager: Murray Ornick

●● **JB RECORDINGS**
6532 5th Ave. N.W., Seattle, WA 98117
(206) 783-6579
Owner: JB
Studio Manager: Mr. James Bachman
Engineers: Jim Bachman
Dimensions of Studios: (A): 11 x 18 x 8; (B): 14 x 15 x 8;
Vocal booth: 11 x 6 x 7.
Dimensions of Control Rooms: 11 x 8 x 7
Tape Recorders: Otari MX5050 MkIII, 8-track; Tascam 32, 2 track; Nakamichi BX2, cassette.
Mixing Consoles: Studio Master patch bay, 16 x 4 x 2; ARP 1733, 8 in x 4 out
Monitor Amplifiers: Pioneer Spec 4.
Monitor Speakers: E-V Sentry 100A
Echo, Reverb & Delay Systems: Lexicon Model 200 reverb, PCM42 delay w/ext. memory, Fostex 3180 stereo spring reverb, Fostex 3050 delay.
Other Outboard Equipment: Dyna Mite 4301, Symetrix SE400 parametric EQ, MXR dual limiter, Phase Linear 1300 Series 2 noise reduction, Symetrix HA 10B headphone amp, Rane SM26 splitter/mixer, Otari CB 116 auto locator.
Microphones: (2) Neumann U89, (2) Beyer M69, AKG 330 BT, Shure SM57.
Instruments Available: Assorted things with strings.
Rates: \$15/hr.

●● **JUDE PRODUCTIONS**
P.O. Box 90, Dutch Flat, CA 95714
(916) 389-2326
Owner: Russell Brian Brooker
Studio Manager: Victoria Brooker

●● **KEYBOARD STUDIOS**
also REMOTE RECORDING
Pacifica, CA 94044
(415) 355-6617
Owner: Grant Ewald
Studio Manager: Grant Ewald

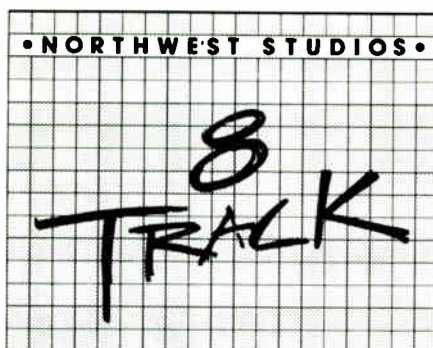
●● **KUOP RECORDING STUDIOS**
also REMOTE RECORDING
3601 Pacific Ave., Stockton, CA 95211
(209) 946-2582
Owner: KUOP-FM, University of the Pacific
Studio Manager: Joshua Sacco

●● **LCO MUSIC PRODUCTIONS**
P.O. Box 2366, Keolu-Kona, Hawaii, 96745
(808) 329-5358
Owner: Woody Demarco
Studio Manager: Woody Demarco

●● **LITTLE OAK SOUND**
2028 S.W. "G" St., Grants Pass, OR 97526
(503) 479-3205
Owner: Neil E. Moore
Studio Manager: Jeff Patterson



LITTLE PEOPLE STUDIO
Livermore, CA



●● **LITTLE PEOPLE STUDIO**
also REMOTE RECORDING
2111 Research Dr. #2, Livermore, CA 94550
(415) 449-9820
Owner: Michael Ferrucci, Douglas Mann
Studio Manager: Michael Ferrucci
Engineers: Douglas Mann
Dimensions of Studios: 25 x 18 x 11 1/2; drum area 9 x 10 x 11 1/2.

Dimensions of Control Rooms: 11 x 14.
Tape Recorders: Otari MX5050, 8 track; Tascam 40-4, 4 track; Revox PR 99, 2 track; TEAC A4300, 2 track; JVC KD-A7, cassette.
Mixing Consoles: Carvin MX1688, 16 in x 8 out; TEAC 2A/MB20, 6 in x 4 out.
Monitor Amplifiers: Hafler, GAS.
Monitor Speakers: JBL 4311, Auratone 5C.
Echo, Reverb & Delay Systems: Master-Room stereo reverb, DellaLab DDL, MXR DDL.
Other Outboard Equipment: Orban compressor/limiter, dbx and Dolby noise reduction, SAE stereo parametric EQ, JVC 10 band/ch stereo graphic EQ, MXR envelope filter, Dyna Comp, phase shifter, distortion boxes, Morley volume & wah-wah, Roland drum machine, direct boxes.
Microphones: AKG C460Bs, 330BTs, D-2000, D-1000, D-190; Sennheiser MD 421s; Shure SM57, 58, 81; E-V RE20s, PL11, PL91; Ampex 3001s; RCA Ribbons; Sony ECMs; Barcus Berry.
Instruments Available: Yamaha grand piano, Minimoog, Martin D41, 1946 Gibson L7, Rick 4001 bass, Gibson SG bass, Epiphone bass, Gibson Les Paul, Fender Telecaster, Music Man Sabre 2 guitar, Epiphone Casino, Music Man amp, 1954 & 1955 Fender Delux amps.
Rates: 8 track, \$30/hr; 4 track, \$25/hr. Rates include engineer and instruments. Block rates available.
Extras: Privacy, security in a relaxed environment. Tape dubbing and duplication; studio musicians, composers/arrangers referrals; production assistance; flexible appointments—24 hours.
Direction: For Michael Ferrucci and Doug Mann, owners of Little People Studio, the recording business is more than a business. It's a person-to-person connection with people who love to play music. "We find that our clients come back again and again because they tell us that we listen and care about the music we create. Since Doug and I are both musicians, I guess we consider Little People Studio to be more of an avocation than a vocation. We get involved with our clients to produce the best possible product. And that means producing what our clients want, not what we want."

●● **MAMMOTH RECORDING STUDIOS**
8580 Essex Dr., Denver, CO 80229
(303) 287-2382
Owner: Kenneth Hendricks
Studio Manager: Kenneth Hendricks

●● **MANTRASOUND STUDIO**
P.O. Box 3072, Lihue, Kauai, HI 96766
(808) 822-9466
Owner: Michael Sena
Studio Manager: Michael Sena
Dimensions of Studios: Control Room, 9 x 11; "A" room, 16 x 18; "B" room, 11 x 9.
Tape Recorders: TEAC 80-8, modified, transformerless, 8 track; TEAC 32, modified, transformerless, 2 track; Otari 5050B, 2 track; Revox B77, 2 track; Technics 1507, 2 track; TEAC 3340, 4 track.
Mixing Consoles: Allen and Heath Brenell 168, 16 x 8 x 2.
Monitor Amplifiers: SAE, TOA.
Monitor Speakers: JBL 4311, Auratone, JBL-L40.
Echo, Reverb & Delay Systems: Roland RE-130 delay, Effectron II, I, Tapco 440 reverb.
Other Outboard Equipment: Kepex, Gain Brain, UREI 1176 limiters, SAE parametric EQ, Systech flangers, Mutron phasers, dbx noise reduction on the 80-8.
Microphones: Neumann U87, U47; AKG 451; Sennheiser 451; Shure SM57, 7, 58, 76; Electro-Voice RE20; Sony ECM-22P; AKG D224 E, D140 E.

Instruments Available: Fender Rhodes 76, Moog Micro-moog, Roland Vocoder Plus, Oberheim OB 1, les Paul Custom, Rickenbacker 4001, Aria classical guitar, Gibson steel-string acoustic, Emmons lap steel guitar, cello, Rogers 7-piece drum set w/Zildjian and Paiste cymbals, Gon Bops congas, and various percussion implements, DX7, RX-11 drum machine, Stratocaster.
Rates: 8 track recording/mixing/playback, \$30/hr; 2, 4 track recording/mixing/playback, \$20/hr.

●● **McCOY STUDIOS**
125 S. Central Ave. Suite 209, Medford, OR 97501
(503) 773-2113
Owner: Mike McCoy
Studio Manager: Jeff Bates



McCUNE STUDIOS
San Francisco, CA

●● **McCUNE STUDIOS**
also REMOTE RECORDING
951 Howard St., San Francisco, CA 94103
(415) 777-2700
Owner: McCune Audio/Visual
Studio Manager: Jim Draper
Engineers: Steven Richardson, Jim Draper, Don Geis
Dimensions of Studios: 16 x 26.
Dimensions of Control Rooms: 15 x 19.
Tape Recorders: Otari MX 5050-8, 8 track; (2) MCI JH-110, 2 track; Otari MX 5050 BQII, 4 track; Ampex 440, 2 track; Ampex/Inovonics 350, 2 track; Ampex 350/351, mono. (Sixteen track [1"-2"] on request.)
Mixing Consoles: Amek TAC 1682, 16 x 8 x 2.
Monitor Amplifiers: Hafler DH 200, (biamped).
Monitor Speakers: McCune SM-4B (Altec 604s w/active X-over, including time-correction and EQ circuitry), Auratones.
Echo, Reverb & Delay Systems: AKG BX-20, Scamp S-24 Time Shape module, AMS reverb and delay on request.
Other Outboard Equipment: Scamp rack including compressor/limiter, parametric EQ, dynamic noise filters, and Time Shape module, UREI 1176 LN compressor/limiter, Orban de-esser, Technics SL 1200 MK2 turntables w/Burwin TNE 7000A transient noise eliminator, and other devices from McCune rental stock.
Microphones: Neumann U87, KM84; AKG 414, 451, 202; Sony C-37; RCA 77; Shure SM-56, 57, 58; and many others from McCune rental stock.
Instruments Available: On request.
Video Equipment & Services: Full production services; 3/4"-1" studio/location recording; 3/4" editing; full duplication services (1"-3/4", VHS, Beta); 16mm and slide-to-video transfers; SMPTE coding; audio control room equipped w/video playback/recorder and monitor.
Rates: Audio \$50/hr. All equipment in stock no extra charge. Video on request. Call for rate card.
Extras: Free parking and coffee.
Direction: McCune Studios are fully equipped to serve the needs of our media clients, from television and radio spots, to multi-image presentations, to films and videos.

●● **McPET MUSIC**
151 Hunt Way, Campbell, CA 95008
(408) 866-4875
Owner: David Petrucci
Studio Manager: David Petrucci

●● **MEI SOUND STUDIOS**
also REMOTE RECORDING
124A Vista Way, Kennewick, WA 99336
(509) 783-6062
Owner: Adrian Heap, Monte Ingersoll
Studio Manager: Monte Ingersoll

VERSATILE.

V-43

In a survival situation, there's no time to worry about how your sound system will perform. That's why the best American and European performers rely on Cerwin-Vega sound systems!

The Cerwin-Vega V-43 is a direct offspring of C-V's renowned family of full-scale touring concert systems. Featuring our brand new high-efficiency driver design, the V-43 has been engineered and built for a variety of applications.

A high sensitivity M-150 compression driver in a new throat design replaces "power hungry" cone midranges from 300Hz to 3kHz. This makes the V-43 ideal for smaller clubs, halls and theaters where you need more output per watt. High efficiency means no costly or complex bi-amping. Its versatility means musicians can use the V-43 for vocal and keyboard performance.

Compare the Cerwin-Vega V-43 to other "high performance" systems on the market. You'll appreciate the difference between using an ordinary P.A. and owning the most uncompromising music reproduction system in the world.

For more information, please write or call:

 **Cerwin-Vega!**

12250 Montague St.
Arleta, CA 91331
(818) 896-0777 Telex: 662250

Circle #104 on Reader Service Card



Cerwin-Vega!

●● **MENDOCINO R.O.P.**
 School & Pine Streets (P.O. Box 226)
 Mendocino, CA 95460
 (707) 937-1200
 Owner: Mendocino County Regional Occupation Programs
 Studio Manager: Bob Evans

●● **MENTAL FLOZ MUSIK**
 also **REMOTE RECORDING**
 1270 La Playa, Suite 305, San Francisco, CA 94122
 (415) 564-7753
 Owner: Michael Seltzer, Marcia Marta
 Studio Manager: Marcia Marta

●● **MIG SOUND**
 also **REMOTE RECORDING**
 1986 Cottle Ave., San Jose, CA 95125
 (408) 269-8375
 Owner: Chrs & Terri Migleo
 Studio Manager: Chris Migleo

●● **MIKE'S MUSIC**
 2285 N. Yellowstone, Idaho Falls, ID 83401
 (208) 524-4441
 Owner: Mike Doggett
 Studio Manager: Don Christensen

●● **MOUNTAIN STUDIO**
 17835 Hwy 9, Boulder Creek, CA 95006
 (408) 338-9555
 Owner: Thom Carlsen
 Studio Manager: Thom Carlsen

●● **MULTIVISION OF DENVER**
 also **REMOTE RECORDING**
 1121 S. Pearl, Denver, CO 80210
 (303) 698-0420
 Owner: Corporation
 Studio Manager: David A. Johansen

●● **MYERS AUDIO RECORDING**
 344 Lagomarsino Way, Sacramento, CA 95819
 (916) 454-4619



Owner: Fred & Ginger Myers
 Studio Manager: Fred Myers

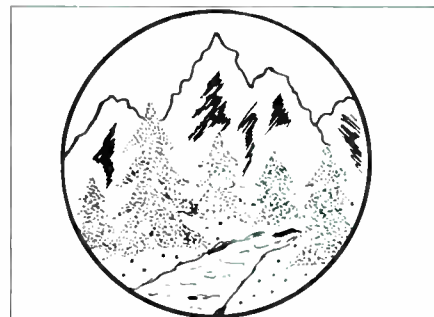
●● **NEW LIFE BROADCASTING**
 also **REMOTE RECORDING**
 P.O. Box 117, Quincy, CA 95971
 (916) 283-4144
 Owner: Ronald Trumbo
 Studio Manager: Ronald Trumbo

●● **NORTH BERKELEY RECORDING**
 P.O. Box 9572, Berkeley, CA 94709
 (415) 524-8596, 524-5003
 Owner: David Buchler
 Studio Manager: David Buchler

●● **NOVA RECORDING SERVICES**
 also **REMOTE RECORDING**
 14715 S.E. 37th, Bellevue, WA 98006
 (206) 747-5233
 Owner: The Nova Music Group
 Studio Manager: Kipp Kilpatrick
 Engineers: Paul Speer, David Lanz
 Dimensions of Studios: 12 x 20

Dimensions of Control Rooms: 15 x 25
 Tape Recorders: MCI JH 110C, 8 track, Otari 5050, 2 track,
 Sony cassettes
Mixing Consoles: Biamp Bmix, 20 in x 16 out
Monitor Amplifiers: Crown D150A
Monitor Speakers: JBL L26 Auratone 5C
Echo, Reverb & Delay Systems: ART 01A digital reverb
 Roland SDE 1000 digital delay
Other Outboard Equipment: Symetrix parametric EQ,
 Symetrix 511 noise reduction, Symetrix 522 compressors,
 Orban de-esser
Microphones: Neumann U87, AKG 414, E V RE20; Senn
 heiser 421, 441
Instruments Available: Synthesizers: Prophet 5, DX7, Syn
 ergy Also LinnDrum, full Simmons kit, and ESS Rock Box
Video Equipment & Services: RTX Shadow system, Sony
 Rola Hi-Fi VCR, audio/video interlock scoring and sweet
 ening
 Rates: Audio recording, \$40/hr, video sweetening, \$60/hr

●● **ON THE ROCK**
 also **REMOTE RECORDING**
 1727 Dotsero Ave., Loveland, CO 80537
 (303) 669-0739
 Owner: Donald Mattson, Jr
 Studio Manager: Donald Mattson, Jr



PARADISE SOUND
AUDIO DUPLICATION AND RECORDING

PARADISE SOUND INC
 Index, WA

●● **PARADISE SOUND INC.**
 also **REMOTE RECORDING**
 218 Index Ave., Index, WA 98256
 (206) 793-2614
 Owner: Patrick Sample
 Studio Manager: Karen Sample

●● **PEAK RECORDING & SOUND**
 also **REMOTE RECORDING**
 P.O. Box 1404, Bozeman, MT 59715
 (406) 586-1650
 Owner: Peak Recording & Sound, Inc
 Studio Manager: Gil Steber

●● **PEARL'S PLACE**
 4163 Doane St., Fremont, CA 94538
 (415) 651-7187
 Owner: Joey Horten, Vickie Horten
 Studio Manager: Mark Uribeq

●● **PEEKABOO MOUNTAIN STUDIOS**
 590 Bel Air Way, Morgan Hill, CA 95037
 (408) 778-2072
 Owner: Jeff & Gail Hester
 Studio Manager: Jeff Hester

●● **PING-PONG PRODUCTIONS**
 also **REMOTE RECORDING**
 P.O. Box 708, South San Francisco, CA 94083
 (call information for new phone number)
 Owner: RMS Resources
 Studio Manager: R. Duane Hoopes

●● **PLU AUDIO SERVICES**
 also **REMOTE RECORDING**
 121st and Park Ave., Tacoma, WA 98447
 (206) 535-7268
 Owner: Pacific Lutheran University
 Studio Manager: Bob Holden



Production Quantities:
 100's to Millions

For the Spoken Word and Stereo Music Industries

Additional Services: Studio Recording, Music and Sound Effects Libraries,
 Mixing, Editing, Collating, Packaging, Drop Shipping, Vinyl Albums,
 Custom Labels and Direct Printing.

Programming Technologies, Inc.
 6666 N. LINCOLN AVE. • LINCOLNWOOD, IL 60645
 In Illinois Call: (312) 676-9400

Circle #105 on Reader Service Card

•• **POSSUM STUDIO**
513 Palm Ave., Martinez, CA 94553
(415) 372-7490

Owner: Jim Thompson
Studio Manager: Jim Thompson

•• **PROGRESSIVE SOUND INC.**
P.O. Box 5594, South San Francisco, CA 94083
(415) 872-3780

Owner: John R. Goodwin
Studio Manager: John R. Goodwin

•• **RAL-RECORDING**
also REMOTE RECORDING
2851 Oleander, Merced, CA 95340
(209) 722-3220

Owner: Robert A. Laughton
Studio Manager: Robert Laughton, Terry Kelley

•• **RECORDING ETC**
also REMOTE RECORDING
633 Cowper St., Palo Alto, CA 94301
(415) 327-9344
Owner: Dennis Reed
Studio Manager: Ted Brooks

•• **REEL ART RECORDING**
534 Acoma St., Denver, CO 80204
(303) 534-7775
Owner: David E. Rice, Mike Rybowski
Studio Manager: David E. Rice

•• **REELS ON WHEELS**
also REMOTE RECORDING
959 Vetch Circle, Lafayette, CA 94026
(303) 666-9593
Owner: John B. Arnold
Studio Manager: John B. Arnold

•• **REMOTE AUDIO PRODUCTIONS**
also REMOTE RECORDING
615½ Angela, Rexburg, ID 83440
(208) 356-8705
Owner: Trent Walker
Studio Manager: Jim Sevy

•• **RENEGADE RECORDING**
also REMOTE RECORDING
2869 S.E. Franklin, Portland, OR 97202
(503) 239-4911
Owner: Stephen A. Rogers, Paul Anthony, Richard Watson
Studio Manager: Stephen Rogers

•• **ROCKY MOUNTAIN ARTISTS, INC.**
also REMOTE RECORDING
6851 Highway 73, Evergreen, CO 80439
(303) 674-8422
Owner: John J. Newkirk
Studio Manager: Richard L. Pritekel

•• **ROSEBURG MUSICAL INSTRUMENTS**
P.O. Box 1046 (1831 N.E. Stephans)
Roseburg, OR 97470
(503) 672-9479
Owner: J. Webb

•• **SALMON BAY PRODUCTIONS**
7025 23rd Ave. N.W., Seattle, WA 98117
(206) 782-9182
Owner: Glen Travis
Studio Manager: Diane Travis

•• **SCHECHTER STUDIOS**
P.O. Box 1153, Healdsburg, CA 95448
(707) 433-1720
Owner: Randy Schechter
Studio Manager: Randy Schechter, Tom Goebel

•• **SCHLAGEL STUDIO**
3731 S. Uinta St., Denver, CO 80237
(303) 771-0485
Owner: Bob Schlagel
Studio Manager: Bob Schlagel & Brian Boyd

•• **SEISMIC PRODUCTIONS**
only REMOTE RECORDING
San Francisco, CA
(415) 566-8207

Owner: Mike Joseph
Studio Manager: Mike Joseph

•• **SENSATIONAL SOUNDS**
P.O. Box 2039, Mill Valley, CA 94942
(415) 381-4224
Owner: Michael Angelo

•• **1750 ARCH STUDIOS**
also REMOTE RECORDING
1750 Arch St., Berkeley, CA 94709
(415) 841-0216
Owner: 1750 Arch Inc.
Studio Manager: Bob Schumaker

•• **S-G-L RECORD**
1959 Lemon Creek Rd., Juneau, AK 99801
(907) 780-4980
Owner: Sam S. Hughes
Studio Manager: Sam S. Hughes

•• **SIRIUS PRODUCTIONS**
also REMOTE RECORDING
2125 Knowles Rd., Medford, OR 97501
(503) 772-6031
Owner: Skip Bessonette
Studio Manager: Waldo Thompson, Marie Thompson

•• **SNEAK SOUND**
also REMOTE RECORDING
3019 Cowell Blvd., Davis, CA 95616
(916) 758-8183
Owner: Bob Snieckus
Studio Manager: Bob Snieckus

•• **SOUNDCAPSULE STUDIOS**
P.O. Box 12322, Nevada City, CA 95959
(916) 722-3055
Owner: Michael Loomis
Studio Manager: Michael Loomis

•• **SOUNDMARK, LTD.**
also REMOTE RECORDING
4950-C Nome St., Denver, CO 80239
(303) 371-3076
Owner: Corporate
Studio Manager: Robert F. Wolff

•• **SOUND CONTROL**
also REMOTE RECORDING
P.O. Box 393, Loveland, CO 80539
(303) 669-1525
Owner: Melodic Services Group
Studio Manager: Brian

•• **SOUND TRACKS RECORDING STUDIO**
also REMOTE RECORDING
1250 Huff Lane (Mail to: Box 2735)
Jackson, WY 83001
(307) 733-4880
Owner: Jeff McDonald
Studio Manager: Jeff McDonald

•• **SOUNDS UNLIMITED**
also REMOTE RECORDING
MongMong 437, Agana, Guam, U.S.A. 96910
(671) 477-7337
Owner: Henry B. Sherrard
Studio Manager: Ross S. Hindman

•• **SOUTH END PRODUCTIONS**
also REMOTE RECORDING
840 E. 3925 S., Greenbank, WA 98253
(206) 321-6697
Owner: Michael Bade, Lisa Bade
Studio Manager: Michael Bade

•• **STOLEN HORSES PRODUCTIONS**
also REMOTE RECORDING
P.O. Box 358, Eagle, ID 83616
(208) 939-6197
Owner: Jim Borott
Studio Manager: Rob Matson

•• **STUDIO P**
2329 San Pablo, Berkeley, CA 94702
(415) 644-1763
Owner: Joe Paulino
Studio Manager: Bob Ducett

Our 47th Year

Park on the roof



**RAINBO
RECORDS**

1738 Berkeley Street
Santa Monica, California 90404
(213) 829-0355 (213) 829-3476
TWX 910-343-6862

**The ONE STOP Center
For Custom Record
Pressing and
Cassette Duplication**

**APEX Direct
Printing on Cassettes**

**FREE
HOLIDAY GIFT**

Send in for the
Unique Acrylic
Rainbo Ruler



**In-House
Mastering • Processing
Labels • J-Cards**

**Record Jackets
Picture Sleeves
Collation • Fulfillment**

(213) 829-0355

rainbo records

**No Order Too Large
No Order Too Small
10-Day Turn Around**

Circle #146 on Reader Service Card

USED RECORDING EQUIPMENT FOR SALE

CONSOLES

Neve 30' 16/16 Custom 4 stereo pre/post sends per channel
Trident Series 80 P&G faders
API 3224 32/16/24 automated
TAC 16 in 8 out as new
Neve 8068 w/Necam
NEOTEK series 3 wired for 20, 16 in place, para EQ

TAPE RECORDERS

Otari 5050-8 MK3 25 hrs.
MCI JH114/16 4 yrs old
3M M79-16
3M M56-16
Ampex MM1200 w/extra 16 trk heads
MCI JH114 w/locate 3 transformerless

OUTBOARD GEAR

A wide variety changing every month, CALL

MICROPHONES

All Neumann and AKG tube type microphones are available as complete working systems • Schoeps, Sony, RCA, Electro-Voice, Sennheiser and other mikes are also available...CALL FOR CURRENT LIST

WANTED

Anything by Pultec, Lang, UREI, McIntosh, ITI, Sontec, tube Fairchild limiters, old mikes or parts, Marantz model 2 or 9, JBL 2231 speakers. We buy, sell, and trade.

Dan Alexander Audio
Box 9830

7/54
Berkeley, CA 94709
415/527-1411



Circle #147 on Reader Service Card

• NORTHWEST STUDIOS •



•• STUDIO SEA

418 Front St., Box 1078, Wheatland, CA 95692
(916) 633-4277
Owner: Curt Burrows, Lee Burrows
Studio Manager: Curt Burrows
Engineers: James Halner, Terry Smith
Dimensions of Studios: 30 x 20
Dimensions of Control Rooms: 13 x 15 (LEDE™)
Tape Recorders: Otari 5050 MkIII 8, 8 track, (2) Otari 5050 BII, 2 track. Cassette decks: Technics, Marantz, JVC, Sansui.
Mixing Consoles: Sound Workshop Series 30, 16 in x 16 out
Monitor Amplifiers: Phase Linear, Marantz, Carvin.
Monitor Speakers: Control room: JBL 4430, Auratones; Studio JBL 4311A, JBL 4311B; Koss headphones.
Echo, Reverb & Delay Systems: Orban reverb 111B, Delta-Lab Effectron II, ADM 1024, Ibanez HD 1000
Other Outboard Equipment: Orban compressor/limiter/de-esser 424A, (2) Biamp 1/3 octave EQs EQ270A, (3) Biamp octave EQs EQ210, EXR Projector Model SPIII, Roland guitar pre amp SPI-300, Orban stereo synthesizer 245E, Tascam headphone amp HM40, Countryman direct boxes.
Microphones: AKG, Sennheiser, Shure, E-V, Crown, others
Instruments Available: Gulbransen 5' grand piano, Sohmer upright piano, Yamaha electric grand piano, Rhodes 88, Korg Poly 800 synthesizer, Hammond C3 organ w/Leslie, assorted electric, acoustic & bass guitars.
Video Equipment & Services: Available on request
Rates: \$30/hr, block rates available

•• STUDIO Z RECORDING

2612 "J" St. #1, Sacramento, CA 95816
(916) 448-0370
Owner: Zack Boles
Studio Manager: Zack Boles
Engineers: Zack Boles, Jay Lemmons
Dimensions of Studios: 8 x 12
Dimensions of Control Rooms: 14 x 12
Tape Recorders: MCI 110-C, 8 track; Scully 280, 2 track; Otari 5050B, 2 track; Ampex 440-B, 2 track; Nagra 4.2 mono.
Mixing Consoles: Sound Workshop Series 30, 16 in x 8 out.
Monitor Amplifiers: Crown.
Monitor Speakers: JBL 4311, Auratones.
Echo, Reverb & Delay Systems: MICMIX Master Room B; Super C.
Other Outboard Equipment: Valley People Dyna mite; MXR graphic EQs; Harmonizer 949, Aphex Aural Exciter, Aphex Compellor, DeltaLab Super Time Line, Dynaflex DX-2, Yamaha DX7 synth.
Microphones: Neumann U87s; Shure SM5Bs; AKG 414s; RCA 44, 77.
Rates: Audio \$50/hr.

•• SUBLIMINAL STUDIOS

P.O. Box 3450, Eugene, OR 97403
(503) 485-4188
Owner: Trey Gunn
Studio Manager: Trey Gunn

•• SUGARBEAR STUDIO

2405 Holland Loop Rd., Cave Junction, OR 97523
(503) 592-4167
Owner: Del Gates
Studio Manager: Del Gates

•• SUMMIT STUDIOS

also REMOTE RECORDING
P.O. Box 554, Los Gatos, CA 95031
(408) 353-3952
Owner: Joe Weed
Studio Manager: Joe Weed

•• SUNSHINE RECORDING & VIDEO

327 Del Sur, Vallejo, CA 94591
(707) 552-5210
Owner: Lyman White
Studio Manager: Lyman White

•• SYNTONOS

1571 San Lorenzo Ave., Berkeley, CA 94707
(415) 527-5367
Owner: Jeffrey Finder
Studio Manager: Jeffrey Finder
Engineers: Jeffrey Finder
Dimensions of Control Rooms: 10 x 14 x 12.
Tape Recorders: Otari MkIII 5050-B, (1/2") 8 track w/ remote; Technics SV 100 PCM, 2 track (video), Technics RS10A02, 2 track, JVC KD 99, cassette. Aiwa WX220 cassette
Mixing Consoles: DynamiX D 3000, 24 x 8 x 2
Monitor Amplifiers: McIntosh 2100.
Monitor Speakers: JBL 4312, Auratone 5C
Echo, Reverb & Delay Systems: ART 01A, Orban 111B, Lexicon Prime Time
Other Outboard Equipment: (2) Yamaha GQ 1031 1/3 octave EQ, (3) MSC semi-parametric EQ, MXR dual octave EQ, Orban stereo compressor/de-esser, dbx 161 compressor/limiter, Roland SVC 350 vocoder, SMPL system, SMPL lock, computer sequencing
Microphones: Neumann U47, KM85, (2) AKG C-61, (2) D-24, D-19, D-15; Sennheiser 413; Shure SM76, Unisphere B
Instruments Available: Ensoniq Mirage, Prophet 10 w/ MIDI, Casio CZ101, Yamaha CX5 Pro 1 EMU Drumulator, Roland GR 700, Fender & ESP strats, Fender P bass, custom fretless bass, Martin D-12/35, Martin 0-18, trumpet, alto sax, Primalent classical guitar, guitar effects
Video Equipment & Services: (2) 1/2" video recorders (portable VHS) & color cameras & video/PCM stereo for audio
Rates: \$20/hr. Block rates available

•• TANGLEWOOD PRODUCTIONS

1510 Peavine Rd., Reno, NV 89503
(702) 747-4444
Owner: Michael Eardley
Studio Manager: Michael Eardley

•• BILL TARVIN PRODUCTIONS

3320 Cherry Ave., San Jose, CA 95118
(408) 723-0182
Owner: Bill Tarvin
Studio Manager: Bill Tarvin

•• TDS PRODUCTIONS

P.O. Box 31983, Seattle, WA 98103
(206) 284-2399
Owner: Tom Dyer
Studio Manager: Tom Dyer

•• TEKNIFILM, INC./TEKNIFILM VIDEO

909 N.W. 19th Ave., Portland, OR 97209
(503) 224-3835
Owner: Frank Hood, Arlan Evensen
Studio Manager: Wayne Woods

•• THIRD WAVE PRODUCTIONS

4171 Shafter Ave., Oakland, CA 94609
(415) 420-0765
Owner: Frank Harris
Studio Manager: Frank Harris

•• THOMAS RECORDINGS

740 Jill Ave., Santa Clara, CA 95050
(408) 985-6967
Owner: L. Thomas
Studio Manager: L. Thomas

•• 3-B PRODUCTIONS

also REMOTE RECORDING
575 N. 7th St., San Jose, CA 95112
(408) 289-1383
Owner: Kevin Boone
Studio Manager: Alan Woodle

•• TRANSIENT SOUNDS

only REMOTE RECORDING
P.O. Box 93, Big Bend, CA 96011
(916) 337-6798
Owner: David B. Green
Studio Manager: David B. Green

•• TRANSMEDIA, INC.

also REMOTE RECORDING
350 Pacific Ave., San Francisco, CA 94111
(415) 956-3118
Owner: David B. Adams
Studio Manager: Susan G. McCollom

**CLEAN
PATCH
BAYS**

**NO DOWN
TIME**



VERTIGO BURNISHER AND VERTIGO INJECTOR RESTORE ORIGINAL PERFORMANCE TO YOUR PATCH BAYS

VERTIGO 1/4" TRS AND TT BURNISHERS:
Each eliminates noise in main contacts under normal patching situations

VERTIGO 1/4" TRS AND TT INJECTORS:
Each injects cleaning solvent to eliminate intermittents in breaking contacts (normals) when patch cord has been removed

ONLY \$29.95 EA. Please write for additional information and order form today

VERTIGO RECORDING SERVICES

12115 Magnolia Blvd. #116
North Hollywood, CA 91607

Circle #106 on Reader Service Card

●● UNDERGROUND SOUND
also REMOTE RECORDING
4577 E. 129th Ave., Thornton, CO 80241
(303) 450-0168
Owner: Scott A. Flores
Studio Manager: Lynn Berry

●● WERWOLF SOUNDS
also REMOTE RECORDING
2241 9th Ave., Oakland, CA 94601
(415) 834-5856, 922-2632
Owner: Ray Obiedo, Skip Moy
Studio Manager: Skip Moy

●● WRONG ELEMENT STUDIOS
also REMOTE RECORDING
1070-E Revere Ave., San Francisco, CA 94124
(415) 822-4511
Owner: Diana Roe, Paul Reynolds, Rob Burns
Studio Manager: Paul Reynolds

●● WESTERN OREGON SOUND & RECORDING
3430 48th N.E., Salem, OR 97305
(503) 370-7906
Owner: Duane Sheets
Studio Manager: Duane Sheets & Jeff Dennerline

●● WESTMONT RECORDING STUDIO
6034 Shawn Rd. S.W., Olympia, WA 98502
(206) 943-6328
Owner: Richard Quick
Studio Manager: Richard Quick

●● WILD WEST GRAPHICS & COMMUNICATIONS
Lake Tahoe, Box 346, Homewood, CA 95718
(916) 525-5201
Owner: Ed Miller
Studio Manager: Ed Miller

●● BOB WILSON RECORDING SERVICES
only REMOTE RECORDING
4057 Partridge Dr., San Jose, CA 95121
(415) 966-2911
Owner: Bob Wilson

●● WRENOVATION SOUND
2365 Dartmouth, Boulder, CO 80303
(303) 499-3000
Owner: Warren Rider
Studio Manager: Warren Rider



XANDOR RECORDING STUDIOS
Orinda, CA

●● XANDOR RECORDING STUDIOS
also REMOTE RECORDING
407 Camino Sobrante, Orinda, CA 94563
(415) 254-9077
Owner: Jim Weyeneth
Studio Manager: Jim Weyeneth

●● X L COMMUNICATIONS
also REMOTE RECORDING
P.O. Box 219, Hot Sulphur Springs, CO 80451
(303) 887-2353
Owner: S.G. Brown
Studio Manager: R. Lea Brown

●● VINEYARD STUDIO
P.O. Box 69522, Seattle, WA 98188
(206) 630-3466
Owner: Roger B. Cox, Dale Stetson
Studio Manager: Dale Stetson

●● WAVEFORM RECORDING STUDIO
also REMOTE RECORDING
208 W. 38th, Boise, ID 83714
(208) 345-4447
Owner: Homer Wise
Studio Manager: Homer Wise
Engineers: Homer Wise, David Brunn
Dimensions of Studios: 1000 sq. ft. (20 x 50)
Dimensions of Control Rooms: 11 x 11
Tape Recorders: Tascam w/dbx 80-8, 8 track; Revox, 1/2 track; Tascam w/dbx 22-4, 4 track; Nakamichi 480, cassette; Onkyo TA-2026, cassette.
Mixing Consoles: Tascam M5, 8 x 4 x 2; Yamaha, 16 in x 4 out; Tascam MM-20.
Monitor Amplifiers: Yamaha, Crown.
Monitor Speakers: Polk Audio P15, Auratone.
Echo, Reverb & Delay Systems: Orban & Master-Room reverbs, Roland, Lexicon, and MXR delays.
Other Outboard Equipment: MXR pitch transposers, dbx compressor/limiters.
Microphones: PL9s, PL5s, PL11s, SM57s, Beyer 101, SM58s, Pro-5s.
Instruments Available: Mirage; Yamaha CS-80, CS-60, KX88 w/(2) TX7s; Korg Poly 6; Drumulator; sequencers; bass guitars; Vocoder; 30" gong.
Rates: \$25/hr.



And more affordable! Less than \$300!
Like the famous Type B, the new Type C restores natural brightness, presence and detail to live and recorded sound... and does it more quietly and musically! Lyrics will have more intelligibility... guitars more bite... drums more kick. The overall mix will be cleaner, more natural and exciting.

The Type C is the best way to improve any sound system. It adds that *extra edge* that is impossible to add with any other

processor. Live sounds fill the room without all the problems of high frequency EQ. Multitrack tapes made on narrow format machines will sound like they were made on expensive studio recorders. Even cassette dupes will have an unmuffled, professional sound.

Hear the difference *only* a genuine Aural Exciter can make at your dealer today. Or write us for more information and the name of your nearest dealer.



Apex Systems Limited
13340 Saticoy St., North Hollywood, CA 91605
(818) 765-2212 TWX: 910-321-5762

Detachable rack ears included.
Aural Exciter is a registered trademark of Apex Systems Ltd. © 1985 Apex Systems Ltd.

Circle #107 on Reader Service Card

SOUND GENESIS & SCOTCH TAPE BEST SELECTION, BEST PRICE



Find out what so many world class studios know;
Sound Genesis and Scotch Professional Recording Tape
make for an unbeatable combination.

sound genesis[®]

BEFORE YOU MAKE A SOUND, LISTEN TO US.

2001 BRYANT STREET I, SAN FRANCISCO, CA 94110
415 285 8900 • 213 622-0212 • TWX 910 372-7393

Circle #108 on Reader Service Card

24 in x 24 out (48 line returns in mixdown).
Monitor Amplifiers: Haller, McIntosh, Nakamichi, Acoustat.
Monitor Speakers: Ed Long TA-3 time-align, JBL 4311, Yamaha NS10M, Auratones.
Echo, Reverb & Delay Systems: Lexicon 200 (updated) & PCM 60, MICMIX, DeltaLab Effectron III, 512 Super Time Line, DL-2, Eventide Harmonizer H910 & instant phaser.
Other Outboard Equipment: UREIs LA-4s, 1176; dbx 160; Valley People Dyna-Mites; Scamp Rack F300, S04, S23, S100, S01, S03; Drawmer gates DS201, SAE 1800 EQ; UREI 535 & 539 graphic EQs; Klark-Teknik DN332 graphic EQ; EXA exciter & Aphex Aural Exciter; Peterson strobe tuner; Symetrix 522.
Microphones: AKG, Beyer, Crown PZM, Neumann, Sennheiser, Shure, Electro-Voice, Countryman direct boxes, Tube-cube & Uni-Sync.
Instruments Available: Yamaha C-5 conservatory 6'6" grand piano, Fender Precision Bass, Les Paul 1958-EMG pick-ups, Yamaha Recording Series drums, Sonor Signature drums, Zildjian & Paiste cymbals, Martin 00018 acoustic guitar, various percussion instruments; Mesa Boogie, Roland Jazz Chorus & Fender bass amps, Oberheim DX drum machine, E-drum, SDS 1 Simmons, electronic keyboards available but extra charge.
Rates: Competitive rates. Block booking available. Please call for assistance.



ROBERT BERKE SOUND
 San Francisco, CA

●●● **ROBERT BERKE SOUND**
 50 Mendell St. Suite #11, San Francisco, CA 94124
 (415) 285-8800
Owner: Robert Berke
Studio Manager: Mark Escott
Engineers: Mark Escott, Chris Miloslavich, Steve Bravin, Robert Berke
Dimensions of Studios: (A): 15 x 18, (B): 7 x 12.
Dimensions of Control Rooms: (A): 14 x 19, (B): 15 x 21, (C): 11 x 13, (D): 10 x 13.
Tape Recorders: (2) Otari MTR90-II, 16 track; Otari MTR 10, 4 track; (5) Otari MTR 10, 2 track; Otari MX 5050 MkII, 8 track; (3) Otari MX 5050 MkII, 4 track; (7) Nakamichi/Akai cassette decks.
Mixing Consoles: (A): Audiotronics 110, 16 in x 8 out; (B): Audiotronics 700, 16 in x 16 out; (C): Soundcraft 500, 12 in x 8 out; (D): Soundcraft 200, 8 in x 4 out.
Monitor Amplifiers: (2) Bryston 4B, (8) BGV.
Monitor Speakers: (A & B): JBL 4430; (C): JBL 4425.
Echo, Reverb & Delay Systems: Lexicon 200 & Lexicon PCM60 digital reverbs; Eventide H949 Harmonizer; Master-Room reverb.
Other Outboard Equipment: dbx noise reduction; Dynafex noise reduction; Orban compressors, EQs, filters, & de-essers; UREI filter set; Symetrix telephone interface systems; ADR vocal stressers.
Microphones: Neumann, Electro-Voice, Shure.
Video Equipment & Services: Sony BVH 1100 1" VTR w/TBC & Dolby electronics; (2) Sony BVU 800 VCR; Sony 5800 VCR; Panasonic professional 1/2" VCR; MTR-10s w/center channel time code; Cypher digital Softouch synchronizers; Otari EC-101 synchronizer; (2) Cypher digital time code generators & readers w/windows; Sony control room & studio video monitors; fully equipped audio for video layback & transfer room.
Rates: Please call for rates.
Extras: Thousands of music & sound effects cues from the leading production libraries; client lounge, conference room & kitchen.
Direction: Robert Berke Sound is an audio production facility specializing in audio for video, commercial, and A/V sound production. The complex now features full 1" VTR transfer & layback capability; two acoustically identical control rooms & studios designed by Randy Sparks of RLS Acoustics; and the most up-to-date music & sound effects library available. The studio has completed post-production sound for hundreds of network, local & commercial video programs during the previous year.



●●● **BRAND STUDIOS**
 10 Industrial Way, Brisbane, CA 94005
 (415) 468-3500
Owner: John Brand
Studio Manager: Jeff Kreegar

●●● **BROWN BAG PRODUCTIONS**
 4134 S. Eudora, Englewood, CO 80110
 (303) 756-9949
Owner: Michael Lee, Robert Lee
Studio Manager: Robert Lee

●●● **CALYPSO RECORDS**
 41-M Hamilton Dr., Novato, CA 94947
 (415) 883-4768
Owner: Michael J. Verchiani
Studio Manager: Tina Verchiani
Engineers: Michael J. Verchiani
Dimensions of Studios: 20 x 40.
Dimensions of Control Rooms: 12 x 15.
Tape Recorders: 3M M-56, 16 track; Ampex AG-440, 2 track; Aiwa F-660, cassette; Akai GXC-760D, cassette.
Mixing Consoles: Tangent 3216, 24 in x 24 out.
Monitor Amplifiers: Biamp TC 225 & TC 60.
Monitor Speakers: UREI 811s, Auratones.
Echo, Reverb & Delay Systems: Lexicon 200 digital reverb, PCM60 digital reverb; 910 Harmonizer; DeltaLab DL-4; Korg SE-500.
Other Outboard Equipment: UREI 1176 comp/limiters; noise gates; Vocal Stresser.
Microphones: U87, 414, 451, 452s, SM57s, 421s.
Instruments Available: Studio drums, Prophet 5, DX drum machine, Juno 60 synthesizer.
Rates: \$25/hr. Block time available.

●●● **CAPP ST. STUDIOS**
 172 Capp St., San Francisco, CA 94110
 (415) 861-3426
Owner: Carole Lennon
Studio Manager: Gary Floyd

●●● **CASCADE RECORDING**
 2115 N. Vancouver Ave., Portland, OR 97227
 (503) 287-1662
Owner: Hal Lee
Studio Manager: Hal Lee
Engineers: Mike Moore, Fritz Richmond
Dimensions of Studios: 32 x 20 w/9 x 10 iso. room.
Dimensions of Control Rooms: 16 x 12.
Tape Recorders: MCI/Sony JH-24/16/8, 2" 16/8 track; Otari MTR-10, 1/2" 4/2 track; Ampex ATR-102, 1/4" 2 track; dbx digital 700, 2 track.
Mixing Consoles: MCI/Sony 636, 20 in x 16 out.
Monitor Amplifiers: Haller 220, Yamaha 2100.
Monitor Speakers: Tannoy 12B, Altec 604s w/UREI Time Align, Yamaha NS-10s, Auratones.
Echo, Reverb & Delay Systems: Klark-Teknik DN780 & Lexicon 200 digital reverb, Lexicon digital delay, PCM 41, Lexicon Super Prime Time.
Other Outboard Equipment: UREI 1176 LN limiters, Ashly SC-33 noise gates, EXR Model IV exciter.
Tape Recorders: Calrec Sound Field, Neumann, AKG, Sennheiser, B & K, Shure, Beyer.
Instruments Available: Yamaha 7' grand piano, Gretsch trap set, Gon Bop congas & timbales, Yamaha DX7
Rates: Please call.

●●● **CELLAR DOOR STUDIOS**
 also REMOTE RECORDING
 795 W. Amity, Meridian, ID 83642
 (208) 888-9242
Owner: Mark Evans

●●● **RICK CHAISSE PROD.**
 also REMOTE RECORDING
 19 Locke Way, Scotts Valley, CA 95066
 (408) 438-2331
Owner: Rick Chaisse
Studio Manager: Rick Chaisse

●●● **C-M-I**
 also REMOTE RECORDING
 10125 227th Ave. Ct. E., Buckley, WA 98321
 (206) 862-1877
Owner: Tom Thrasher
Studio Manager: Tom Thrasher

●●● **COUPE STUDIOS**
 also REMOTE RECORDING
 2539 Pearl St., Boulder, CO 80302
 (303) 447-0551
Owner: Scott Roche
Studio Manager: Patrick Cullie

●●● **CREATIVE SOUND STUDIO**
 602 Cree Dr., San Jose, CA 95123
 (408) 224-1777
Owner: Richard Dias
Studio Manager: Ramon Dias

●●● **CROW RECORDING STUDIO**
 4000 Wallingford N., Seattle, WA 98103
 (206) 634-3088
Owner: John Nelson
Studio Manager: John Nelson
Engineers: John Nelson, Greg Unterseher
Dimensions of Studios: 30 x 40, add'l 250 sq. ft. in (2) iso. booths.
Dimensions of Control Rooms: 17 x 19.
Tape Recorders: Scully 288-16B, 16 track; Ampex 351-2, 2 track; Revox, 2 track; Sony, Akai cassettes.
Mixing Consoles: Tangent 3216-A transformerless, 24 in x 24 out.
Monitor Amplifiers: Haller, Crown.
Monitor Speakers: UREI 828 Time Align, Yamaha NS-10M, Auratones, Acoustical Research, AKG, Sennheiser.
Echo, Reverb & Delay Systems: Lexicon Prime Time DDL, Lexicon PCM 41 DDL, Lexicon 200 digital reverb, Stocktronics plate reverb.
Other Outboard Equipment: (2) UREI 1176LN limiting amplifiers, (2) UREI 175B tube compressors, (2) Pullec EQP-1A3, Tube EQ, Lang EQ, Roger Mayer gates, (2) Allison Gain Brains, Orban/Parasound parametric EQ 622B, Tektronix RM 561A oscilloscope.
Microphones: Neumann U87, KM84s; Telefunken U47s; AKG 414EB, 452EBs, D12E; Sennheiser 421, 441, E-V 635A, RE11; RCA 77DX; Beyer 500; Shure 57s, 58s, 545; Sony C37a, C22P, 270P; Jensen DIs.
Instruments Available: Pearl drum kit, various percussion, amps, keyboards.
Video Equipment & Services: In-house video marketing, custom shoots, in-house ad production company, Sony cameras, VCR, etc.
Rates: Call for rates. Block discounts available.

●●● **JAMES DANIELS PRODUCTIONS**
 P.O. Box 618, Palo Alto, CA 94301
 (415) 325-8574
Owner: James Daniels
Studio Manager: Bruce Kaphan

●●● **DAVIS SOUND STUDIO**
 also REMOTE RECORDING
 1205 Oak Ave., Davis, CA 95616
 (916) 758-6661
Owner: Andy Lang
Studio Manager: Andy Lang
Engineers: Andy Lang
Dimensions of Studios: (Main studio): 13L x 12W x 7-12H; (iso booth #1): 5L x 4W x 8-9H; (iso booth #2): 7L x 6W x 8H.
Dimensions of Control Rooms: 18L x 10W x 7-12H.
Tape Recorders: Otari MX-70, 16 track; Otari MX-5050BII, 2 track; Tascam Portastudio 244, 4 track (cassette format); Bang & Olufsen Beocord 9000 cassette; Nakamichi BX-300 cassette; Denon DR-M3 cassette.
Mixing Consoles: Studiometer 16 x 8 x 2; Peavey 1201, 12 x 4 (2 main, 2 mon).
Monitor Amplifiers: Tandberg TIA-3012, Hitachi HA-610, Rane HC-6 (headphone), Tascam 40-4 (headphone).
Monitor Speakers: Spica TC-50 w/2 Spica servo subwoofers, ADS L400, Canton GL-300F, ADS 3001, JBL 4627.
Echo, Reverb & Delay Systems: Lexicon PCM60 digital reverb, DeltaLab ADM 1024 Effectron II digital delay, Ibanez DM1000 digital delay.
Other Outboard Equipment: dbx 166 2 channel gate/compressor/limiter, Valley People Maxi Q 3 band parametric EQ, Valley People Gain Brain II compressor, limiter/ducker, (2) Valley People Kexep II noise gates, Orban 424A 2 channel compressor/limiter/de-esser, Aphex Type-B 2



DAVIS SOUND STUDIO
Davis, CA

channel Aural Exciter, Orban 674A 2-channel parametric EQ. Microphones: (3) Neumann KM84; (1) B91; (2) Audio-Technica AT813R, ATM63; AKG C414; Sennheiser MD421; Shure SM57, SM77; Beyer M201, M500; (2) Crown PZM-30GP. Instruments Available: Ibanez Roadstar II electric guitar, Yamaha G240 nylon six-string guitar, MemoryMoog Plus synthesizer, Sequential Circuits Drumtraks drum machine, Wing & Son upright piano. Rates: \$25/hr. Discounts for block time (over 10 hrs) and lock-out bookings. Remote recording, \$25/hr. Please call. Extras: LEDE studio design w/both "live" and "dead" iso booths. Production services and session musicians available. Real-time cassette duplication. Lounge area includes TV and refrigerator; always stocked w/water, soft drinks, coffee and tea. Easy access to Davis Sound Studio via nearby freeways and airport. Direction: Davis Sound Studio strives not only to make the best possible recordings technically, but also to provide a comfortable, relaxed, and creative atmosphere for our clients. We treat every project with care and concern for what our clients want, and turn their desires into a professional quality, finished product. Please give us a call or just stop by.

●●● **DOG FISH SOUND**
also **REMOTE RECORDING**
Rt. 1 Box 83A, Newberg, OR 97132
(503) 538-5638
Owner: Drew Canulette, Norm Costa
Studio Manager: Drew Canulette
Dimensions of Studios: (Main room) 19 x 21 x 11, (vocal) 7 x 8 x 11.5; (drum room): 7 x 11 x 13.
Dimensions of Control Rooms: 14' x 8' x 6'8" (truck).
Tape Recorders: Otari MX70, 8/16 track; Otari MX7800, 8 track; Technics 1500, 2 track; dbx 700 digital audio processor 700, 2 track; Sony/Akai cassettes.
Mixing Consoles: Sound Workshop Series 34, 24 x 24.
Monitor Amplifiers: 6250, Crown DC300A, Crown 150A.
Monitor Speakers: JBL 4330, Rogers LS35A.
Echo, Reverb & Delay Systems: Lexicon 224XL, DeltaLab Acoushcomputer.
Microphones: AKG C414-EB, 451, 452; Neumann U89; Sony C37A (tube); ECM 33P, 63; Sennheiser 441, 421; E-V RE20, SM57; Crown PZM 30GP.
Instruments Available: Instruments w/rooms available upon request.
Video Equipment & Services: JVC 1/2" (VHS) editing BR8600.
Rates: Upon request.

●●● **DRAGON STUDIOS**
100 Fifth Ave., Redwood City, CA 94063
(415) 366-5575
Owner: Charles Albert
Studio Manager: Sally Albert
Engineers: Charles Albert, Bruce Kaphan, Bruce Bowers
Dimensions of Studios: 500 sq. ft., 2 isos within, 2 add'l.
Dimensions of Control Rooms: 22d x 17w x 10H non-parallel, symmetrical; machine softits, (3) closets beyond this area.
Tape Recorders: Ampex MM1100 w/VSO, search, 16 track remote; Otari MX5050, 8 track; Ampex AG440C Servo, 2 track; Otari MX5050, 2 track; Pioneer RTU-11, 4 track; (5) Sony, Technics, TEAC cassettes.
Mixing Consoles: Sound Workshop series 30, 26 x 16.
Monitor Amplifiers: Hafler P500, BGW, Symetrix.
Monitor Speakers: UREI 813A, JBL 4311, Auratone, Realistic, Klipsch.
Echo, Reverb & Delay Systems: Yamaha Rev 7 digital reverb, MXR/ART 01 A digital reverb; Lexicon PCM41 DDL, DeltaLab DL-4 DDL; Effectron II DDL; ADA STD-1 stereo tapped delay.



DRAGON STUDIOS
2" 16-Track Recording

DRAGON STUDIOS
Redwood City, CA

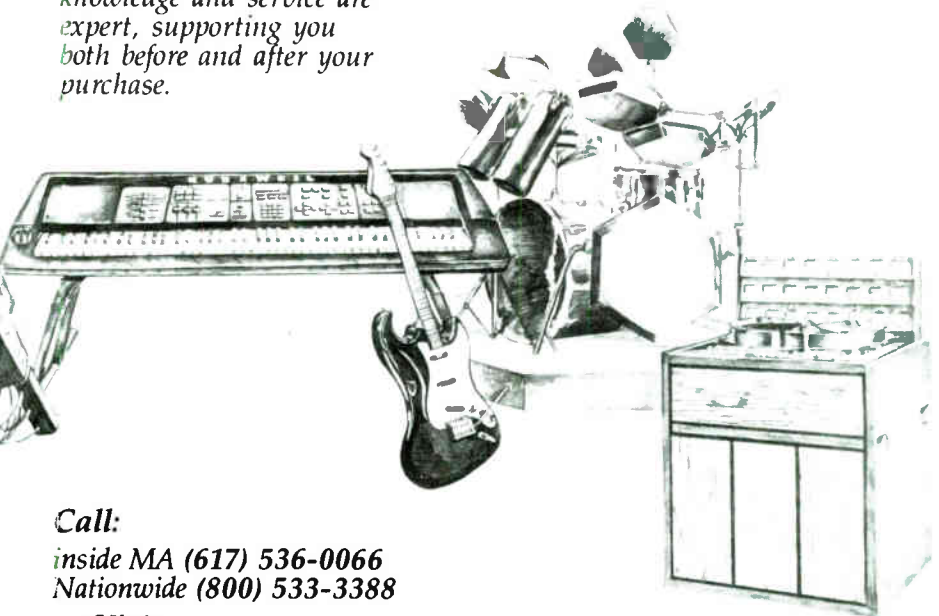
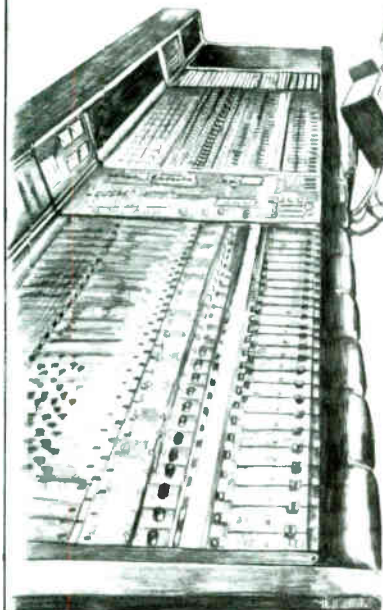
Other Outboard Equipment: (3) UREI 1176LN, Symetrix CL-100 comp/limiter, Symetrix SG 200 gates, dbx 155 N/R; PE-40 parametric EQ, 2200 graphic EQ, Roland Vocoder. Technics turntable, Tascam Model 5, (2) Model 1 (2) PB 64 (2) Countryman direct, passive direct.
Microphones: Neumann U89, (3) KM84, AKG 414, D190E, (3) Sennheiser 421; E-V RE20, Crown PZM, (2) Sony ECM 33F; (2) Beyer M500, (2) Soundstar, (5) Shure SM57 (2) SM58, Countryman EM-202PPM.
Instruments Available: Baldwin grand piano, Yamaha DX7, Prophet-10, Rhodes; LinnDrum computer; Gretsch studio drums, Ludwig snare, Paiste cymbals, '60 Les Paul custom, Strat w/Floyd Rose; Ibanez Artist, Santa Cruz D 46C acoustic P bass; flute, Fender Deluxe, Sweet Comp.
Video Equipment & Services: Sweetening, effects library, ADR. Composition, scoring, arrangement—call for details.
Rates: \$22-35/hr.
Extras: Fully air-conditioned, lounge, kitchenette, private parking, walk to restaurants & stores. Real-time custom chrome cassette duplication. Production, arrangement session musicians and vocalists available.

—LISTING CONTINUED ON PAGE 146

LaSalle stocks over 250 product lines, giving you the widest choice.

LaSalle's prices are the lowest, offering you the best values. Their product

knowledge and service are expert, supporting you both before and after your purchase.



Call:
inside MA (617) 536-0066
Nationwide (800) 533-3388
or Visit:
1116 Boylston Street
Boston, MA 02115
22 LaSalle Road
West Hartford, CT 06107

LaSalle
Professional Audio & Musical Instruments

Circle #109 on Reader Service Card

Direction: Lita J. is a professional musician/engineer with years of experience on both sides of the board. Whether you're a beginner or veteran, we've been there, and we'll work with you. We treat every project with the care of major label recording, and respect your budget like our own. For further products, for less money—call us. At Dragon Studios, the destination for music.



DUNCAN STREET STUDIOS
San Francisco, CA

●●● **DUNCAN STREET STUDIOS**
240 Duncan St., San Francisco, CA 94131
(415) 285-9093
Owner: John Blakely
Studio Manager: John Blakely
Engineers: John Blakely, Brian Woodland
Dimensions of Studios: 4 x 10
Dimensions of Control Rooms: 15 x 11 (includes iso booth, for vocals)
Tape Recorders: Tascam 85-16B 16 track, w/ Autolocator & dbx, 16 track; Tascam 80-8 w/dbx, 8 track; Tascam 35-2 w/dbx, 2 track; Pioneer 2/2, 4/2 track.
Mixing Consoles: Sound Workshop Series 30, w/28 VCA inputs.
Monitor Amplifiers: Yamaha P2201, BGW 100.
Echo, Reverb & Delay Systems: Lexicon PCM60 digital reverb, (2) DeltaLab ADM 256 digital delays, ADM 1024 digital Electron; Marshall Time Modulator; Lexicon Prime Time; Valley People Dyna-Mite; AKG BX10 reverb.
Other Outboard Equipment: (2) dbx 161 compressors, Orban 622B dual parametric EQ, Ashly SC66A dual parametric EQ, Tapco C201 and MXR dual graphic equalizers.
Microphones: Neumann U87s; AKG 414s, 451s; E-V RE20s; Sennheiser MD421s; Shure SM57s, 58s.
Instruments Available: Hamilton 5' baby grand piano, Twin reverb, Precision bass, Gibson Les Paul.
Rates: Call for quote.

●●● **EASTERN WASHINGTON UNIVERSITY**
Cheney, WA 99004
(509) 359-2228
Owner: Eastern Washington University
Studio Manager: Jim Kort

●●● **FAST TRACK (RECORDING) STUDIO**
also REMOTE RECORDING
1906 E. 115 Place, Northglenn, CO 80233
(303) 457-0730
Owner: Technical Sounds Inc.
Studio Manager: Wayne Grubandt

●●● **FREEWAY RECORDING, INC.**
2248 E. 14th St., Oakland, CA 94606
(415) 532-3700
Owner: Bonnie Billy Rivera, Peggy McDonald
Studio Manager: Bonnie Rivera

●●● **FRESH STUDIO**
P.O. Box 1931, Mill Valley, CA 94942
(415) 383-0229
Owner: Fresh Music Corp.
Studio Manager: Fresh Music Corp.

●●● **GUNG HO RECORDING**
also REMOTE RECORDING
86821 McMurrott Lane, Eugene, OR 97402
(503) 484-9352
Owner: Bill & Jennifer Barnett
Studio Manager: Bill Barnett



●●● **HOT TRACKS RECORDING**
also REMOTE RECORDING
2217 A The Alameda, Santa Clara, CA 95050
(408) 554-1117
Owner: Phil Jamison, Don Heinsen.
Studio Manager: Phil Jamison.
Engineers: Phil Jamison, Don Heinsen, Bob Langlie, Paul Fox
Dimensions of Studios: 448 sq. ft.
Dimensions of Control Rooms: 208 sq. ft.—entire facility is 2,000 sq. ft.
Tape Recorders: Tascam 85-16B w/ Autolocator & dbx, 16 track; Tascam 80-8 w/dbx, 8 track; Tascam 35-2 w/dbx, 2 track; Pioneer 2/2, 4/2 track.
Mixing Consoles: Sound Workshop Series 30, w/28 VCA inputs.
Monitor Amplifiers: Yamaha P2201, BGW 100.
Monitor Speakers: UREI 813s, JBL 4311s, and Auratones.
Echo, Reverb & Delay Systems: Lexicon PCM60 digital reverb, (2) DeltaLab ADM 256 digital delays, ADM 1024 digital Electron; Marshall Time Modulator; Lexicon Prime Time; Valley People Dyna-Mite; AKG BX10 reverb.
Other Outboard Equipment: (2) dbx 161 compressors, Orban 622B dual parametric EQ, Ashly SC66A dual parametric EQ, Tapco C201 and MXR dual graphic equalizers.
Microphones: Neumann U87s; AKG 414s, 451s; E-V RE20s; Sennheiser MD421s; Shure SM57s, 58s.
Instruments Available: Hamilton 5' baby grand piano, Twin reverb, Precision bass, Gibson Les Paul.
Rates: Call for quote.

●●● **JEEPS BAR & REC. STUDIO**
also REMOTE RECORDING
P.O. Box 280, Alpine, WY 83128
(307) 654-7585
Owner: Jeep Molnar
Studio Manager: Jeep Molnar

●●● **JESTER SOUND STUDIO**
also REMOTE RECORDING
423 Kuhlman Dr., Billings, MT 59105
(406) 248-5896
Owner: Bob Hale
Studio Manager: Bob Hale

●●● **JMC MUSIC GROUP**
also REMOTE RECORDING
2700 Champa, Denver, CO 80205
(303) 297-3131
Owner: John S. Macy
Studio Manager: John S. Macy

●●● **LAYA-TRACK RECORDING**
also REMOTE RECORDING
1805 Academy Rd., Bellingham, WA 98226
(206) 733-8824
Owner: Jim & Mary Ann Zender
Studio Manager: Jim Zender

●●● **LIKEWISE PRODUCTIONS**
P.O. Box 5447, Berkeley, CA 94705
(415) 654-3112
Studio Manager: Jeffrey O. Holt
Engineers: Jeffrey O. Holt, Craig Grifflath plus independents; technicians: John Imholz, Randy Stadman; maintenance: David Seabury, Wen Vegas.
Dimensions of Studios: (A) 16 x 24; (B) 12 x 22; (C) 6 x 12 iso booth
Dimensions of Control Rooms: 10 x 14 new tuned room.
Tape Recorders: Tascam 85-16 w/dbx, 16 track (w/pitch control), TEAC 80-8 w/dbx, 8 track (w/pitch control); (2) Otari MX-5050B, 2 track (w/pitch control).
Mixing Consoles: Sound Workshop Series 20, 20 x 16 x 2; Effects Mixer, 8 x 2.
Monitor Amplifiers: Studer stereo power amp A-68, Sansui BA 3000 power amp.

Monitor Speakers: Tannoy SRM 12B, Yamaha NS-10s Gauss, Electro-Voice, Auratones, AKG headphones
Echo, Reverb & Delay Systems: Lexicon Prime time digital delay M93, stereo chorus, Electron delay, Master-Room stereo reverb XL-305, stereo plate reverb w/gate and EQ, Roland RE-150 space tape echo, PCM60 upon request.
Other Outboard Equipment: (2) UREI LA-4 compressor/limiter, stereo chorus, Dyna-comp, dbx 160 compressor/limiter, Boss chorus/vibrato, distortion box, headphone amp, Dr. Rhythm click track DR-55, Countryman direct boxes, volume pedal, Korg guitar tuner, Inovonics peak limiter, TEAC model 124 Syncaset, Symetrix dual noise gate, Trans-audio turntable, pinball machine (any outside rentable equipment).
Microphones: Neumann U87; (2) AKG 414EB, 451; Sennheiser 421; Beyers 500, M-69; Sony ECM-56F; E-V RE10, PL9; Shure SM56, 58; on request.
Instruments Available: Prophet-5, Roland Juno 106 upright great acoustic piano, drums by Gretsch, Roland 707 drum machine, Rogers wooden snare drum, Fender Bassman, Nady Lighting guitar switchable amp w/tube voice, Fender Strat, Marshall 4-12 bottom, Yamaha 6- & 12-string acoustic guitars, percussion, etc.
Video Equipment & Services: Sony stereo TV monitor KV-1956R. (Rental video equipment upon request.)
Rates: From \$17.95 to \$29.95/hr including engineer; a true musicians studio. Block rates available.
Extras: Comfortable secluded atmosphere, our studio becomes yours—client lounge, kitchen, ionizer, storage, maintenance shop (w/tech on call 24 hrs), warm-up booth, coffee, mt. fresh water, pinball, night jasmine, guidance, hope.
Direction: Credits: Ray Obiedo, Sheila E., The Looters, Billy Satellite, Joe Satriani, Curtis Ohlson, Linda Tillery, Mark Ruggo, Andy Narell, Vicki Randall, Alex Ligertwood, Brad Gillis, Teresa Trull, Larry Schneider, Norman Greenbaum, June Millington, Audio, Persuaders, Curtis Lawson, Rubinoos, Heikki Koskinen, Tim Toomay, KMEI, Tom Condon, Steve One & the Shades, Vision, KSAN, Terminal Man, Larry Batiste, Barry Beam, Shakes, Mary Watkins, Leo Frappier, Robert Grace, Tony Kilbert, Kevin Pickett, Behold Wyoming, Randy Biagi, Holly Near, Joaquin Lievano, Chris Williamson, Ck Ladekpo, Brownsville Station, Two Tons, David Goldblatt, Robbie Dunbar, Jesse Bradman, and many other talents, film-scores, video soundtracks. Likewise Productions would like to thank all bands and producers that have chosen our studio.

●●● **LITTLE ELK STUDIO**
also REMOTE RECORDING
3605 Crosstrail Ct., Colorado Springs, CO 80906
(303) 576-1976
Owner: Rick Burgess
Studio Manager: Wes Cavalier

●●● **MAGIC MUSIC RECORDING STUDIO**
also REMOTE RECORDING
134 Ridge Top Circle, Bayfield, CO 81122
(303) 884-9690
Owner: Alden Hamilton
Studio Manager: Burly Labrador

●●● **MAGIC SOUND**
also REMOTE RECORDING
1780 Chanticleer Ave., Santa Cruz, CA 95062
(408) 475-7505
Owner: Alan Goldwater
Engineers: Alan Goldwater, Merle Sparks.
Dimensions of Studios: 16 x 20 x 12 (asymmetrical wedge ceiling); 12 x 14 isolated drum room; 5 x 6 x 7 booth.
Dimensions of Control Rooms: 12 x 14 x 16.
Tape Recorders: MCI/Inovonics JH 10-16 15/30 ips, 16/8 track; Rockwell computer auto locator; Ampex AG 444B 15/30 ips, 2 track; Electro-sound 505, 2 track; (2) Kenwood KX 1060 cassette; Otari MX5050, 2 track; Sony PCM 701 digital, 2 track.
Mixing Consoles: Custom 36 input, 8 bus, separate 16 track fully equalized monitor, section, full patchbay, API 550 mix board EQ.
Monitor Amplifiers: Dynaco 150 and Phase Linear 400.
Monitor Speakers: Alect/UREI 811, White EQ 4100, Sennheiser & AKG headphones.
Echo, Reverb & Delay Systems: Ecoplate II, multi-track reverb, Marshall Time Modulator, Roland Space Echo, Lexicon Prime Time II.
Other Outboard Equipment: (2) MXR flanger, (2) MXR 2/3-octave graphic EQ, UREI LA-4 limiter, (2) Universal Audio 175B tube limiters, Allison Gain Brain, Mayer noise gates; (8) API 550A EQs; (2) UREI LA-4A limiters, Thorens/Rabco disc player.
Microphones: Neumann KM54a, U67; (2) AKG 414-EB, C-451, D-190, D-160, D-12, C28-A (tube); Beyers M-260, (2) X1N; (2) Sennheiser MD-421; Shure SM57, 58, 81 (several each); Sony C377, C22, C-37A (tube); Alect M30s (tube), RCA BK5 (ribbon); (2) AKG C61a tube, C12 (tube); Shure SM-7.
Instruments Available: Cable upright piano, Hohner D6 clavinet, Apple computer 16 voice synthesizer system; Guild F30, Danelectro and Rickenbacker 12-string guitars; Fender Princeton and Deluxe amps, Polytone amps; CB

drums w/Zildjian cymbals, E-mu Systems Emulator w/all software, E-mu Systems Drumulator w/computer sequencer. **Video Equipment & Services:** Panasonic NVS200 w/computer search, Panasonic 8500 VHS editing system. **Rates:** \$40/hr, 16 track; \$30/hr block (10 hrs or more); \$30/hr, 8 track; \$25 block; \$25/hr, 2 track & editing; 1 hour free set-up. Above rates include engineer & instruments.

●●● **MARINSOUND**

448 Dubois, San Rafael, CA 94901
(415) 459-5152

Owner: Dr. Sam Waxler, Fred Waxler, Al Lachtman
Studio Manager: Fred Waxler
Engineers: Fred Waxler

Dimensions of Studios: 48 x 30 x 13; 18.5 x 14 x 10.
Tape Recorders: Tascam 8516 w/autolocator, 16 track; Otari 5050B, 2 track; Technics RSM 280 cassette; Marantz PMD 360 cassette; TEAC 3300 SX, 2 track.

Mixing Consoles: Tangent Series 16 22 x 16.

Monitor Amplifiers: AB Systems, Phase Linear, SAE.
Monitor Speakers: UREI 813, Yamaha NS10M, JBL 4333, Auratones, Koss phones, Fostex phones.

Echo, Reverb & Delay Systems: Ecoplate II, Ursula Major Space Station, DeltaLab ADM 1024, DeltaLab ADM 256; 2 track tape slap, Ibanez harmonizer, MXR flanger/doublers.

Other Outboard Equipment: (2) dbx 165, dbx 161, Valley People Stereo Dyna-Mite, Universal Audio 550-A filter, (2) Biamp EQ 140 parametrics, (2) McMartin limiters, Spectra-Sonics 510 comp/limiter, (2) Roger Mayer gates, (2) Symtrix gates, Orban stereo de-esser.

Microphones: Sony C-48, C-37 P; Neumann KM84; AKG 451, 224, CK22; Shure SM81, SM33, SM56; Sennheiser 409, 421, 441; Tascam PE-250; E-V RE20, RE15; Beyer M-160, M-88; Altec 298; Countryman DI; Jensen X-former DI; Sony ECM 50.

Instruments Available: Baldwin baby grand, Hammond B-3 w/Leslie, Rhodes, Wurlitzer, SH101, Drumulator, Strat, Vox 12-string, Music Man bass, G&L bass, Ovation 6-string, Martin D-18, Fender Twin, Fender Champ, Fender Concert 112, Ampeg U-4, Sunn 2000 S, PA systems.

Rates: \$35/hr with block book and prepay discounts available.

●●● **MELODY LINE PRODUCTIONS**

also **REMOTE RECORDING**

2662 Kalialani Circle, Pukalani, Maui, HI 96788
(808) 572-1640

Owner: Bob Bangarter, Tom Hall

Studio Manager: Bob Bangarter, Tom Hall, Sharon Hall

●●● **PETER MILLER RECORDING**

also **REMOTE RECORDING**

P.O. Box 11013, San Francisco, CA 94101
(415) 567-7040

Owner: Peter Miller

Studio Manager: Peter Miller

Engineers: Peter Miller and various highly qualified professionals.

Dimensions of Studios: 30 x 20.

Dimensions of Control Rooms: 20 x 12.

Tape Recorders: 3M 56, 16 track; Ampex 440C, 2 track; Revox A77, 2 track; Sony 854-4, 4 track; Technics RSM 85-2, 2 track.

Mixing Consoles: Soundcraft series 2, 24 x 16.

Monitor Amplifiers: Quad 33/303, Shure SR105 series.

Monitor Speakers: Altec 604-8G (in 9 cu. ft. cabinets), Auratones.

Echo, Reverb & Delay Systems: Lexicon Prime Time II DDL, Lexicon 200 digital reverb, Lexicon PCM60 digital reverb, EMT 1405 plate reverb.

Other Outboard Equipment: UREI 1178 compressor/limiters; Drawmer DS201 noise gates; SAE graphic 1/2-octave EQs; Trident parametric EQs; Roland Vocoder; Apollo compressor; Orban 622 parametric EQ.

Microphones: Neumann U87, U47, KM84; AKG 414, C28B; Shure SM58, SM57, SM56; E-V RE20; Sennheiser 421, 414; Countryman DI.

Instruments Available: Acoustic piano, Pre CBS Fender Concert and Vibroverb, various Gibson, Gretsch, Fender electric guitars, Drumulator, Yamaha DX7, Ludwig drum set, Music Man amp.

Video Equipment & Services: VHS 1/2-inch recorder and camera, promo 8 x 10 picture studio, and album design/photography.

Rates: Please call for current specials.

●●● **MILLTREE PRODUCTIONS**

also **REMOTE RECORDING**

P.O. Box 70322, Seattle, WA 98107
(206) 782-3115

Owner: George Miller, Claude Autry

Studio Manager: Claude Autry

●●● **MSJ**

also **REMOTE RECORDING**

505 N. 21st Ave., Yakima, WA 98901
(509) 575-6685

Owner: Mark E. Farmer

Studio Manager: Mark Farmer

Need a reliable employee?

Mix Classifieds are the place to advertise for management, sales and technical personnel. They all read **Mix**, the audio industry's largest, most widely-distributed magazine!

To place a **Mix Classified ad**, call Lauri Newman at **(415) 843-7901**. Deadline: 10th of month, two months prior to publication.

THE RECORDING INDUSTRY MAGAZINE

Mix

**Manufacturing High Quality Products
For the Recording Industry Since 1966**

We're Here to Help You.



El Mar Plastics, Inc.

821 E. Artesia Blvd., Carson, CA 90746

Phone: (213)327-3180

Telex: 215295

Circle #111 on Reader Service Card

THE
QUALITY
PACKAGE

1,000 pure vinyl records in paper sleeves

One color printed labels

All metal parts and processing

Mastering with Neumann VMS70 lathe & SX74 cutter

7" 45 RPM Record Package	12" Album Package Records and Printed Covers
\$399.	\$1372.


(FOB Dallas)
(To receive this special price, this ad must accompany order)

12" 33-1/3 Album Package includes full color stock jackets or custom black and white jackets.

Package includes full processing
Re-orders available at reduced cost.

We make full 4-color Custom Albums, too!

For full ordering information call
1-800-527-3472



record & tape manufacturing co.
902 Industrial Boulevard, Dallas, Texas 75207
(214) 741-2027

Circle #112 on Reader Service Card

SOUND SYSTEM

BUZZ

ITS TOO BAD YOU
CANT ALWAYS KEEP IT CLEAN

BUT NOW
ITS ONLY TEMPORARY
INTERFERENCE WITH
A
MODEL PS-1



In addition to reducing RFI the PS-1 can also protect your sound reinforcement equipment from:

HIGH VOLTAGE TRANSIENTS
UNEXPECTED POWER UP TRANSIENTS
IMPROPER LINE POLARITY



**linear & digital
systems, inc.**

46 marco lane
centerville, oh.45459

Circle #113 on Reader Service Card



••• MUSIC ART RECORDING STUDIO M.A.R.S.

P.O. Box 1838, Aptos, CA 95003
(408) 688-8435

Owner: Ken Capitanich
Studio Manager: Ken Capitanich
Engineers: Ken Capitanich, Will Holt
Dimensions of Studios: 16 x 18.
Dimensions of Control Rooms: 14 x 15.
Tape Recorders: Ampex MM1100, 16 track; Tascam 80-B w/dbx, 8 track; Ampex 440-C, 2 track; Otari MX 5050, 2 track.
Mixing Consoles: Tangent (modified) 3216, 16 x 16.
Monitor Amplifiers: Crown DC 300A, D150-A, (2) DC75, PS-400.
Monitor Speakers: UREI 811; MDM 4; JBL 4313 B; Auratones.
Echo, Reverb & Delay Systems: Lexicon Prime Time; Eventide Harmonizer; Ecoplate II; Lexicon 200; MICMIX XL 305; S-24 time Shape Module.
Other Outboard Equipment: (2) ADR expander/gates; (3) comp/limiter; (2) ADR parametric EQ; Aphex Exciter; MXR phaser; (3) ADR 502 mike preamp.
Microphones: Neumann, AKG, Sennheiser, Sony, Shure, E-V, Beyer, Neumann tube U67.
Instruments Available: Chickering 6'6" grand piano, Hammond B-3.
Rates: \$50/hr, 16 track; \$35/hr, 8 track.

••• MUSIC CENTER STUDIOS

also REMOTE RECORDING
403 N. Higgins, Missoula, MT 59802
(406) 549-6145
Owner: P.W. Kuschel
Studio Manager: Richard H. Kuschel

••• MUSICAL IMAGE PRODUCTIONS

3013 E. Monte Vista, Denair, CA 95316
(209) 632-8415
Owner: Gary Shriver
Studio Manager: Gary Shriver

••• MUSICAL IMAGE PRODUCTIONS

3013 E. Monte Vista, Denair, CA 95316
(209) 632-8415
Owner: Gary Shriver
Studio Manager: Gary Shriver

••• RAY NAKAMOTO PRODUCTIONS

1030 48th St., Sacramento, CA 95819
(916) 451-3400
Owner: Ray Nakamoto, Marni Nakamoto
Studio Manager: Ray Nakamoto

••• JON NEWTON MUSIC

Box 42526, Portland, OR 97242
(503) 233-9421
Owner: Jon Newton

••• NORTHWESTERN INC.

1224 S.W. Broadway, Portland, OR 97205
(800) 547-2252, (503) 226-0170
Owner: Bob Lindahl
Studio Manager: Paul Buescher

••• OCEAN BREEZE RECORDING

also REMOTE RECORDING
2021 Bluebell Dr., Santa Rosa, CA 95404
(707) 527-8131
Owner: Ben C. Rothenberg
Studio Manager: Ben C. Rothenberg

••• OUTBACK STUDIOS

489 1/2 Cavour St., Oakland, CA 94618
(415) 655-2110
Owner: Wilson Dyer
Studio Manager: Nancy Dyer

••• PARADISE STUDIO

3761 Esperanza, Sacramento, CA 95864
(916) 484-7859
Owner: Arne Peterson
Studio Manager: Craig Long

••• PARAGON SOUND

also REMOTE RECORDING
216 Hemlock, Ft. Collins, CO 80524
(303) 493-8395
Owner: Paragon partnership
Studio Manager: Frank Bruen

••• PARVIN STUDIOS

P.O. Box 16191, San Francisco, CA 94116
(415) 359-1853
Owner: M.B. Eads Co.
Engineers: Lee Parvin and Henry Parvin
Dimensions of Studios: 22 x 16.
Dimensions of Control Rooms: 12 x 13.
Tape Recorders: Ampex MM-1000, 16 track; Ampex 440-B, 8 track; Ampex 440-B, 4/2 track; Ampex AG500, 1/2 track; Akai GX-630D stereo, 1/4 track; Akai 950-B stereo cassette.
Mixing Consoles: Audiotronics 501-26, 18 x 16.
Monitor Amplifiers: Marantz 15, Crown DC300.
Monitor Speakers: Alect 604-9G, UREI Time Align, Auratone 5Cs, JBL 4311.
Echo, Reverb & Delay Systems: Master-Room Stereo C Series reverb, AKG Wien Stereo.
Other Outboard Equipment: UREI Model 1176 LN limiters, UREI Model LA-4 compressor/limiters, Orban/Parasound parametrics, UREI S30 equalizer, dbx noise reduction, Eventide Harmonizer, El-Tech take finder.
Microphones: Neumann U87, U47, KM86, KMS85; Sennheiser 421, 441; AKG 1000; Shure SM81, SM58, MB 301 ribbon, 549; AKG D-200; Electro-Voice RE20.
Instruments Available: Emerson baby grand piano, Hammond B-3 organ, Fender Rhodes piano.
Rates: Call for rates.

••• PEAKDESIGN

also REMOTE RECORDING
Montclair, Oakland, CA 94611
(415) 531-5331; Telex 755056
Owner: Tony Milosz
Studio Manager: Joanna Rajska
Engineers: Tony Milosz, Stanislaw Krupowicz
Dimensions of Control Rooms: Integrated control room/studio: 18 x 40.
Tape Recorders: 3M M79, 16 track; Otari 5050-85D modified, 8 track; Otari 5050-B, 2 track; Sony PCM501ES/SLHF300/SL2000, 2 track (digital).
Mixing Consoles: Dynamix D3000 automated, 32 x 8 x 16 x 2; miscellaneous submixers.
Monitor Amplifiers: Yamaha.
Monitor Speakers: JBL, Alect Lansing, Auratones.
Echo, Reverb & Delay Systems: Roland SRV2000, (2) Yamaha R1000, (3) DeltaLab Effectron 1024, Korg SDD1000 modified, (2) custom spring reverbs, custom Peakdesign signal processor, ADA flanger, Wavemaker phaser.
Other Outboard Equipment: Cyclosonic FS1 3-dimensional panner; Orban, Tascam, Advent, DOD equalizers; Aphex B; Dynaflex; Orban, dbx compressors; Peakdesign custom direct to digital SMPTE/MIDI control computer; Yamaha CXSF System; Roland SBX80 SMPTE sync; Roland MSQ700 seq; Yamaha QX7SEQ; IBM PC/AT w/Roland MPS and other software for sequencing/notation; Sony 520 ES CD player, Spectrum analyzers, scopes and other equipment.
Microphones: Sony, Sennheiser.
Instruments Available: (2) Yamaha DX7; Yamaha TX816; Akai 5612 sampler w/disk; (2) Drumulators w/custom chips; Roland, Oberheim, Sequential Circuits, Moog synths; grand piano, Fender P-bass, Gibson 335, pots and pans.
Video Equipment & Services: 1/2-inch BETA-VHS playback; SMPTE sync; PCM/Beta Hi-fi dubbing; soundtrack composition/production.
Rates: Contact us by telephone or telex.
Extras: Compact Disc pre-production, synth programming, custom analog/digital/software design for specific equipment or projects. Composition, arranging and production services. Studio equipment, consulting and importing. Feel free to call about your ideas or needs.
Direction: High-tech. Integrated computerized SMPTE/MIDI facility for direct to digital recording for soundtracks, commercials and unusual projects. Research and development in synthesis and signal processing techniques/studio computerization. Peakdesign welcomes contact with like-minded people.

AKAI

**WE LISTENED TO WHAT
THE KEYBOARD PLAYER REQUIRED...
AND NOW WE WOULD LIKE
YOU TO TRY WHAT YOU ASKED FOR!**

For years, the keyboard players have been forced to utilize effects designed for other instruments — now, through the advance technology of the AKAI Engineering Team, we introduce the AKAI ME effects line... especially designed for the keyboard player!



ME-10D

MIDI DIGITAL DELAY

The ME-10D directly delays the MIDI signal with a maximum of 1000 M/Sec. Also, you can raise or lower the MIDI signal by one octave. Superb frequency response is achieved that was previously impossible by applying delay to the audio output! Try it... you'll buy it!

\$149.95

ME-15F

MIDI DYNAMICS CONTROLLER

Now utilizing the ME-15F the MIDI signals can be intelligently mixed together without deterioration of sound quality. Only now is it possible to interconnect two sequences through the ME-15F to change the dynamic data at the data editing stage.

Every MIDI player needs this controller in his system.

\$149.95

ME-20A

MIDI SEQUENCE ARPEGGIATOR

The ME-20A Sequence Arpeggiator allows you to play arpeggios with the chords that have been input from a MIDI keyboard and other instruments. This device also can be used as a polyphonic sequencer up to 1056 notes with step-by-step input. Three different arpeggio patterns including up, down and sequence can be selected from the front panel. Sequences and arpeggio patterns with rests can easily be arranged. The ME-20A is ideal during rehearsals and live performances because of the volume for just the arpeggios, staccatos and regattos.

This arpeggiator is an effects device that is a must for every performance!

\$149.95

\$10.00 Factory Rebate!
Limited Time Offer
See Your Akai Dealer
For Details

Another Product of **IMC**

For more information, contact:

AKAI PROFESSIONAL PRODUCTS

P.O. Box 2344, Fort Worth, Texas 76113

Telephone (817) 336-5114, Telex 163203 IMCTX UT, FAX (817) 870-1271

Circle #114 on Reader Service Card

●●● RAIN RECORDING
 also REMOTE RECORDING
 Box 297, Mt. View, HI 96771
 (808) 968-6042, 968-6346
 Owner: Kenneth Chikasyue
 Studio Manager: Ean Chikasyue

●●● BILL RASE PRODUCTIONS, INC.
 also REMOTE RECORDING
 955 Venture Ct., Sacramento, CA 95825
 (916) 929-9181
 Owner: Bill Rase
 Studio Manager: Wayne Johnson

●●● REDWOOD CREEK RECORDING
 also REMOTE RECORDING
 Star Route, Blue Lake, CA 95525
 (707) 668-4244
 Owner: Ann Dixon
 Studio Manager: Bert Pectol

●●● THE RIGHT TRACK
 156 S.W. 153rd, Seattle, WA 98166
 (206) 241-4850
 Owner: The Producers Lounge Records
 Studio Manager: Ron Combs, Michael Kidd

●●● ROCKY MOUNTAIN PRODUCTION
 also REMOTE RECORDING
 1050 E. 1600 N., Mapleton, UT 84663
 (801) 489-7850
 Owner: Walt Jones, Carl Fritch
 Studio Manager: Gary Horan

●●● ROXOUND STUDIOS
 11857 3rd Ave. So., Seattle, WA 98168
 (206) 246-6114
 Owner: Mark Angelesdes
 Studio Manager: Jeff Powell



●●● SAN JOSE STATE UNIVERSITY
 Music Dept., San Jose State Univ., San Jose, CA 95192
 (408) 277-2905
 Studio Manager: Dan Wyman, Allen Strange

●●● RANDALL SCHILLER PRODUCTIONS
 also REMOTE RECORDING
 1207 Fifth Ave., San Francisco, CA 94122
 (415) 661-7553
 Owner: Randall Schiller
 Studio Manager: Randall Schiller
 Engineers: Randall Schiller, Cathy Cohn, John Monitto
 Dimensions of Studios: 12½ x 15; drum room: 9 x 9.
 Dimensions of Control Rooms: 12½ x 15.
 Tape Recorders: TEAC/Tascam MS-16, 16 track; TEAC/Tascam 80-8, 8 track; Otari 5050B, 2 track; Sony TC-854-4S, 4 track; Sony TC-850-2T, 2 track.
 Mixing Consoles: TEAC/Tascam M-520, 20 x 8; TEAC/Tascam 5B, 8 x 4; TEAC/Tascam M-35EX, 12 x 4.
 Monitor Amplifiers: SAE A-201, A-501; BGW Model 100-01.
 Monitor Speakers: JBL 4411, Auratone 5C, Altec A7-500 (modified and bi-amplified) and Pioneer CS-88.
 Echo, Reverb & Delay Systems: DeltaLab 2048 digital delay, DeltaLab DL-2 Acousticomputer stereo digital delay, Eventide 910 Harmonizer, Yamaha REV-7 digital reverb and

Sound Workshop 242 stereo reverberation unit.
 Other Outboard Equipment: MXR dual 15-band graphic equalizers, Orban 62 parametric equalizer, dbx 161 compressor/limiter, UREI 1178 stereo compressor/limiter, dbx 154 Decilinear noise reduction, Crown VFX-2A stereo electronic crossover/filter, SAE 5000 Impulse Noise Reduction unit, dbx 503 dynamic range expander, Technics SL-1200 MkII turntable, assorted patch bays and necessary support equipment.

Microphones: AKG C-414s; Electro-Voice RE15; Shure SM81s, SM58s, SM57s, SM78s, 55SH, "Green Bullet"; Sony ECM-33P, ECM-16; Sennheiser MD-421s, MD-431s
 Instruments Available: Story & Clark console piano.
 Video Equipment & Services: Sony SL-2700 stereo Hi-fi video cassette recorder.
 Rates: Studio recording: 16 track, \$30/hr; 8 track, \$25/hr; 4 track, \$20/hr; 2 track \$20/hr. Location recording: available upon request.
 Extras: Kitchen facilities!
 Direction: We are a multi-faceted company providing facilities and services in the areas of audio, video, film and theater. We are dedicated to providing the highest quality in a relaxed but professional environment. In addition to recording studio services and location recording services, we provide sound reinforcement for venues ranging from small clubs to large outdoor concerts, audio design and installation, film and video production and lighting services.

●●● SHEWBREAD MUSIC
 Highway 95, Lucile, ID 83542
 (208) 628-3944
 Owner: Phil Moulton
 Studio Manager: Phil Moulton
 Engineers: Phil Moulton
 Dimensions of Studios: 30 x 24.
 Dimensions of Control Rooms: 14 x 14.
 Tape Recorders: Ampex MM1100, 16 track; TEAC 80-8, 8 track; TEAC 73002T, 2 track; TEAC 3300 2T, 2 track; TEAC A-104 cassette.
 Mixing Consoles: Amek TAC 24 x 8 x 2.
 Monitor Amplifiers: Uni-Sync.
 Monitor Speakers: Dahlquist DQ9, JBL, Auratone.
 Echo, Reverb & Delay Systems: Sound Workshop reverb, ART digital reverb, ART digital delay.
 Other Outboard Equipment: Symetrix limiters, Symetrix gates.
 Microphones: Beyer, AKG, Shure, Electro-Voice.
 Instruments Available: Kawai EP 308 grand piano, Kawai SX-240 programmable synthesizer, Ovation stereo acoustic guitar, Rickenbacker bass, Fender Precision bass, Les Paul personal studio guitar, Marshall lead amplifier, Drumulator drum machine, Drumulator pad programmer, Dr. Click clock machine, Tristech direct boxes.
 Rates: 8 track, \$35/hr; 16 track, \$45/hr; mixing & editing, \$25/hr. Package discount to gospel artists.

●●● SIERRA SOUND LABS
 also REMOTE RECORDING
 1741 Alcatraz Ave., Berkeley, CA 94703
 (415) 655-7636
 Studio Manager: Robert C. de Sousa

●●● SOUND & VISION
 684 Indiana St., San Francisco, CA 94107
 (415) 821-2321
 Owner: Neil Brighton, Michael Molanda
 Studio Manager: Michael Molanda

●●● SOUND RECORDING COMPANY
 also REMOTE RECORDING
 W. 503 Indiana Ave., Spokane, WA 99205
 (509) 326-0222
 Owner: SRC, Inc.
 Studio Manager: Irene J. Carter

●●● THE SOUND SERVICE
 also REMOTE RECORDING
 860 Second St., San Francisco, CA 94107
 (415) 433-3674
 Owner: David Dobkin, Steven Pinsky
 Studio Manager: David Dobkin

●●● STARLIGHT RECORDING
 P.O. Box 1241, Jacksonville, OR 97530
 (503) 846-7137
 Owner: Michael Lewis
 Studio Manager: Michael Lewis

●●● STARTSONG
 3218 E. LaSalle, Colorado Springs, CO 80909
 (303) 634-2045
 Owner: Tom Gregor

**AUDIO CASSETTE
 COST & PRODUCTION DATA**

**FORMULAE
 TABLES
 GRAPHS**

PREPARED BY

KARA RESEARCH & DEVELOPMENT

24 Commercial Blvd., Suite E-H
 Novato, CA 94947
 (415) 883-5041

**COST EFFECTIVE
 AUDIOPHILE
 CASSETTE
 PRODUCTION**

**FOR YOUR
 FREE
 12 PAGE
 MANUAL
 CALL
 800-231-TAPE
 FROM CALIFORNIA
 415-883-5041**

**KENNETH A. BACON ASSOCIATES
 24 Commercial Blvd., Suite E-H
 Novato, CA 94947 415-883-5041**

Circle #115 on Reader Service Card

●●● SUITE 17
 1016 Morse Ave. #17, Sunnyvale, CA 94089
 (408) 734-2438
 Owner: Doug Hopping
 Studio Manager: Doug Hopping
 Engineers: Kevin Gilbert, Mel Hartley, Doug Hopping, Scott Smith.
 Dimensions of Studios: 15 x 18 x 12, 12 x 15 x 8, 8 x 10 x 12.
 Dimensions of Control Rooms: 21 x 14.5 x 12
 Tape Recorders: Ampex MM-1000, 16 track; Otari 5050B, 2 track.
 Mixing Consoles: TAC/Amek Matchless, 20 x 24 x 8 x 2; Roland CPE-800 Compu-editor (16 track digital automation).
 Monitor Amplifiers: Haller, BGW.
 Monitor Speakers: JBL 4430 Bi-Radials, MDM-4 near field, Yamaha NS-10s, Auratones.
 Echo, Reverb & Delay Systems: Lexicon 200 digital reverb, Roland SRV-2000 digital reverb, Ecoplate III plate reverb, Lexicon Prime Time DDL, Eventide 910 Harmonizer, DeltaLab Super Time Line DDL, Loft 440 analog delay, MXR flanger/doubler, MXR stereo chorus.
 Other Outboard Equipment: UREI LA-4 compressor, dbx 160 compressor, Symetrix SG-200 noise gates, Symetrix 522 noise gates, EXR Exciter.
 Microphones: AKG, Electro-Voice, Neumann, RCA, Sennheiser, Shure, Sony.
 Instruments Available: Packard 6' grand piano (built 1918).
 Rates: Please phone for rates.



SYNCRONICTY
 San Rafael, CA

●●● SYNCRONICTY
 Box 596, San Rafael, CA 94915
 (415) 456-1012
 Owner: Windsor Riley
 Studio Manager: Windsor Riley
 Engineers: Tom Nollison, Windsor Riley
 Tape Recorders: Fostex B16, 16 track; Otari MX5050, 2 track; Technics M253X, cassette deck; Technics RS 933W, dubbing cassette.
 Mixing Consoles: Ramsa WRT820, 20 x 8.
 Monitor Amplifiers: NAD 3150.
 Monitor Speakers: TOA 280 ME, Audio Source.
 Echo, Reverb & Delay Systems: Lexicon PCM60, Roland SDE 2500, DeltaLab ADM 1024.
 Microphones: AKG C451E, Fostex M5.
 Instruments Available: Roland JX-8P, Juno 60 w/MD8 MIDI interface, MSQ 700, TR 707, MPU-105 MIDI output selector, Yamaha TX7, DX21, Akai 5612 sampler w/disk drive, Gallien Kruger 112 LC guitar amp.

●●● SYNTASY
 P.O. Box 6283, San Rafael, CA 94903
 (415) 492-9341
 Owner: Bernard Xoloti
 Studio Manager: Bernard Xoloti

●●● TWILIGHT
 642 Palm Ave., Watsonville, CA 95076
 (408) 722-7819
 Owner: Steve Loveless
 Studio Manager: Steve Loveless

flexibility!

Littlite[®]
 Gooseneck Lamps & Accessories

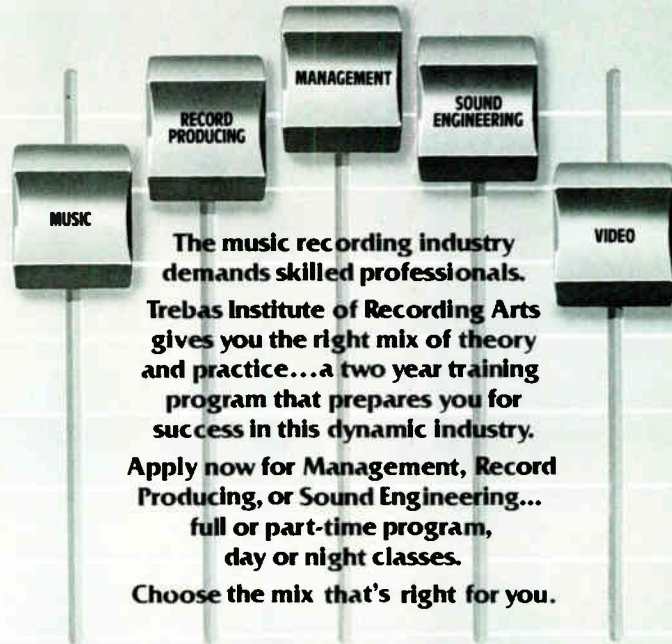
mixing consoles, amps,
 turntables, effects racks,
 multi-tracks, synthesizers,
 music stands, drum machines,
 keyboards, orchestras,
 d.j. consoles



Littlite/CAE, Inc.
 P.O. Box 430
 Hamburg, MI 48139
 313/231-9373

Circle #116 on Reader Service Card

The Right Mix



The music recording industry
 demands skilled professionals.
Trebas Institute of Recording Arts
 gives you the right mix of theory
 and practice...a two year training
 program that prepares you for
 success in this dynamic industry.
 Apply now for Management, Record
 Producing, or Sound Engineering...
 full or part-time program,
 day or night classes.
 Choose the mix that's right for you.



TREBAS INSTITUTE OF RECORDING ARTS
 "developing people for the music industry since 1979."

6602 Sunset Blvd.
 Los Angeles, CA
 USA 90028
 (213) 467-6800

34 West 8th Avenue
 Vancouver, B.C.
 Canada V5Y 1M7
 (604) 872-2666

410 Dundas St. East
 Toronto, Ontario
 Canada M5A 2A8
 (416) 966-3066

290 Nepean Street
 Ottawa, Ontario
 Canada K1R 5G3
 (613) 232-7104

1435 Bleury, #301
 Montreal, Quebec
 Canada H3A 2H7
 (514) 845-4141

Circle #148 on Reader Service Card

• NORTHWEST STUDIOS •

24 TRACK

•••• **AKASHIC RECORDING**
also **REMOTE RECORDING**
c/o AIC Pro Audio
1717 Solano Way #31, Concord, CA 94520
(415) 686-6493
Owner: Stephen Jarvis
Studio Manager: Stephen or Ron

•••• **AUDIO VISION STUDIOS**
74 E. Center, Lindon, UT 84062
(801) 785-0077
Owner: Sam A. Foster, Susan Foster
Studio Manager: Sam A. Foster



AVALANCHE RECORDING STUDIO, INC.
Northglenn, CO

•••• **AVALANCHE RECORDING STUDIO, INC.**
10650 Irma Dr. #27, Northglenn, CO 80233
(303) 452-0498
Owner: Avalanche Recording Studio, Inc.
Studio Manager: Linda Warman
Engineers: George Counnas, Harry Warman, Steve Forgy
Dimensions of Studios: 1000 sq. ft.; iso 1: 150 sq. ft.; iso 2: 150 sq. ft.
Dimensions of Control Rooms: 600 sq. ft.
Tape Recorders: Sony/MCI JH-24, 24 track; MCI JH-114, 16 track; Sony/MCI JH-110C, 4 track 1/2", 2 track 1/2"; 2 track 1/4"; Studer/Revox PR-99, 2 track 1/4"; Studer/Revox A-77, 2 track 1/4"; Sony PCM-701 w/JVC 3/4", 2 track (digital).
Mixing Consoles: Soundcraft 2400, 52 x 24.
Monitor Amplifiers: UREI 6500, Phase Linear 400, Haller, Technics.
Monitor Speakers: JBL 4430, JBL 4313, Tannoy SRM 12B, Auratone 5C.

Echo, Reverb & Delay Systems: Lexicon 224XL, Lexicon 200, Audi-ence RFS-2 plate, Lexicon 95, 92, 41, MXR.
Other Outboard Equipment: 949 Harmonizer, Roland stereo flanger, dbx 160, Symetrix CL100s, SG 200, SE 400, B&B parametric EQ, Aphex Aural Exciter.
Microphones: Neumann U47 FETs, U67, U48, U87s; AKG C414s, 451s; Sony C37As, C37P; Sennheiser 421s, 441; E-V RE20s; Beyers M260s; PZMs; Shure SM57s; RCA 44.
Instruments Available: Yamaha C7, DX7, TX816 w/computer; ARP Odyssey; Roland 909; Oberheim DX; '54 Telecaster; '65 P-Bass, Fender bass amp.
Video Equipment & Services: JVC CR6650U 3/4" video recorder; Panasonic CT 1930 19" color monitor; 3 transport Timeline synchronizer.
Rates: Upon request, rate card & color brochure.
Extras: Accommodation service for mountain retreats or Denver's best hotels w/transportation arrangements available. Less than an hour drive to Rocky Mountain serenity. Top studio musicians, producer, arrangers, and composers. Digital 2 track mastering and synchronizer lockup with any additional equipment available upon request.
Direction: To continue to offer our clients the best in state-of-the-art equipment, engineers, and personal service. Avalanche has a highly creative and comfortable atmosphere and total privacy. Denver's only 40-track facility w/video post-production.

•••• **AXE-TRAX**
650 Greenbrae Dr., Sparks, NV 89431
(702) 358-7484
Owner: Dr. Lawrence Davis
Studio Manager: Dr. Lawrence Davis



AYRE STUDIOS
San Jose, CA

•••• **AYRE STUDIOS**
458-A Reynolds Circle, San Jose, CA 95112
(408) 279-AYRE, 279-2973
Owner: Richard Nebel
Studio Manager: Richard Nebel & James Lewis
Engineers: Richard Nebel, James Lewis, Jeff Sterling, Tom Paddock; independent engineers encouraged.
Dimensions of Studios: 26 x 23 x 14 high; 34 x 23 x 20.
Dimensions of Control Rooms: 17 x 15 x 12 high.
Tape Recorders: MCI JH-114-24 w/Autolocator III, 24 & 16 track; Ampex AG-440B Servo, 2 track; Revox A77, 2 track; Scully 280, 2 track; Sony digital PCM 501 w/Beta Hi-fi & VHS VCRs; TEAC V-900X & Aiwa F990 cassette machines; Sony cassettes.

Mixing Consoles: MCI JH-636 Automated, 32 in x 28 out.
Monitor Amplifiers: The Power by Sumo (1600 watts); McIntosh 2205, Crowns, G.A.S.

Monitor Speakers: UREI 813-A Time Aligns, JBL 4311s, B&W LM-1s, Auratones, TOA 265 ME monitors, AKG 240 & Fostex headphones.

Echo, Reverb & Delay Systems: EMT stereo plate, live chamber, Lexicons, Eventide (all stereo outputs), (2) MXR DDLs (w/full memory), Roland Pro 555 chorus echo, tape echo, Roland digital reverb, Roland SDE 1000 DDL, DeltaLab DL-4, etc.

Other Outboard Equipment: (4) Valley People Dyna-Mites, EXR II & IV psychoacoustic exciters, Kepex, UREI LA-2As, LA-3A, LA-4; (4) RCA tube limiters; Inovonics 201 compressor/limiters; Eventide flanger & Omnipressor; ADL Vocal Stresser; Mutron Bi-Phase, Biamp 1/3-octave & octave graphic EQs; EMS signal processing synthesizer; (4) Pultec EQH-2 tube EQ; Pultec MEQ-3 & HLF 1-S tube EQs; & much more (anything with notice).

Microphones: Neumann U89s, U87s, U67s (tube), U48 (tube), U47s (tube & FET), (2) KM-253 tube, (2) SM-69 tube, KM-84s, (2) KM-54 tube mics; AKG C414-EBs, C-12s (tube), 452s, 451s; Sennheiser 421s, 441s; Shure SM-56s, 57s, 58s, 81s; Beyers M-500, M260, M69; Sony's; Altec/AKG tube mics; Countryman and much more.

Instruments Available: Chickering "Masterpiece" 7' grand piano; LinnDrum, ARP, Emu & EMS synthesizers; Gibson, Fender, Martin, Spectre & Rickenbacker guitars and basses; Marshall, Hiwatt, Fender, Vox & Gibson amps; (2) Sequential Circuits Prophet T-8; (2) Yamaha DX7; Oberheim Xpander; Simmons SDS-7 kit; Kawai upright grand piano; other instruments and devices on request.

Video Equipment & Services: Audio for video; sweetening; Proton monitor; VHS Hi-fi & Beta Hi-fi VCRs; complete packages arranged.

Rates: \$50 to \$75/hr. Block & lock-out discounts available. Please phone for quote.

Extras: Production, arranging, studio musicians. Pressing & video available. Free coffee and bottled water, refrigerator & lounge, deli w/games around corner. (Located 1 mile from San Jose airport, many hotels & 24-hour restaurants).

Direction: Ayre Studios, Northern California's first MCI Automated 24-track studio, now has the pleasure to offer you a very private, highly creative "One on One" alternative. Discover the difference. Ask Aldo Nova, Amsterdam, A.J. & the Delenders, Bo Diddley, Bill Gibson (Huey Lewis & the News), Bill Summers, Emu, Fever, Hot Ice, Humans, Kingston Trio, Pete Escovedo, Population R, Tsunami, Vis-a-Vis, Billy Hyatt Concept, Amaranth, Todd Rundgren, and so many more. The difference is in the Ayre!



THE BANQUET SOUND STUDIOS
Santa Rosa, CA

•••• **THE BANQUET SOUND STUDIOS**
540 E. Todd Rd., Suite B, Santa Rosa, CA 95407
(707) 585-1325
Owner: Warren Dennis
Studio Manager: Janet Stark-Krick
Engineers: Mark Lyon, Warren Dennis, Janet Stark-Krick, Denis Hulett; independents welcome.
Dimensions of Studios: Main studio: 24 x 15; isolation

booth #1: 12 x 9; isolation booth #2: 13 x 16; isolation booth #3: 10 x 8

Dimensions of Control Rooms: 16 x 18

Tape Recorders: MCI JH 16-24 w/Autolocator III, 24 track (also 16 track headblock); MCI JH-110A, 2 track; Otari 5050B, 2 track; Sony digital 2 track; Beta Hi-fi VCR SL-HF300, 501-ES PCM decoder; Aiwa F-990 cassette; (2) Aiwa 6900 cassettes.

Mixing Consoles: Amek Angela, 28 x 24 (with 62 input returns to mix, parametric EQ on 28 inputs, 4 stereo subgroups, 6 aux. sends/returns)

Monitor Amplifiers: (2) Nikko Alpha I's, 350W side, SAE Mark III, Harman-Kardon Citation 19, Crown D-60 (headphones), Symetrix HA-10 (headphones)

Monitor Speakers: JBL 4430 Bi-Radials, bi-amped and Sonipulse calibrated, JBL L-100s, Yamaha NS-10s, Visonik David 702s, Auratones. Headphones by AKG, Sennheiser, Sony and Fostex.

Echo, Reverb & Delay Systems: Lexicon digital reverb, Studio Technologies Ecoplate, Lexicon Prime Time, Lexicon Prime Time II, Eventide H-949 Harmonizer w/-de-glitch mod, Roland SDE 1000 DDL, Effectron 256, Effectron 1024

Other Outboard Equipment: (4) Valley People Dyna-Mites (compression, gating, limiting, keying), (3) UREI LA-4 compressors/limiters, Aphex Compellor, Aphex Aural Exciter, (4) GateX noise gates, Sony PSX6 direct drive turntable (quartz-lock, w/Stanton cartridge), Countryman and Sencam direct boxes, dbx 150 noise reduction.

Microphones: Full array of AKG, Neumann, Sennheiser, Sony, Beyers, Crown P2M, Electro-Voice, and Shure microphones.

Instruments Available: Yamaha CF9' concert grand piano, LinnDrum, Yamaha DX7 digital synthesizer, Gieeman Pentaphonic digital synthesizer, Ensoniq Mirage, Gibson Les Paul, Gibson Ripper Bass, Fender Strat w/EMG pickups, Mesa Boogie, Marshall amp w/full stack, Yamaha G-50 amp, Gretsch studio drum kit featuring Pearl B' snare, Peterson strobe tuner, misc. guitar effects, percussion instruments.

Rates: We have the best rates available for comparably equipped facilities in the entire Bay Area. All rates include a first engineer, all outboard gear & studio instruments. Special recording packages, block, and nite-owl rates available. Call for full-color brochure & rate card.

Extras: Pre-production room w/full array of synthesizers and LinnDrum. The Banquet Productions team for advertising and full jingle production. Discount luxury accommodations very close by. Scenic location w/plenty of parking. **Direction:** With numerous sonic improvements, a newly-acquired lounge area for the comfort & convenience of our clientele, an ever-increasing inventory of the best outboard gear, studio instruments, & microphones. The Banquet continues to expand its horizons on all frontiers. We deliver better product than competitors asking twice our rate, and in a sonic and visual environment that speaks to quality consciousness. Taste The Banquet Sound Studios.

●●●● BAYVIEW STUDIO

1368 So. 49th St., Richmond, CA 94804
(415) 237-4066

Owner: Stephen Suda, Robert Hall

Engineers: Tom Anderson, Jack Crymes

Dimensions of Studios: (A): 45 x 20 x 16; (B): 19 x 16 x 16.

Dimensions of Control Rooms: 14 x 18 x 8.

Tape Recorders: Studer A-800, 24 track; Ampex ATR 102, 2 track; Studer A-80 MkII RC, 2 track.

Mixing Consoles: Soundcraft TS-24 40 x 24.

Monitor Amplifiers: Heller 500s.

Monitor Speakers: John Meyer 833, Yamaha NS-10, JBL 4311, Auratone 5C, Ed Long MDM-4.

Echo, Reverb & Delay Systems: (2) EMT 140 stereo plates, Lexicon 224-X w/LARC.

Other Outboard Equipment: Eventide 949 Harmonizer, Lexicon Prime Time II, (3) UREI 1176, (2) UREI LA-4A, Teletronix LA-2A, dbx 161, (2) Valley People Dyna-Mites, (2) UREI #555 Bandpass filters, (2) Pultec MEQ-5, 8 Dolby 361.

Microphones: AKG 414EB, 414EB-P48, 451, 460, C-422 stereo; Neumann U87, KM84, U47 FET, M-49B; Crown P2M Electro-Voice RE-20; Shure SM 57, SM-7; Sennheiser 421 441; PML DC-73; Countryman Iso-max, direct boxes; Sony ECM-50.

Instruments Available: Yamaha C-7 acoustic piano, Gretsch and Yamaha "R" series & Simmons drums available by arrangement. Vintage Fender basses and guitars, Martin guitars, Gretsch guitars, old Fender amps, Ampeg B-15 bass amps also available by arrangement.

Rates: Please call for rates.

●●●● BEAR CREEK STUDIO & MUSIC PRODUCTION

6313 Maltby Rd., Woodinville, WA 98072
(206) 481-4100

Owner: Joe & Manny Hadlock

Studio Manager: Nancy Merklinghaus

Engineers: Joe Hadlock, Tim Killeen, Steve Heinke

Dimensions of Studios: 25 x 38 x 12

Dimensions of Control Rooms: 19 x 17.

Tape Recorders: MCI JH-114 (modified), 24 track; (2) Ampex ATR-100, 2 track; (2) Revox A-77, 2 track; (2) Revox B7M MkII, cassette.

Mixing Consoles: Trident TSM, 32 x 24.

Monitor Amplifiers: Custom EICO, McIntosh, Crown, BGW, Phase-Linear, Tapco.

Monitor Speakers: Custom Altec 4-way, Yamaha NS-10M, JBL 4333A, 4311, Auratone 5C.

Echo, Reverb & Delay Systems: AMS 15-80s, AMX chorus /keyboard interface, Lexicon 224, Lexicon Prime Time, Ecoplate II, Master-Room MR-2, MXR DDL.

Other Outboard Equipment: Dolby A (26 channels), modified LA-2, LA-3 & 1176 limiters; Trident stereo limiter, Scamp Rack w/gates, Autopan, and Autoflange; Aphex Aural Exciter; Orban and UREI parametrics; Orban D-ess; Kepex; Gain Brains.

Microphones: Telefunken, Neumann, AKG, Sennheiser, Milab, Sony, Electro-Voice, RCA, Crown, Shure.

Instruments Available: 1919 Steinway-B (seven foot), Emulator II, DX7, Prophet V, Oberheim DMX, Camco drums, Guild D-35, Music Man amp.

Video Equipment & Services: JVC 6650, Proton 600M, 3/4" video lock to 24 track.

Rates: \$100/hr, block and evening rates available.

●●●● BEAR WEST STUDIOS

915 Howard St., San Francisco, CA 94103
(415) 543-2125

Owner: Ross J. Winetsky

Studio Manager: Ross J. Winetsky

Engineers: Mark Needham, Vance Frost, Mark Sewasac, Ann Marie Scott, Amy Atchison, independents.

Dimensions of Studios: (A): 50 x 30 x 25 ceilings, (3) iso booths; (B): 30 x 20 x 15 ceilings, (1) iso booth.

Dimensions of Control Rooms: (A): 25 x 20; (B): 15 x 15.

Tape Recorders: MCI JH-114 w/autolocator, 24 track; Tascam w/dbx 70-8, 8 track; Otari w/autolocator, 8 track; TEAC A-7340S, 4 track; MCI 110A, 2 track; (2) Ampex 350, 2 track.

Mixing Consoles: (A): Sound Workshop Series 34, 28 input; (B): Soundcraft 400B.

Monitor Amplifiers: McIntosh, BGW, SAE, White

Monitor Speakers: JBL 4332, 1413, L100, Auratones

Echo, Reverb & Delay Systems: DeltaLab delays, Roland delay, Lexicon digital reverb, Lexicon 224XL, Lexicon 200, Lexicon PCM 41 & 42, Roland 3000 digital delay, live chamber, multi-track, MICMIX, MXR DDL, MXR doubler, flanger, Yamaha analog delay.

Other Outboard Equipment: UREI 1176 limiters, dbx compressors, dbx 165-A, Mini lock, (4) API 550 EQs, API 550 EQ, Furman parametrics, Symetrix noise gates.

Microphones: Neumann U67, U87, (2) KM54s; Shure SM-7; AKG D330, D310; Sennheiser; Beyers; E-V.

Instruments Available: Yamaha C3 grand piano, Yamaha DX7, Oberheim OB-8, Roland Planet S, Yamaha electric grand, Roland MSQ 7008 track digital sequencer, Simmons SDSV drums, Emulator II, Drumulator, Prophet 5.

Rates: Call for rates.

●●●● BINARY CODE

Sunnyvale, CA 94089
(408) 745-1571

Owner: Axis

Studio Manager: Pat Doran

Direction: Binary code is designed for the keyboardist/composer/producer requiring high-quality tracks for album, film, video, or multi-image projects. Our comprehensive state-of-the-art MIDI system enables our clients to maintain spontaneity and efficiency throughout the course of their work at the studio. We are striving to bring our commercial clients the latest sounds and music that are vital in today's commercial marketplace. Through the use of digital sampling techniques, wavesample modification, digital and analog synthesis, we can give our clients that extra edge needed to make their production the very best.

●●●● BONNEVILLE MEDIA COMMUNICATIONS

130 Social Hall Ave., Salt Lake City, UT 84111
Owner: Bonneville Media Communications

Studio Manager: Loren Ashcraft

●●●● C.D. PRESENTS/RECORDING

Formerly Rhythmic River Productions

250 H Napoleon St., San Francisco, CA 94124

(415) 285-3348

Owner: C.D. Presents, Ltd.

Engineers: Gary Mankin (chief), Gary Hobish, David Mighell, Ken Hunchesky

Dimensions of Studios: Approx. 1350 sq. ft. includes 10 x 12 x 14 iso booth and 7 x 5 airlock (wired for iso use). 12 1/2-foot ceilings.

Dimensions of Control Rooms: Approx. 200 sq. ft.

Tape Recorders: Studer A-80 MkIV, 24 transformerless; MCI JH-110B, 2 track; Otari 5050 BII, 2 track.

Mixing Consoles: MCI JH-636 automated, 30 x 24.

Monitor Amplifiers: Crown, Phase Linear.

Monitor Speakers: UREI 811A, Yamaha NS-10M, JBL 4301 & 4313, MDM-4, Realistic Minimus-7, Auratone.

Echo, Reverb & Delay Systems: Lexicon 200 & Yamaha Rev-7, digital reverbs, Lexicon Prime Time & PCM 42 DDLs, AKG BX-10/II reverb, A/DA stereo tapped delay, DeltaLab DL-4, Bel BD-80 sampling delay line.



C.D. PRESENTS/RECORDING
San Francisco, CA

Other Outboard Equipment: Dyna-Mites: Drawmer DS-201 gates; UREI LA-4; Scamp Rack w/gate, EQ & compressor; DeltaLab Harmonicomputer; Symetrix 501 compressor; Klark-Teknik DN-27 1/3-octave EQ, API 554 EQ, SMPL system SMPTE synchronizer, Aphex B Aural Exciter.

Microphones: Neumann U67 tube, U64 tube, U87; AKG C24 tube, C12A tube, C414EB, C460B, C451; E-V RE20, RE16, DS-35; Shure SM57, SM58, SM81, SM85; Beyers M88; Sony ECM-22P; Countryman DI boxes; P2Ms

Instruments Available: Emulator II w/Macintosh support package, 1929 Baldwin 7' grand piano, Yamaha DX7, Oberheim CB-8, LinnDrum, Roland MSQ-700 sequencer, Gainfield Electronics Minidoc.

Rates: Very reasonable. Please call.

Extras: Coffee; client lounge; sleeping accommodations for out-of-town clients; experienced Emulator II programmer.

Direction: C.D. Presents offers you an extraordinary facility at exceptionally reasonable rates: a huge, live recording space; 2 iso booths; a wide variety of keyboards (including the Emulator II Sampler); plenty of outboard toys, new and vintage tube microphones; automation and more. In addition, our parent company, C.D. Presents Records, can help the independent record maker with pressing and distribution. Check us out!

●●●● COAST RECORDERS

1340 Mission St., San Francisco, CA 94103
(415) 864-5200

Owner: D & M Ent.

Studio Manager: Steve Atkin

Engineers: Steve Atkin, Bob Lindner, Jim Hilson (chief eng.)

Dimensions of Studios: (A): 25 x 40; (B): 12 x 18; (D): 6 x 12.

Dimensions of Control Rooms: (A): 18 x 20; (B): 16 x 18; (D): 10 x 12; (Ioff): 14 x 14.

Tape Recorders: MCI 24, 16, 8, 4, 2 track; Ampex 8, 2, 1 track; 3M 16 track.

Mixing Consoles: MCI JH-428B automated, 28 x 24; Harrison 3624 automated, 36 x 24; API 1604, 16 x 4.

Monitor Amplifiers: UREI 6500, 6250, 6260, 6150.

Monitor Speakers: UREI 813, 811, 809.

Echo, Reverb & Delay Systems: EMT, Lexicon 224, MIC-MIX.

Other Outboard Equipment: Lexicon 1200 Time Compressor, UREI 1178, 1176LN, 537, 535; Orban de-esser, Drawmer noise gate, UREI digital metronomes, 30 channels Dolby.

Microphones: Neumann U87, KM-84; AKG 414, 451; E-V RE20; Shure SM56; Sennheiser 421.

Instruments Available: Steinway grand, celeste.

Video Equipment & Services: BTX 4600/4500 synchronizing system, JVC 8500-U VCR, BTX 4450 jam-sync general, 3 machine lock-up capability.

Rates: \$60 to \$100/hr.

Extras: Hi-speed open-reel and in-cassette duplicating. Total mailing service, phone patches in all studios.

Direction: The Bay Area leader in audio services for the advertising industry: total service except film & location.

●●●● COLORADO SOUND RECORDING

3100 W. 71st Ave., Westminster, CO 80030
(303) 430-8811

Owner: Kevin Clock

Studio Manager: Kevin Clock (ofc. mgr.), Renee Franklin.

Engineers: Kevin Clock

Dimensions of Studios: 650 sq. ft., 550 sq. ft.

Dimensions of Control Rooms: 450 sq. ft.

Tape Recorders: Ampex 1200, 16 x 24; Ampex ATR 104 W' / 1/2"; 2/4 track; 3M M79, 2 track; Technics 1500, 2 track.

Mixing Consoles: Trident TSM 24 x 24 x 2.

Monitor Amplifiers: UREI 6300, Yamaha, Crown, Peavey.

Monitor Speakers: UREI 813A, Yamaha NS-10, JBL 4311, Auratones.

—LISTING CONTINUED ON PAGE 154

AMPEX

MCI

3M

**REPLACEMENT
HEADS
RECORDER PARTS
REFURBISHMENT
REPAIRS**

800-553-8712

800-325-4243 N CA

**SPRAGUE
MAGNETICS
INC.**

**IN STOCK
IMMEDIATE
SHIPMENT**

818-994-6602

15759 STRATHERN STREET
VAN NUYS, CA 91406
TELEX: 754239

Circle #118 on Reader Service Card

RCA 
Test Tapes

A Sound Measure

- Cassettes
- Open Reel up to 1"
- Custom Formats

For a catalogue of standard test tapes or further information contact:

**RCA TEST TAPES
DEPT M
6550 E. 30th St.
Indianapolis, IN 46219
(317) 542-6427**

Circle #119 on Reader Service Card

• NORTHWEST STUDIOS •



—LISTING CONTINUED FROM PAGE 153



COLORADO SOUND RECORDING
Westminster, CO

Echo, Reverb & Delay Systems: AMS RMX 16 digital reverb, Lexicon 224, Ecopiale, Lexicon Prime Time, (2) DeltaLab 1024, DeltaLab Echotron, MXR.

Other Outboard Equipment: (2) UREI LA 3A, (2) UREI 1176, (2) UREI LA-4A, (2) Dyna-Mite Valley People, Ursa Major Space Station, Dynaflex noise reduction, (2) White 4400 EQs, Audioarts EQs, dbx de essers, Aphex Exciter, EXR Exciter, Omni-noise gates.

Microphones: Neumann U47 tube, (2) U47 FET, (3) U87, U89, (3) KM84, KM85, (4) AKG 414, (4) 451, (2) Sennheiser 421, (2) 441, (2) Shure SM61, (3) SM57, Wngh: microphone.

Instruments Available: Yamaha C7 grand piano, Yamaha DX7, Emulator II, DMX drum machine, Fender Rhodes, drum set.

Rates: \$75/hr or \$800/day.

•••• COLOR ZONE PRODUCTIONS

P.O. Box 1911, Novato, CA 94947
(415) 892-8027

Owner: Peter Gilford.

Studio Manager: Elissa Alford.

Engineers: Mikey Raskousky, Peter Gilford, other independents.

Dimensions of Studios: 9 x 12 iso

Dimensions of Control Rooms: 19 x 17

Tape Recorders: MCI JH-24 24 w/Autolocator III, 24 track, Otari 5050 B2, 1/2 track

Mixing Consoles: Soundcraft 1600 prod. series.

Monitor Amplifiers: AB series 900, Biamp TC-60.

Monitor Speakers: UREI 811A, JBL 4311B, Ed Long TA-2 near field, Auratones.

Echo, Reverb & Delay Systems: Lexicon 224X w/LARC, Orban 111B reverb, (3) DeltaLab Effects, Roland digital reverb.

Other Outboard Equipment: Valley People Dyna-Mite, Orban gated comp/limiter 424A, Orban 622B parametric EQ, Aphex Aura Exciter, Aphex Compellor, Apple IIe w/MIDI capability, MXR flanger/doubler, dbx 161 compressors.

Microphones: Sennheiser 421, 441, AKG C414, 452EB, B330BT, Sony ECM56F, 23F, Beyer 600, Neumann U87.

Instruments Available: Simmons SDS7, Roland GR-700 guitar synth, Yamaha DX7, Emulator II, Rhodes 73 key piano, Chroma synthesizer, E-mu Drumulator, Fender P-Bass, Fender London reverb amp, Martin acoustic guitars, Yamaha CE-20 synthesizer, Linn 9000, Super Jupiter, Roland JX8P.

Rates: Too low to print. We are negotiable.

Extras: Other independent engineers available on request. Direction: Primarily a post production/direct recording studio. We can accommodate live bands who are on a budget. Specially designed room ideal for mixing and overdubbing, vocals and keyboards.

•••• COMMERCIAL RECORDING HAWAII

333 Cooke St., Honolulu, HI 96813
(808) 536-5439

Owner: Commercial Recording, Inc.

Studio Manager: Donn V. Tyler

Engineers: Donn V. Tyler, Bob Bates, Rick Stanley

Dimensions of Studios: 12 x 18, 24 x 36.

Dimensions of Control Rooms: 12 x 18, 19 x 22.

Tape Recorders: Ampex MM1200, 16/24 track; (5) Ampex ATR100, 4/2/1 track; Magna-Tech Mag Film (16/35), 1/3 track; Tascam 58, 8 track.

Mixing Consoles: Tangent 3216, 28 x 28; Tascam M512, 12 x 8.

Monitor Amplifiers: Crown DC-300, 150, 75; Pioneer.

Monitor Speakers: JBL 4333A, JBL 4315, JBL 4310, Auratone 5C.

Echo, Reverb & Delay Systems: Lexicon 224, AKG BX-10, DeltaLab DL-2, Marshall Time Modulator, Loft 440, Eventide 910.

Other Outboard Equipment: Inovonics 201 limiter/comp., Orban 622B parametric EQs, Teletronix LA-2A limiter, Eventide Omnipressor, Orban 245E stereo synthesizer, Aphex Type II, (3) Orban 516E de-esser, (4) Omni Craft noise gates.

Microphones: (4) Neumann U87; (4) AKG C452EB, (2) C414EB, (4) D200E; (2) Sony C500, (2) C38; (4) Shure SM53, (2) SM57; (2) RCA 77DX; (2) Sennheiser MD421.

Instruments Available: Steinway M7 piano; "Honky Tonk" tack piano; Slingerland drum set.

Video Equipment & Services: Audio Kinetics "Q.Lock" synchronizer for interlock of JVC 3/4" VCR and 24, 16, 8, 4 & 2 track recorders, w/monitors in both studios.

Rates: \$50-\$150/hr.



COUGAR RUN/LAKE TAHOE
Incline Village, NV

•••• COUGAR RUN/LAKE TAHOE

P.O. Box 7418, Incline Village, NV 89450
(702) 832-7711

Owner: Cougar Run, Inc.

Studio Manager: Jody Everett Peterson, Sr.

Engineers: J. Peterson, J. Holloman, J. Nowland; (independents welcome)

Dimensions of Studios: 20 x 35 (Carl Yanchar/Lakeside Assoc. design/construction)

Dimensions of Control Rooms: 19 x 20

Tape Recorders: Studer A800 II, 24/16 track; MCI JH-16, 24/16 track; Studer A820, 1/2" & 1/4" 2 track; Sony PCM-701, 2 track.

Mixing Consoles: Neve 8108-48, 36 x 32

Monitor Amplifiers: Times One

Monitor Speakers: Custom TAD/Lakeside mains; Yamaha NS-10M near field.

Echo, Reverb & Delay Systems: Lexicon 224XL 8.2, Lexicon 224 4.1, EMT 140ST, AMS 16.

Other Outboard Equipment: AMS, UREI, Aphex, Neve, Lexicon, Publison, dbx, Fairchild, Teletronix.

Microphones: Excellent selection including vintage tube, Neumann & AKG, as well as Sanken and B&K.

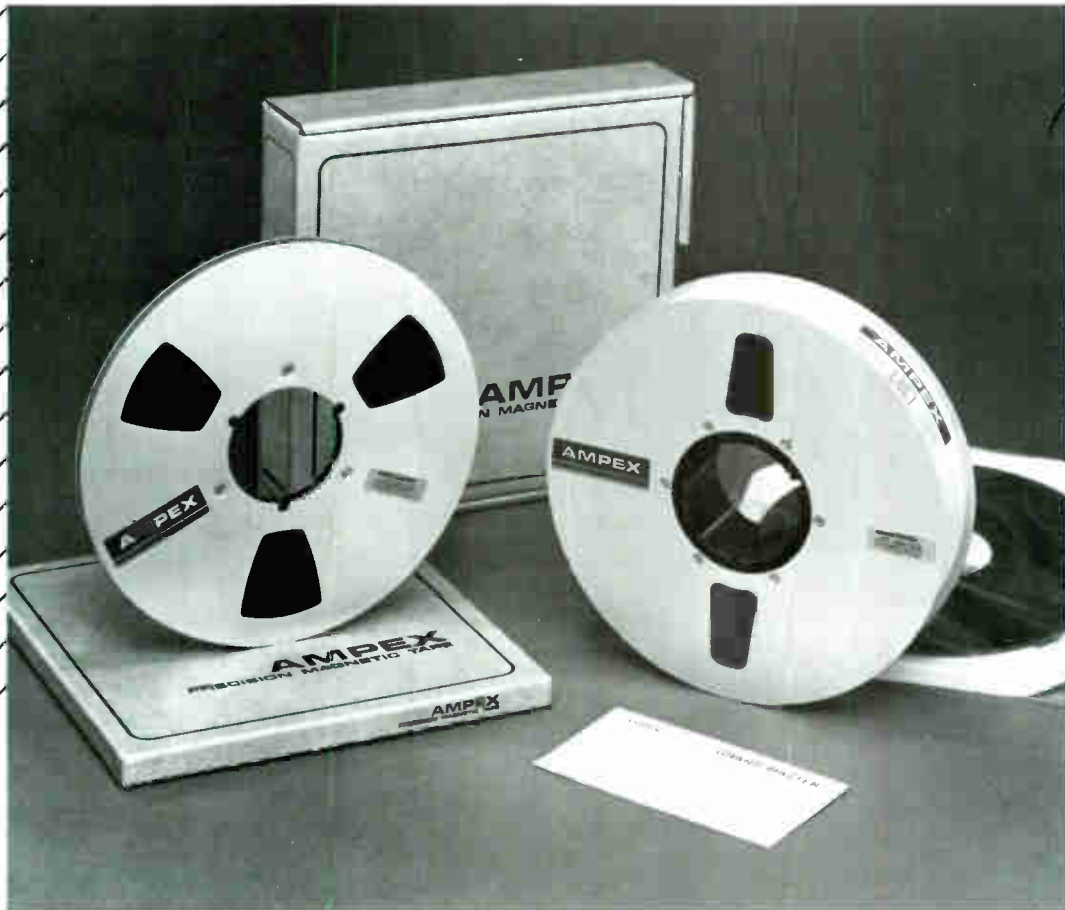
Instruments Available: Yamaha C-5 conservatory piano, DX7, various amps and guitars.

Video Equipment & Services: 3/4" JVC 850 & Lynx SMPTE synchronizer.

Rates: Available daily, weekly, monthly. Call Charlene Walte for details.

Extras: This is a private, 3-acre estate overlooking Lake Tahoe with immediate access to all the summer & winter recreation and activities here at Lake Tahoe. There is a year-round 90' heated swimming pool, hot tub, a year-round mountain brook & lots of woods to walk. A transparency with nature never before captured in a true world-class setting and facility. This is a place to stay and create—a recording artist's retreat.

SOUND GENESIS & AMPEX GRAND MASTER 456 TEN YEARS BETTER



For over ten years Sound Genesis and Ampex Grand Master 456 have been consistently serving the recording industry. Consistency you can count on, reel after reel, year after year.

sound genesis[®]

BEFORE YOU MAKE A SOUND, LISTEN TO US.

2001 BRYANT STREET • SAN FRANCISCO, CA 94110
415 285-8900 • 213 622 0212 • TWX 910372-7393

MONDAY THROUGH FRIDAY FROM 9:00 A.M. TO 5:00 P.M.

Circle #120 on Reader Service Card

World Radio History

●●●● CUSTOM RECORDING STUDIO
 2220 Broadridge Way, Stockton, CA 95207
 (209) 477-5130
 Owner: Dr. Thomas T. Chen, M.D.
 Studio Manager: Drew M. Palmer
 Engineers: Drew Palmer, John Edman, Dr. Tom Chen
 Dimensions of Studios: 32 x 30
 Dimensions of Control Rooms: 12 x 8
 Tape Recorders: Otari MTR-90, 24 track w/autolocator; Otari MTR-10, 2 track; 3M M56, 8 track w/autolocator; Ampex AG-351, 2 track; Otari MX-5050, 4 track; Otari high speed duplicator; Yamaha TC-1000 cassette; Tandberg TCD-330 cassette; Otari MTR-10, 2 track; JVC 8250 U video recorder with Time Line SMPTE synchronizer.
 Mixing Consoles: Sound Workshop automated Series 30, 28 in x 24 out; Interface Electronics, 8 in x 4 out.
 Monitor Amplifiers: Spectra Sonics Model 701, Crown D-60.
 Monitor Speakers: Ed Long's TA-3, MDM-4, Auratone, Community Light & Sound PBL studio monitors.
 Echo, Reverb & Delay Systems: AKG BX-20 reverb, Lexicon Model 224 digital reverb, Lexicon Model 102 stereo digital delay.
 Other Outboard Equipment: Allison Gain Brain, Eventide flanger, Eventide Harmonizer H910, Eventide Harmonizer H949, White Senes 4000 1/3-octave EQ, dbx noise reduction, Orban/Parasound stereo matrix, Orban Model 526A de-esser, Inovonics Model 200 limiter, UREI graphic EQ, ITI parametric EQ, Countryman phaser, EXR Exciter EX2, UREI 1178 dual peak limiter, Valley People Kepex II, Valley People MAXI-Q EQ.
 Microphones: AKG C451.E system including cardioid, omni, shotgun, D200, 414; E-V RE15, RE16, RE20; FRAP for wind instruments; MB 215, 301; microphone substitution devices; Neumann KM-48, U67, U47 FET; MN-421, MKH-405; Shure SM-58, SM57, SM-53, SM-60, SM-81; custom built guitar and drum microphones; Countryman direct boxes; P2M 130; AKG 414.
 Instruments Available: Steinway grand piano, Hammond B-3 organ w/Leslie, Oberheim eight voice synthesizer w/sequencer, Alembic bass cabinet, Oberheim studio amplifier, Fender Vibroverb amplifier w/JBL speakers, Fender Deluxe Reverb amplifier, Legend Rock "N" Roll guitar amplifier, Fender Precision Bass w/custom noiseless electronics, custom individually microphoned drum set, Ludwig drums, Paiste cymbals, Roto-Tom tympani, assorted percussion instruments, Hohner clavinet w/custom electronics, New England Digital Synclavier II w/computer terminal support, Oberheim DMX drum machine.
 Rates: 24 track, \$60/hr; 8 track, \$50/hr. (Block booking rates available.)

●●●● DESITREK STUDIOS
 3415 S.E. Hawthorne Blvd., Portland, OR 97214
 (503) 232-8606
 Owner: Michael Demmers, Douglas Durbrow
 Studio Manager: Michael Demmers
 Engineers: Michael Demmers, Douglas Durbrow
 Dimensions of Studios: (max. dimensions—floating floor, non-parallel walls) Main 36 x 18 x 10; drum: 15 1/2 x 11 x 9 1/2; isolation: 10 1/2 x 7 1/2 x 10
 Dimensions of Control Rooms: (max., floating, etc.) 18 1/2 x 14 x 8 1/2
 Tape Recorders: Studer A-80 MkIII (w/20 pos. Autolocator/options), 24 track; Ampex ATR-800, 2 track; Tascam 90-16, 16 track; Tascam 80-8, 8 track; Otari 5050B, 2 track.
 Mixing Consoles: Harrison Raven (w/automation), 28 x 24; custom effects sub-mixer, 12 x 6.
 Monitor Amplifiers: Yamaha, Crown, etc.
 Monitor Speakers: Sony, Fostex, Phase-Coherent, Altec, Auratones.
 Echo, Reverb & Delay Systems: Lexicon 224/4.4, (4) Ibanez DM2000 DDLs, Eventide Harmonizer and flanger, Orban 111B, etc.
 Other Outboard Equipment: 50 channels of dbx I noise reduction; Aphex 602B Exciter; Orban 526A; Crown VFX2A; Technics M-85 and SL1200 MkII; UREI LA-2 (tube), LA-4s, 537; Allison Gain Brain; dbx 118; Symetrix 522s; Biamp 270s; custom EQs and gates.
 Microphones: Neumann, Sennheiser, AKG, Sony, Shure, E-V.
 Instruments Available: Piano, synths, percussion, plus rentals of lots more from showcase music.
 Rates: Hourly, block or project rates available—please call.
 Extras: Lounge (w/monitors), music store next door, (2) restaurants across the street—more nearby. We offer rentals, talent, and record pressings to our clients at our cost (no mark-up). We have natural-sounding rooms, a friendly/relaxed atmosphere, and national-release quality masters We're "the musicians' choice."
 Direction: From demos to soundtracks to major-label LPs, we do it. Album credits include: (labels) Fantasy, Pausa, Kicking Mule, Green Linnet, Red Rum, Flying Heart, Nebula Circle, etc.; (artists) Tom Grant, Shock, Sieve Swanson, Z-100, Crazy B's, Gary Ogan, Kevin Burke, Sequel, Rockin' Razorbacks, The Shreds, The Esquires, and many more.

●●●● DIFFERENT FUR, LTD.
 3470 19th Street, San Francisco, CA 94110
 (415) 864-1967
 Owner: Howard Johnston, Susan Skaggs



DIFFERENT FUR, LTD.
 San Francisco, CA

Studio Manager: Susan Skaggs
 Engineers: (Chief eng.) Howard Johnston; (chief systems eng.) Tom Paddock; (assistant eng.) Scott Levitin, Mark Slagle, Alice J. Young
 Dimensions of Studios: 25 x 35 x 12 plus iso booths.
 Dimensions of Control Rooms: 17 x 21 x 12
 Tape Recorders: Studer A80 VU MkIII, 24 track; Studer A80 VU MkIII, 2 track (1/2" & 1/4"); MCI JH-110A, 2/4 track; (5) TEAC V-505X cassette decks.
 Mixing Consoles: Harrison modified for dual 32 track digital, model 4032, 35 x 32; Allison 65K automation.
 Monitor Amplifiers: Crown, BGW, Spectra Sonics, Phase Linear, Yamaha.
 Monitor Speakers: Westlake TM-1s, 604Es; JBL 4310s, 4311s; Auratones.
 Echo, Reverb & Delay Systems: Lexicon 224 digital reverb, Lexicon 224XL digital reverb, EMT 240 Gold FoI, Eventide digital delay, (2) Lexicon Prime Time, live echo chamber 17 x 10 x 10.
 Other Outboard Equipment: Dolby A 26 channels, Effects Kepex IIs, Gain Brain IIs, 1176s, LA-4As, Eventide Harmonizer, White 1/6 octave digital spectrum analyzer, digital metronome, MXR flanger.
 Microphones: Neumann U87s, U47, 269, stereo SM69, (2) 254s, KM84s; AKG 414s, 452s; Beyer; Sennheiser; Sony; E-V; Shure; etc. Many rare tube mikes available.
 Instruments Available: Yamaha C-7B grand piano, vocoder, Fender amplifiers.
 Rates: Telephone for rates, engineer availability, block booking and special demo rates.
 Extras: Copying facilities, sauna, shower, lounge w/kitchen, color TV.
 Direction: Custom service in a state-of-the-art studio designed by John Storyk of Sugarloaf View. Offering both analog and digital recording capabilities. Complete seclusion in a very private atmosphere for musician, producer and manager. Media voice-over and jingle record. Recent clients include Windham Hill, Concord Jazz, George Winston, Patrick Gleeson, Walt Disney Corp., Palo Alto Records, Bobby McFerrin, Linda Tillery.

●●●● DNA PRODUCTIONS
 4034 N.E. 195th, Seattle WA 98155
 (206) 364-5333
 Owner: David Winton Thompson III
 Studio Manager: Keith Medley
 Engineers: David Thompson (chief), Keith Medley (asst.)
 Dimensions of Studios: 900 sq. ft.
 Dimensions of Control Rooms: 750 sq. ft.
 Tape Recorders: Otari MTR-90, 24 track; Otari MTR-10 1/2", 4 track or 2 track supermastering; Otari MTR-10 1/4", 2 track



DNA PRODUCTIONS
 Seattle, WA

Mixing Consoles: Sound Workshop Series 40, 36 x 32 (fully automated with built in high resolution LED spectrum analyzer).
 Monitor Amplifiers: Crown, UREI, Symetrix.
 Monitor Speakers: JBL 4435 and 4312, Yamaha NS-10M, Auratone.
 Echo, Reverb & Delay Systems: Lexicon 224XL w/LARC, Super Prime Time, PCM60, PCM42 w/memory option; Eventide H949 Harmonizer; DeltaLab Effectron.
 Other Outboard Equipment: UREI 1176 peak limiters, UREI LA-4 compressor/limiters, dbx 165, dbx 180 noise reduction, EXR Exciter, Vocal Stresser/compressor, Kepex II noise gates, Orban stereo EQ, Eventide time squeeze, Orban de-esser.
 Microphones: Neumann, AKG, E-V, Shure, Fostex, Fender.
 Instruments Available: Yamaha grand piano, studio drums, Fender amp, many guitars and basses. Access to any instrument.
 Video Equipment & Services: BTX Shadow & controller, SMPTE time code reader, generator, JVC 1/4" video recorder, 25" high resolution monitor.
 Rates: Call.

●●●● DOLPHIN SOUND
 also REMOTE RECORDING
 150-B Puuuhale Rd., Honolulu, HI 96819
 (808) 847-3253
 Owner: KHNL/Mic Pacific Television Association
 Studio Manager: Ron Klohs

●●●● DORADO RECORDING
 P.O. Box 2445, Berkeley, CA 94702
 (415) 652-1076



PHIL EDWARDS RECORDING
 Hayward, CA

●●●● PHIL EDWARDS RECORDING
 only REMOTE RECORDING
 1522 W. Winton Ave., Hayward, CA 94545
 (415) 784-1971
 Owner: Phil Edwards
 Studio Manager: Phil Edwards
 Engineers: Phil Edwards, Phil De Lancie, Ron Davis
 Dimensions of Control Rooms: 21 x 8 x 8
 Tape Recorders: (2) 3M 79, 24 track; (2) 3M 79, 16 track; (2) Ampex AG 440C, 2 track; MCI 110B, 2 track.

FANE STUDIOS/SANTA CRUZ



**Automated 24 Track Recording
Comfortable Creative Atmosphere**

**Fane Productions
115-B Harvey West Blvd.
Santa Cruz, CA 95060
(408) 425-0152**

Circle #121 on Reader Service Card

Mixing Consoles: API/Demedio 4024, 40 x 24.
Monitor Amplifiers: McIntosh 2100s, Crown DC-300A.
Monitor Speakers: UREI 811B, Auratones.
Echo, Reverb & Delay Systems: PCM60, EMT 140 ST
Other Outboard Equipment: UREI 1176LN and LA-3A limiters; Orban 621 parametric EQ, 516 de-esser; Adams-Smith 605B three machine synchronizer; Dolby noise reduction; ITC three deck cart machine; various Sony and Aiwa cassette machines.
Microphones: Neumann U87s, U47s, KM84s; AKG 414s, 451s; Shure SM56s, SM58s, SM87s; Electro-Voice RE15s, 1761s; Sennheiser 421s; Sony ECM 22Ps; RCA 77DXs; Countryman FET 85 direct boxes.
Video Equipment & Services: Sony KX 1901 video monitor, Sony Trinicon 2200 color camera, sweetening for video.
Rates: Rates tailored to your project. Please call for estimate.
Extras: Remote unit features a 21 x 8 x 8 working area, air conditioned, cushioned on air suspension system; lift gate. Dual 24 and 16 track synchronized capability. Redundant power supplies. Over 80 microphones on board. 27 pair snakes and splits. Producer's mobile cellular telephone.
Direction: Complete packages for record production, video and radio broadcast taping, film and commercial production. Simultaneous record and broadcast packaging a specialty. Experienced crew. Credits include: Concord Jazz, Krage & Co., Edwin & Walter Hawkins, live broadcasts for KJAZ, KKGO, Tokyo Broadcasting, Swedish Radio. Video shoots for KPIX, NPR, KQED, KRON. Call for rates and brochure.

◆◆◆ E.T. RECORDERS
3013 Shoemaker Ave., Modesto, CA 95351
(209) 579-1123
Owner: Fred Eichel
Studio Manager: Fred Eichel



FANE PRODUCTIONS
Santa Cruz, CA

◆◆◆ FANE PRODUCTIONS
115-B Harvey West Blvd., Santa Cruz, CA 95060
(408) 425-0152
Owner: Fane Productions Inc.
Studio Manager: Helen Hovey
Engineers: Fane Opperman, David Gibson, Vince Sanchez, Pete Carlson
Dimensions of Studios: 30 x 20 x 16, vocal iso booth.
Dimensions of Control Rooms: 29 x 12.
Tape Recorders: MCI JH-16 transformerless, 24 & 16 track; MCI JH-110B transformerless, 2 track; Otari MX5050, 2 track; Tascam 80-8, 8 track; Tascam 25-2, 2 track; Sony & Aiwa cassette decks.
Mixing Consoles: MCI JH-636 transformerless, 32 x 24 w/automation.
Monitor Amplifiers: Yamahas, Crown, Biamp.
Monitor Speakers: Tannoy Berkeleys, Yamaha NS-10, JBL 4311, MDM-4s, Auratones.
Echo, Reverb & Delay Systems: Lexicon 224 digital reverb, Yamaha digital reverb, ART 01A digital reverb, Ursa Major SST digital reverb, Orban 111B reverb, Eventide Harmonizer and DDL, DeltaLab DL4 digital delay, DeltaLab DL2, Acousticcomputer digital delay, DeltaLab Effectron 1034 digital delay, MXR pitch transposer, Ibanez analog delay & multi-flanger.
Other Outboard Equipment: 34 channels dbx noise reduction, Aphex Aural Exciter, EXR Exciter, dbx compressors, UREI limiters, Symetrix compressors/de-essers, OmniCraft, Symetrix and dbx noise gates, White, MXR & UREI 1/3-octave graphic & parametric EQs.
Microphones: Neumann, AKG, Sennheiser, RCA, E-V, Beyer, Sony, PZM, Shure and Countryman.
Instruments Available: Yamaha grand piano, Hammond B-3 organ w/Leslie, Linn Sequencer, E-mu SP-12 sampler/drum machine, Drumulator, Prophet V w/MIDI, Yamaha DX7, Polymoog, Micromoog, Roland sequencer, Wurliizer

—LISTING CONTINUED ON PAGE 158

When Quality Counts
E X P E R I E N C E
Makes The Difference

Disc Mastering Record Pressing Jacket Printing

"... There is human life at Sonic Arts. They gave me the personal service and quality product I was looking for, no attitude, no B.S., just great sounds."

Alex Guinness

Alex Guinness & the Worlds Records

The Mastering Room

(415) 957-9471 — TELEX: 476-123

665 Harrison Street San Francisco, CA 94107

Circle #122 on Reader Service Card

—LISTING CONTINUED FROM PAGE 157

electric piano, Fender and Marshall guitar amps/speakers, Fender Stratocaster, Fender P-bass, Guild jumbo 12-string, Ludwig 6-piece drum set w/timbales & Syndrum, E-drums, many Latin percussion instruments.

Rates: Please call for rates. Special discounts available for lock-outs, block booking and moonlight recording.

Extras: Studio musicians, arrangers and jingle writers are available.

Direction: Fane Productions offers automated 24 track transformerless MCI recording at excellent rates in sunny Santa Cruz. Over the past several years we have been one of the busiest studios in the Bay Area. Whether it's an album, demo or jingle—we have pride in the quality of our studio and staff. Clients include: Eddie and the Tide, Pat Simmons Band, Lacy J. Dalton, George Winston, Bob Brozman, Haile Maskel, and Northwind.



35; (D): 30 x 50 w/18 x 30 string room.
Tape Recorders: Analog: Studer A-800, 24 track; Studer A-80, 1/4" & 1/2", 2 track; MCI 110C, 4/8 track. Digital: Mitsubishi X-850, 32 track; Mitsubishi X-80, 2 track; Mitsubishi X-80A, 2 track.
Mixing Consoles: Neve 8108, 56 x 48; Neve 8108, 40 x 32;

◆◆◆ FANTASY STUDIOS

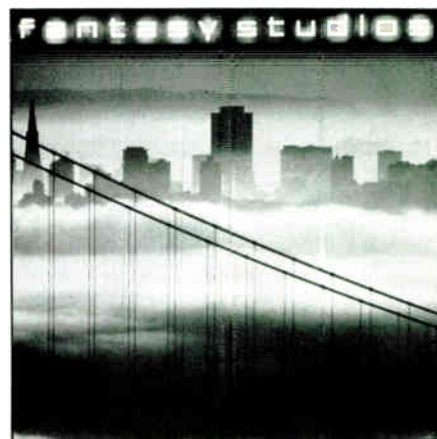
10th and Parker Streets, Berkeley, CA 94710
 (415) 549-2500

Owner: Fantasy Records

Studio Manager: Nina (Urban) Bombardier, Roy Segal

Engineers: Danny Kopelson, Stephen Hart, Dave Luke, Tom Size.

Dimensions of Studios: (A): 30 x 50; (B): 20 x 27; (C): 27 x



FANTASY STUDIOS
 Berkeley, CA

Neve 8108, 32 x 24; Trident Series 80, 32 x 24 x 32.
Monitor Amplifiers: Crown & McIntosh.
Monitor Speakers: Sierra-Hidley, UREI Time Aligned, Yamaha NS-10s, Auratones, Viscniks, MDMs, JBL 4311s.
Echo, Reverb & Delay Systems: Live chambers, EMT-140s, Ecoplate, AMS, EMT-250, Lexicon 224XL, Lexicon 200, PCM60.
Other Outboard Equipment: Bel DDL, Eventide Harmonizer 949 & 910, Eventide DDL, Lexicon PrimeTime, Dyna-Mite gates, Drawmer gates, Lexicon PCM42 DDL, Space Station, ADR complex limiter, ADR vocal stresser, MXR phaser, Scamp Rack, Orban de-esser, dbx 160 limiters, and much more.
Microphones: 164 mics—ribbon, dynamic, condenser, and PZM.
Instruments Available: Pianos, Hammond B-3 organ, guitar amps.
Video Equipment & Services: Video sweetening, video transfers: 1/4" to VHS or Beta 1/2", SMPTE code, window dubs, etc. Q.Lock synch, (3) machine lockup to 1/4" U-matic video, JVC 8200 and BVU 800.
Rates: Call Nina, Andrea or Rob.

Puzzled by Audio/Video/MIDI Sync Lock? It's SMPL™

Yesterday it took lots of money and hassle to implement a truly contemporary Audio for Video Studio.

You needed a box to lock a Video transport to the Audio. And boxes to autolocate the Audio and Video transports. And a box to lock and locate the "virtual" MIDI tracks. And more boxes to convert the sync your sequencer likes to the kind your drum set favors.

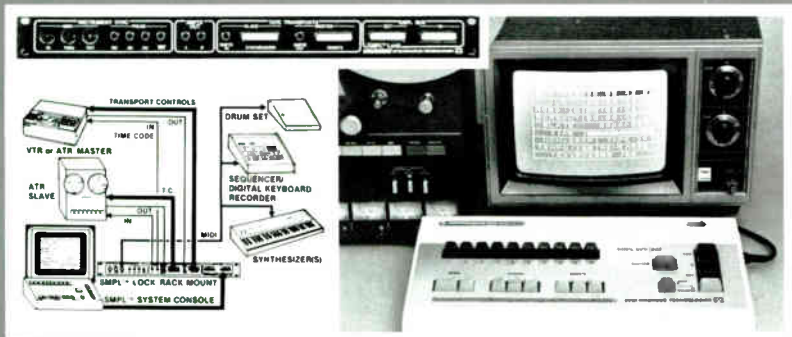
And an Engineering Degree to tie it all together and work it, and a very friendly banker to help pay for it.

But, today, Sync Tech's SMPL System performs all of these functions and MORE. In one easy to use, low cost package you get a complete Audio editing, Video lock-up, Instrument syncing system that includes:

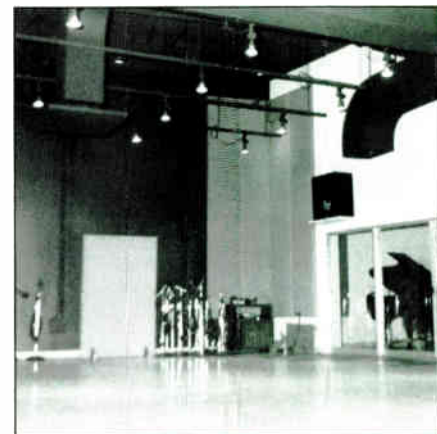
- Two machine (Audio or Video) Sync Lock
- 10 point autolocator for both transports.
- MIDI Sync/Autolocate
- 24, 48, 96 Tick/Beat instrument sync
- Automatic Punch In/Out
- DF, NDF, 25 F/S, 24 F/S SMPTE Time Code Generator
- 8 programmable EVENT gates
- Transport remote controls

Best of all, the SMPL System is for real — no "gotchas". Works with equipment from every major manufacturer from inexpensive Portable Studios to 2" transports, even consumer quality VCRs.

For more information and the name of the nearest dealer who can SMPLify your life, call or write:



SYNCHRONOUS TECHNOLOGIES
 P.O. Box 14467 • 1020 W. Wilshire Blvd. • Okla. City, OK 73113 • (405) 842-0680



FTM STUDIOS
 Denver, CO

◆◆◆ FTM STUDIOS
 also REMOTE RECORDING
 1111 S. Pierce St., Denver, CO 80226
 (303) 922-3330

Owner: John & Diane Sundberg
 Studio Manager: John Sundberg
 Engineers: Jeff Shuey, Michael Pfeiffer, John Sundberg
 Dimensions of Studios: (A) 2200 sq. ft. w/5 isos; (B): 1500 sq. ft. w/4 isos; (C) 550 sq. ft. w/1 iso.

Dimensions of Control Rooms: (A) 550 sq. ft.; (B): 450 sq. ft.; (C): 350 sq. ft.

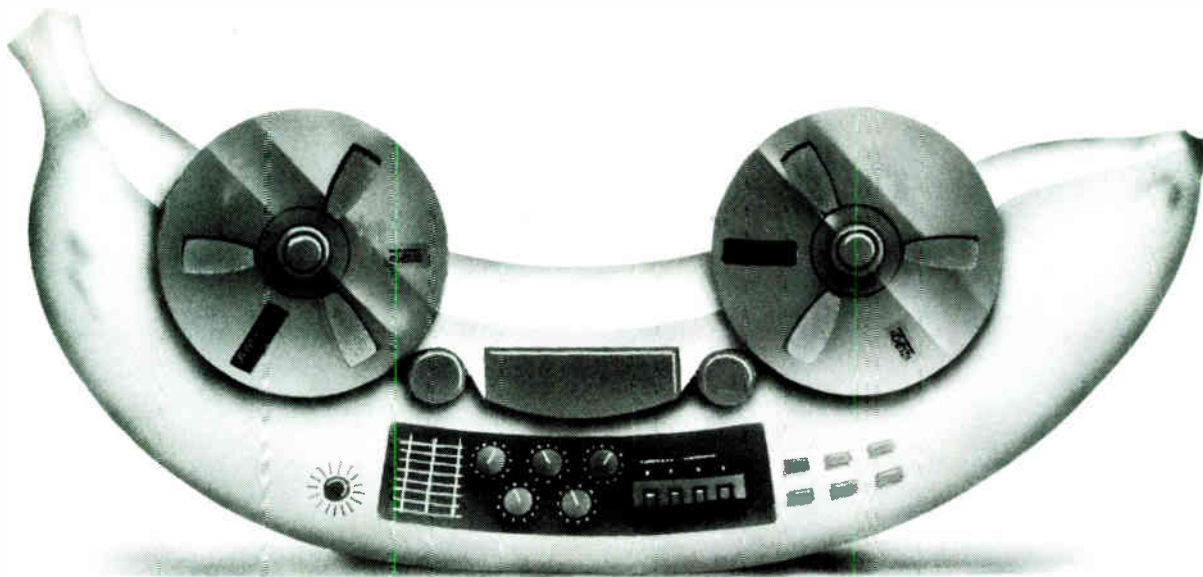
Tape Recorders: Otari MTR-90 w/autolocator, 24 tracks; (2) Soundcraft 760 w/autolocator, 24 track; Otari MTR-10 1/2", 2 track; (2) Otari MRK III 1/4", 2 track; Otari MRK III 1/2", 4 track; (2) Ampex ATR 700 1/4", 2 track; Tascam Series 70 1/2", 4 track; Tascam 80-8 1/2", 8 track; Otari 5050B 1/2", 4 track.

Mixing Consoles: (A) Soundcraft 2400, 28 x 24; (B) Soundcraft 2400, 24 x 24; (C) Tascam 15, 24 x 8.
Monitor Amplifiers: Crown Delta Omega, (8) Hafler 500s; Crown 300D; Crown 150D; Crest 3501.

Monitor Speakers: UREI 812B, E-V 500. Yamaha SP10, Auratones, Tannoy 12B, Tannoy 10B, E-V 100.
Echo, Reverb & Delay Systems: EMT 140, Audi-ence plate,

—LISTING CONTINUED ON PAGE 160

Circle #123 on Reader Service Card



BANANAS AND AMPEX:

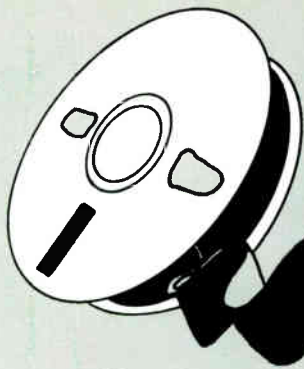
After ten years, hundreds of installations and countless tape recorders set up and sold, the folks at Bananas still recommend Ampex tape for every audio application.

No other tape offers you the consistency and quality reel after reel, and no other tape is as easy to get your hands on. When you're working on a recording project the last thing you want to worry about is tape.

We're committed to making it easy for musicians to make music. So is Ampex.



Audio/Musical Co.
802 Fourth Street
San Rafael, CA 94122
415-457-7600



When the tape runs out,
call United Tape Company

Manufacturers of BASF Custom-Length
Chrome Cassettes

Authorized Distributor of:

AMPEX Blank Recording Tape
SCOTCH/3M Blank Recording Tape
BASF Calibration Cassettes
CAPITOL Audiopak Carts
TDK Blank Recording Tape
TEAC/TASCAM Accessories
DISCWASHER Accessories



10746 Magnolia
North Hollywood, CA 91601 ☐ (818) 980-6700

Call for our free 40-page catalog

Circle #125 on Reader Service Card

Do you qualify to vote for the GRAMMY AWARDS?

- Have you
- written, arranged, engineered or performed on 6 or more commercially-released recordings?
 - produced 6 or more singles or tracks?
 - contributed to the creation of cover designs or liner notes for 6 albums?
 - written 6 recorded songs or 1 song recorded 6 times?

Then you may qualify for membership in THE RECORDING ACADEMY

The Recording Industry Needs the Academy — The Academy Needs You. Needs your skills, experience and wisdom to help further the goals of:

- Fostering creative leadership in the field.
- Advancing the recording arts and sciences.
- Formally recognizing artistic achievements.

IF YOU QUALIFY Call the San Francisco Chapter office (415) 777-4633 for a membership application or mail the coupon below without delay.

Mail to: Membership Dept., San Francisco Chapter, **National Academy of Recording Arts & Sciences**, 829 Folsom Street, San Francisco, CA 94107

Please send a membership application to:

NAME _____
ADDRESS _____
CITY _____
STATE _____ ZIP _____
TELEPHONE (_____) _____

• NORTHWEST STUDIOS •

24
TRACK

—LISTING CONTINUED FROM PAGE 158

Quantec QRS, (2) Lexicon 200 w/6 programs, AKG BX10, (2) Scamp stereo, (2) Lexicon Prime Time II, Lexicon Prime Time, (3) DeltaLab, E-V 949 & 910 Harmonizers, (2) Effectron II 1024s, MXR pitch transposer, DL-5 pitch transposer, Ursa Major Space Station.

Other Outboard Equipment: GateX, Scamp; (4) limiter/compressors, (4) expander gates, (4) noise gates, Automatic Panner, (2) parametric EQs; (4) Symetrix 501 limiters; (8) Biamp limiters; (3) dbx 161, (2) 160X, 162; (2) Aphex; Orban stereo parametric EQs, (3) de-essers; UREI LE5, 1176; Valley People Dyna-Mite gates; (2) MXR 1/3-octave EQs.

Microphones: AKG C-24, 422, 414; Neumann U87, KM86, KM84, U47; Shure SM81, SM85, SM57; E-V RE20, RE15, RE10, RE16, RE11; Sennheiser 421, 431; Countryman Pressure Zone.

Instruments Available: Kawai T grand piano, Kawai US 50, Oberheim OB-Xa, DMX, DSX, Kurzweil w/sampling, Rhodes, Korg C-30 organ, ARP Odyssey.

Video Equipment & Services: Audio-Kinetics Q.Lock, NEC 25" high-resolution color monitor.

Rates: (A): \$65 w/eng.; (B): \$40 w/eng.; (C): \$15 w/eng.

Extras: Large lounge w/big screen TV, kitchen and meal table. High ceilinged conference room for practice and relaxing. All rooms acoustically designed. Construction from the ground up. Studios A & B with RPG diffusers on rear walls. Real-time cassette duplication. One of the nation's finest studios.

Direction: Located on the west side of Denver. Near summer mountain activities and winter skiing.

•••• GRAMMIE'S HOUSE

1515 Plumas, Reno, NV 89509

(702) 786-2622

Owner: Robert Forman

Studio Manager: Robert Forman



HALLMARK RECORDING
So. Lake Tahoe, CA

•••• HALLMARK RECORDING

P.O. Box 10492, So. Lake Tahoe, CA 95731

(916) 577-4073

Owner: Steve Hallmark

Studio Manager: Steve Hallmark

Engineers: Steve Hallmark, Michael Gandsey

Dimensions of Studios: 5 x 7 booth, 10 x 12 & 10 x 20.

Dimensions of Control Rooms: 9 x 13.

Tape Recorders: Soundcraft 760 MkIII, 24 track; Otari MX5050 B, 2 track; Aiwa 6900, cassette; Technics M222, cassette to cassette; Yamaha C200, cassette.

Mixing Consoles: Soundcraft 2400, 28 x 24 x 24 mon. (52 in./mix position).

Monitor Amplifiers: AB Systems precedent series 600.

Crown D-150A series III, Crown D-60, Symetrix A-220 (head-phones).

Monitor Speakers: JBL 4411, Yamaha NS-10M, Auratone 5C, Fostex 6301.

Echo, Reverb & Delay Systems: Lexicon PCM 60, (2) ART 01-A, Brick plate reverb, (2) Roland SDE-3000 DDLs, (2) ADA 1280 DDLs, Yamaha Rev 7 digital reverb.

Other Outboard Equipment: (2) Symetrix 522 2 channel comp/lim/gate, Aphex Compellor, Aphex Aural Exciter "Type B," Barcus Berry 202R differential reactive load compensator, Rane SM-26 mixer.

Microphones: AKG, Sony, Sennheiser, Electro-Voice, Shure. **Instruments Available:** Emulator II w/all current software updates, incl. SMPTE, sequencer, etc. Plus over 100 disks of software, Yamaha DX7, Roland Jupiter-6, Korg EX-800 (8 voice expander), Apple IIE w/Passport MIDI-8 sequencing, Ibanez electric guitar & bass, Washburn acoustic guitar, Yamaha CP-70 electric grand, Yamaha G100-212III amp.

Rates: Available upon request.

◆◆◆ HAPPY TRACKS RECORDING

P.O. Box 398, Belmont, CA 94002

(415) 595-4666

Owner: John Hahold

Studio Manager: Doug Dayson, Doug McVay

◆◆◆ HART PRODUCTIONS

300 Lincoln Village Cir. #212, Larkspur, CA 94939

(415) 461-4725

Owner: Stephen Hart

Studio Manager: Stephen Hart



JOE HOFFMANN STUDIOS
Occidental, CA

◆◆◆ JOE HOFFMANN STUDIOS

also REMOTE RECORDING

P.O. Box 840, Occidental, CA 95465

(707) 874-2278

Owner: Joe & Barbara Hoffmann

Studio Manager: Barbara Hoffmann

Engineers: Joe Hoffmann, Randy Quan

Dimensions of Studios: Main room: 23 x 26 skewed; drum/ isolation booth: 10 x 14 skewed.

Dimensions of Control Rooms: 16 x 21 skewed.

Tape Recorders: Otari MTR90 16/24 track; Otari MX5050 MkIII-8, 8 track; TEAC 3340S, 4 track; (2) Otari MX5050B, 2 track; Akai GX-F71, cassette; (5) TEAC cassettes for R.T. dups.; digital CD mastering

Mixing Consoles: NEOTEK Series II, 28 x 24; Ramsa 8210A, 10 x 4.

Monitor Amplifiers: Peavey DECA 700, Carver 1200, JBL 660, Rane HC-6 (cue).

Monitor Speakers: KEF Model 105 Series II phase coherent; Yamaha NS-10s, Auratones.

Echo, Reverb & Delay Systems: Lexicon 200 digital reverb, MICMIX XL-305 acoustic chamber synthesizer, Roland SDE-1000 digital delay, DL-2 digital delay, MXR flanger-doubler.

Other Outboard Equipment: Symetrix 522 (5 function stereo); Symetrix SG200 stereo gate; (2) Kepex; (2) Gain Brains; (2) Symetrix 501 comp/limiter; (2) UREI LA-4 comp/limiter; (2) Phase Linear E51 parametrics; 10 channel dbx 150; 4 channel Dolby C; Technics SL 1200 MkII; Shure V15 Type 5 cartridge; BBE processor.

Microphones: AKG, Audio-Technica, Beyer, Countryman, E-V, Sennheiser, Shure, Sony, Tascam.

Instruments Available: 9' Steinway concert grand, Tama 5-piece Super Star drum kit w/Zildjian cymbals.

Rates: Very reasonable. Please call for schedule and discounts.

Extras: The owner designed and built the studio, from the ground up, using state-of-the-art concepts. It's located in a gorgeous rural setting near the Russian River resort area.

Skylights: A large picture window provide plenty of natural light. The studio, including lounge, is completely air conditioned and wheelchair accessible.

Direction: Complete production capabilities: albums, demos, video soundtracks, in-house commercial production, radio drama, musicals... Acoustic music is a specialty with our variable acoustics. We offer sensitive, professional engineering in a good feeling environment. Recent credit: 1985 Windham Hill Piano Sampler work. Any project that celebrates life or aims to help people feel more like one family here on earth, is greatly admired.



THE HYDE STREET STUDIOS
San Francisco, CA

◆◆◆ THE HYDE STREET STUDIOS

also REMOTE RECORDING

245 Hyde Street, San Francisco, CA 94102

(415) 441-8934

Owner: Michael Werd

Studio Manager: Les Stuck

Engineers: Garry Creiman, John Curiberti, Ricky Lee Lyard, Brian Risner, Les Stuck, Joe Tarantino, Richard Van Dorn, Mark Willner

Dimensions of Studios: (A): 39 x 21; (D): 31 x 20.

Dimensions of Control Rooms: (A) 20 x 18; (D): 20 x 18.

Tape Recorders: Otari MTR 90-II (w/autolocate), 24/16 track; 3M M-79 (w/autolocate), 16 track; Otari MTR 10 1/4" 2 track; Otari MTR-12 1/2", 2 track; (2) Otari MX 5050B, 2 track. **Mixing Consoles:** Trident B Rangr, 40 x 8 x 24; Heiles custom, 28 x 16 x 24.

Monitor Amplifiers: Hafler, Soundcraftsmen, Crown, McIntosh.

Monitor Speakers: UREI 813, 815; Yamaha NS-10M.

Echo, Reverb & Delay Systems: AMS RMX-16, acoustic chamber, Yamaha REV-7 (digital reverb w/MIDI), Lexicon PCM60, PCM41, PCM42, Eventide 949 Harmonizer, Delta-Lab DL-2, DL-4.

Other Outboard Equipment: (4) Drawmer noise gates, (5) Dyna-Mite, Teletnix LA-2A, (4) ADR F760 compressors, (2) UREI 1176LN, ADR Vocal Stressor, (2) UREI 546 stereo parametric EQ, (2) Furman parametric, (2) White ten-band EQ, Klark-Teknik 1/3-octave room EQ in both rooms.

Microphones: Neumann: M49, U47 (tube w/omni-capstyle), U67, U87, KM54, J64, M269. Also AKG, Sennheiser, Beyer, Shure, Crown PZM, etc. Countryman direct boxes.

Instruments Available: Steinway '4' concert grand piano, Knabe baby grand piano, Hammond B-3 organ w/Leslie, Ampeg B-18 amp, Music Man amp, Rogers drum kit and percussion.

Rates: Please call for rates.

Extras: Peet's coffee. Diverse engineering staff. Large rooms.

Direction: Take 101 north towards the Golden Gate Bridge. Get off at Franklin Street, one-way north. Turn right at Eddy, then 4 blocks later turn right at Hyde.

◆◆◆ INDEPENDENT SOUND

San Francisco, CA 94115

(415) 929-8085

Owner: Peter Buffett, Mary Buffett

Studio Manager: Peter & Mary Buffett

Engineers: Peter Buffett

Dimensions of Studios: 13 x 12.

Dimensions of Control Rooms: 17 x 10.

Tape Recorders: Otari: MTR-90II, 24 track; Otari MTR-12, 2 track; Otari 5050B, 2 track TEAC 122 cassette.

Mixing Consoles: Sound Workshop 34 automated, 32 x 24.

Monitor Amplifiers: BGW 750, AE Systems 205

Monitor Speakers: JBL 4411s, MDM-4s, Yamaha NS-10, Auratones

Echo, Reverb & Delay Systems: Lexicon 224XL

Other Outboard Equipment: Lexicon Prime Time, Eventide H949 Harmonizer, Bal flanger, Drawmer gates and compressors, Orban EQ.

Microphones: AKG 414, Neumann U87.

—LISTING CONTINUED ON PAGE 162

Puzzled about Pro Audio? Leo's has the solutions.



featuring

Sony Professional Audio Products

leo's audio and music technologies

Anticipating the needs of musicians and audio professionals since 1956.

5447 TELEGRAPH AVENUE
OAKLAND • CA 94608 • (415) 852-1553

Circle #127 on Reader Service Card

FREE 20 PAGE BOOK the essential planning and price guide for all your custom record and tape needs

45's, EP's, ALBUMS, CrO₂ CASSETTES

CALL NOW TOLL FREE

1-800

263-7798

(Continental U.S. Only)

Ultra gloss board jackets/virgin vinyl/inhouse graphics/VMS 80 lathe

3 WEEK PREPAID AIR DELIVERY



WORLD RECORDS

Baseline Road West
BOWMANVILLE, ONTARIO
L1C 3Z3

Circle #128 on Reader Service Card

—LISTING CONTINUED FROM PAGE 161

Instruments Available: Kurzweil 250 digital sampling keyboard, Linn 9000, Roland MKS-80 Super Jupiter, Yamaha DX7, Sequential Circuits Pro-One. All available no extra charge.

Video Equipment & Services: JVC ¼" video deck, Otari synchronizer, Sony PVM-1910 video monitor, commercial music production and other audio for video projects are the main services this studio offers.

Rates: \$125/hr or per project budget.

◆◆◆ INFINITE STUDIOS
P.O. Box 1709, Alameda, CA 94501
(415) 521-0321
Owner: Michael Denten
Studio Manager: Michael Denten

◆◆◆ IRONWOOD STUDIO
601 N.W. 80th, Seattle, WA 98117
(206) 789-7569
Owner: Paul Scoles
Studio Manager: Bob Benson
Engineers: Paul Scoles, Bob Benson, Norma Jean Jaeger (asst.), Robert Puff (staff producer)
Dimensions of Studios: 34 x 28 x 14 high.
Dimensions of Control Rooms: 14 x 16 x 10 high.
Tape Recorders: MCI JH-24, 24 track; MCI JH-110C, 2 track; Otari MX5050, 2 track; Akai GX630, ¼ track; Sanyo STD1800 cassette.
Mixing Consoles: Harrison Raven, 28 x 24.
Monitor Amplifiers: Haller 500, Yamaha P2050.
Monitor Speakers: JBL 4430, 4311, Auratones.
Echo, Reverb & Delay Systems: Lexicon 200 digital reverb, DeltaLab DL-2 stereo digital delay, Master-Room 305 reverb, Roland SRE-555 stereo chorus echo.
Other Outboard Equipment: (3) dbx 900 rack w/ compressors, (4) noise gates, de-esser; (2) Symetrix compressors, (2) noise gates, parametric EQ, headphone amp; Audioarts parametric EQ; Teletronix LA-2A; Roland stereo flanger; Roland Dimension-D; (2) Neptune graphic EQ; MXR Pitch Transposer.
Microphones: Neumann U87s, U47s, KM84s, KM56s, PML DC-63s, DC-73s; Sennheiser 441s; E-V RE20; Beyers M-500; Nakamichi CM-300s; Sony C-37A tube, C-500; Shure SM57s, SM58s, 545, 546; AKG C-12.
Instruments Available: Grand piano, Hammond M-3 w/Leslie, Fender Rhodes, Roland String Ensemble, Hohner clavinet, congas, Guild, Ibanez, Epiphone, Takamine guitars, Ovation bass, Fender and Music Man amps, Pearl drums.
Video Equipment & Services: NEC Auto Color monitor.
Rates: \$60/hr, block rates available.

◆◆◆ DENNY JAEGER CREATIVE SERVICES, INC.
Oakland, CA 94611
(415) 339-2111
Owner: Denny Jaeger
Tape Recorders: (2) Sony PCM-3324 digital, 48 track; Synclavier, 64 voices, 32 megabytes of RAM, 32 tracks.
Mixing Consoles: Harrison Series 10, totally automated, 112.
Monitor Amplifiers: Crest 4000 amp.
Monitor Speakers: Meyer w/complementary phase EQ.
Echo, Reverb & Delay Systems: (2) Lexicon 224X, (3) Quantec room simulators, AMS harmonizer, Lexicon Prime Time.
Other Outboard Equipment: Full complement outboard including graphic & parametric EQs, limiters, compressors, special effects, etc.
Microphones: Many available—call.
Instruments Available: Yamaha grand piano, Synclavier any additional synth, needed or required.
Video Equipment & Services: Interlock of up to 100 digital audio tracks to video. Beta, VHS, ¼".

◆◆◆ LAHAINA SOUND RECORDING STUDIO
Lahaina Square H-2, Lahaina, Maui, HI 96761
(808) 667-2587
Owner: George Benson
Studio Manager: Amos Daniels

◆◆◆ STEVE LAWSON PRODUCTIONS
2322 6th Ave., Seattle, WA 98121
(206) 625-9153
Owner: Steven Lawson Productions, Inc.
Studio Manager: Steve Lawson
Engineers: Bob Israel, Steve Lawson, Jim Wilson, Terry Date, Vince Werner, Bruce Ceider.
Dimensions of Studios: (A): 27 x 16½; (B): 13 x 14; (C): 50 x 14.
Dimensions of Control Rooms: (A): 17 x 13; (B): 12 x 13; (C): 16 x 11.
Tape Recorders: (2) MCI JH-24, 24 track; MCI JH-110C, 8 track; (3) MCI JH-110C, 2/4 track; (3) Otari 5050, 2 track.
Mixing Consoles: (A): MCI 636 automated 28 x 24; (B): Tangent 3216, 12 x 8; (C): MCI 636 automated, 28 x 24.
Monitor Amplifiers: UREI, BGW, Crown, Haller.



STEVE LAWSON PRODUCTIONS
Seattle, WA

Monitor Speakers: JBL 4430s, JBL 4311s. UREI Time Aligns, MDM 4s, Auratones, Yamaha NS-10s.
Echo, Reverb & Delay Systems: Eventide Harmonizer 949, Lexicon 224X w/LARC, AMS Reverb, Lexicon Prime Time, Prime Time 2, (3) PCM 42s, Klark-Teknik DN-780, AMS RMX-16.
Other Outboard Equipment: (2) UREI 1176s, UREI 1178, Symetrix 501s, Gain Brains, Kepex, Scamp Racks with assorted modules, Symetrix Hybrid telephone interface, Orban de-esser.
Microphones: (3) Neumann U87, (2) KM84s; (4) AKG 414s, (4) 451s, (2) D12s; (2) Shure SM5Bs, (2) SM58, (4) SM57s, (2) SM56s; (2) Sennheiser 441s, (5) 421s.
Instruments Available: (2) Yamaha 74" grand pianos, Tama SuperStar drum kit w/power-toms, LinnDrum, DMX, Oberheim drum machines.
Video Equipment & Services: Audio Kinetics Q.Lock synchronizer, Sony BVU 800, MCI 1-inch layback machine for laying audio directly to 1-inch videotape.
Rates: Call for information.
Extras: Our equipment and rooms are state-of-the-art, but it is our people that make us shine. We work on many different types of projects from heavy metal to light banter, LP projects, and audio sweetening soundtracks, radio and TV commercials, and audio sweetening of video projects. We also offer high quality high-speed reel to reel and cassette dubs in mono and stereo. Call for rates.
Direction: Our great rooms and comfortable atmosphere attract superb engineers. Our commercial work has been recognized by the world's largest awards including Clio, IBA, Andy's, One show & Best in the West. Our music production has won critical acclaim. And best of all, our clients come back. Again, and again. Give us a call, We'd love to give you a tour.

◆◆◆ LIVE OAK STUDIO
also REMOTE RECORDING
1300 Arch St., Berkeley, CA 94708
(415) 540-0177
Owner: Jim & Priscilla Gardiner
Studio Manager: Priscilla Gardiner
Engineers: Dale Eveningham (staff eng.), Robin Yeager (indep eng.), Ray Pyle (indep eng.)
Dimensions of Studios: 350 sq. ft.
Dimensions of Control Rooms: 275 sq. ft.
Tape Recorders: MCI JH-24/16, 24/16 track w/automaticator III; Otari MTR-10 ¼"/¼", 2 track; Sony PCM-F1 digital, 2 track.
Mixing Consoles: MCI JH-600 w/Disk Mix II automation, 28 x 24
Monitor Amplifiers: Brystons 3B, 4B, Yamaha, Crown, Crest.



LIVE OAK STUDIO
Berkeley, CA

Monitor Speakers: JBL Bi-Radial 4430, JBL 4401, Yamaha NS-10, Toa 265 ME, Auratones.
Echo, Reverb & Delay Systems: Lexicon 224XL, Prime Time II, PCM42, SDE-3000.
Other Outboard Equipment: Full Scamp Rack, Vocal Stresser, Drawmer gates, UREI LA-2, LA-3As, 1176, Spectra Sonics 610.
Microphones: Neumann, AKG, Sennheiser, E-V, Countryman, Shure.
Instruments Available: Kurzweil 250 w/digital sampling, Yamaha DX7, Oberheim OB-Xa, IBM computer w/Jim Miller personal composers software program and 32 tracks of MIDI sequencing.
Video Equipment & Services: SMPTE lock to video.
Rates: Upon request.

◆◆◆ L.P. STUDIOS
P.O. Box 66302, Scotts Valley, CA 95066
(408) 438-8722
Owner: Leon Patillo
Studio Manager: Jackie Patillo, Suzanne Phillips
Engineers: Vince Sanchez
Dimensions of Studios: 20 x 20.
Dimensions of Control Rooms: 25 x 25.
Tape Recorders: Ampex MM1200, 24/16 track; Otari MTR-12-1, ½" 4/2 track; Tascam 38-8 w/dbx, 8 track.
Mixing Consoles: Harrison MR4 w/automation, 36 x 24.
Monitor Amplifiers: Peavey DECA, C800, C408.
Monitor Speakers: JBL 4430, 4401.
Echo, Reverb & Delay Systems: Lexicon 224XL digital reverb, plate synthesizer.
Other Outboard Equipment: (2) LA-4 limiters, (2) dbx 160, Super Prime Time, DL2, Eventide Harmonizer 910, Aphex Aural Exciter/Omni Craft noise gates.
Microphones: RE20, SM57, MD421, AKG 451, etc.
Instruments Available: Oberheim drum machine, OB8, DSX sequencer, OB-Xa.

◆◆◆ MOBIUS MUSIC RECORDING
also REMOTE RECORDING
1583 Sanchez, San Francisco, CA 94131
(415) 285-7888
Owner: Oliver DiCicco
Studio Manager: Oliver DiCicco
Engineers: Oliver DiCicco, Ken Kessie, Maureen Droney
Dimensions of Studios: 38 x 16.
Dimensions of Control Rooms: 18 x 16.
Tape Recorders: MCI JH-114, 24 or 16 track; MCI JH-110, 2 track; Revox A77 HS, 2 track; Nakamichi 600II cassette; (2) Sony TC FX44 cassette.
Mixing Consoles: Audiotronics 501, 30 x 20.
Monitor Amplifiers: Haller 500, Crown D150, D60.
Monitor Speakers: UREI 811, Altec 604 w/mastering lab crossovers, Auratone.
Echo, Reverb & Delay Systems: Lexicon 224 digital reverb, Master-Room MR3 reverb, Lexicon 92 digital delay, DeltaLab DL4.
Other Outboard Equipment: (2) Dyna-Mite processors, (2) Kepex, (2) dbx 160 limiters, (2) UREI LA-4 limiters, UREI 530 graphic EQ, Orban parametric EQ, AR turntable.
Microphones: Neumann U47 tube, (2) KM54 tube, (2) U87, (2) KM84, (2) KM85; Sennheiser (6) 421, 402; Shure SM57s; Beyers M500; E-V RE15, RE11; AKG: D200E, D160.
Instruments Available: Yamaha C36 grand piano, Fender Telecaster (w/EMG pickups), Yamaha RX15 drum machine, Slingerland "Radio King" drums, Fender Vibrolux, Bandmaster amps.
Rates: Available on request, block booking discount avail.

●●●● MONTAGE RECORDING STUDIO
37532 Sycamore St., Newark, CA 94560
(415) 794-2992
Owner: Bill Walsh & Will Mullins
Studio Manager: Louise Singleton



MOON RECORDING INC.
Sacramento, CA

●●●● MOON RECORDING INC.
156 Otto Circle, Sacramento, CA 95822
(916) 392-5640
Owner: George Whyler
Studio Manager: George Whyler
Engineers: David Houston, Steve "Mr. Motion" Holsapple
Dimensions of Studios: 22 x 34
Dimensions of Control Rooms: 17 x 18
Tape Recorders: MCI JH-24, 24 track; Tascam 80-8, 8 track;
Otari MTR-10, 2 track.
Mixing Consoles: MCI JH-636 automated 28 x 24.
Monitor Amplifiers: UREI 6300, Crown, McIntosh.
Monitor Speakers: UREI 813B, Electro-Voice Sentry 100A,
Auratone-5C.

Echo, Reverb & Delay Systems: Ecoplate III reverb, Lexicon Prime Time III delay, Eventide Harmonizer delay, Lexicon PCM60 reverb, DeltaLab CompuEffectron delay.
Other Outboard Equipment: UREI LA-3As, 537 1/3-octave EQs; dbx 160s, Orban 424 comp/lim/de-esser; Valley People Kepex II, Gain Brain, Maxi Qs; Aphex Aural Exciter; Ashly noise gates; Thompson vocal eliminator; Sony PCM-701 digital processor; Technics SL 1200 turntable, (5) cassette decks.
Microphones: Neumann, Electro-Voice, Sony, Sennheiser, Shure.
Instruments Available: Yamaha C7 grand piano, Baldwin electric harpsichord, ARP Omni, ARP 2600, Minimoog, sound effects library.
Rates: Please call for rates.

●●●● MOUNTAIN EARS RECORDING
1939 Pearl St., Boulder, CO 80302
(303) 444-3277
Owner: Mountain Ears, Ltd.
Studio Manager: Paul Winger
Engineers: Paul Winger, Jim Mason
Dimensions of Studios: 38 x 22 x 14
Dimensions of Control Rooms: 18.6 x 22 x 12.
Tape Recorders: MCI JH-114-24, 24 track; MCI JH-110A-2UP, 2 track; Ampex ATR-700, 2 track.
Mixing Consoles: MCI JH-428-B028VU, 28 x 24.
Monitor Amplifiers: BGW, Yamaha, Crown.
Monitor Speakers: JBL 4333A, Tannoy SRM 12B, AR 18, Auratone.
Echo, Reverb & Delay Systems: Lexicon 200 digital reverb (w/all software), Lexicon Prime Time II, (2) DeltaLab 1024, variable tape delay, Eventide Harmonizer 949.
Other Outboard Equipment: UREI, Scamp (ADR), Lexicon, Eventide, Orban, dbx, Marshall, Valley People, DeltaLab, White.
Microphones: AKG, Neumann, Sennheiser, Shure, Sony, E-V, Beyer, Calrec.
Instruments Available: 1890 rosewood Steinway concert grand piano, Hammond C-3, 122 Leslie (w/preamp pedal), Oberheim DX.
Rates: Please call—blocks available.

●●●● MOUNTAIN MOBILE RECORDING, INC.
Rt. 1 Box 25, Tulelake, CA 96134
(916) 667-5508
Owner: Mountain Mobile Recording Inc.
Studio Manager: Web Staunton

●●●● M.S. PRODUCTIONS
5191 3rd St. Suite 6, San Francisco, CA 94124
(415) 282-4806
Owner: Melvin Seais



MUSIC ANNEX INC.
Menlo Park

●●●● MUSIC ANNEX INC.
also REMOTE RECORDING
970 O'Brien Dr., Menlo Park, CA 94025
(415) 328-8338
Owner: Music Annex Inc.
Studio Manager: David Porter, Michelle LeCante (traffic manager)
Engineers: Russell Bond, Keith Hatschek, Jim Dean, David Porter, Richard Rose, Wes Weaver, Bill Johnston, Roger Wiersma (chief engineer).
Dimensions of Studios: (A): 35 x 28, 10 x 8 iso booth; (B): 13 x 11; (C): 20 x 30, 10 x 12 iso booth; (D): 40 x 42.
Dimensions of Control Rooms: (A): 25 x 22; (B): 23 x 18; (C): 28 x 22; (D): 16 x 10 (video).
—LISTING CONTINUED ON PAGE 164

Masters at Work

Give your demo or music video the best shot. Resolution duplicates cassettes for some of the most demanding producers and labels in the country. Audio and video** in real-time; all on time. Phone now toll free 1-800-862-8900 and ask about our special test cassette offer and free catalogue.

All Work 100% Guaranteed
*24 hour service available
**All hi-fi video.

- No minimum runs
- Custom pricing
- Lowest prices

- Extensive Quality Control
- From any master
- Fast turn around*



RESOLUTION
VIDEO AUDIO AND FILM
Chace Mill
One Mill Street
Burlington, Vermont
05401-1514

Circle #129 on Reader Service Card

NOISE GATES GTX(d) or GTX(K)



SWITCHABLE
"DUCKING"
CIRCUIT
&
SWITCHABLE
HI & LO PASS
FILTERS
&
USES PROVEN
OPTICAL SYSTEM
&
RANGE
CONTROLS
&
BALANCED
INPUTS FOR
UNIVERSAL
APPLICATIONS
&
RELIABLE
PRODUCT & LOW
PRICES

DEALER INQUIRIES INVITED

OMNI CRAFT INC.

Rt. 4 Box 40
Lockport, IL 60441
(815) 838-1285



—LISTING CONTINUED FROM PAGE 163

Tape Recorders: (2) MCI JH-114, 16/24 tracks; (3) MCI 1/2" & 1/4" JH-110 A/B, 2 track; (5) Ampex 440 1/4" 440B, 2 track; Otari MkIII, 8 track.

Mixing Consoles: Neve 8036, 24 x 8 x 24; Amek 2500, 28 x 24 x 24; Amek/TAC 16 x 8 x 8.

Monitor Amplifiers: BGW, Crown, Yamaha, A/B systems.
Monitor Speakers: (A): UREI 813; (B): JBL 4333A; (C): UREI 811 & Augspurger sub woofer system; (D): JBL 4311.

Echo, Reverb & Delay Systems: EMT 240, Lexicon 224 4.4 version, MXR 01 digital reverb.

Other Outboard Equipment: UREI 1176, 1178 limiters; Ino-nics limiters; ADR and Neve compressor/limiters; ADR Vocal Stresser; ADR stereo EQ, Scamp Racks w/EQ, gates DDL, Pan modules; Eventide Harmonizer, phase/flanger; Lexicon Prime Time; Roger Meyer noise gates; SMPTE-based automation in all studios.

Microphones: AKG, Neumann, E-V, Beyer, Sennheiser, Sony, Calrec, Shure, Countryman & Crown PZMs, Countryman FET directs.

Instruments Available: Yamaha C-7 & C-3 conservatory pianos, Ampeg bass amp, alphaSyntauri digital synthesizer, various snare drums and percussion equipment.

Video Equipment & Services: Complete sound stage with hard cyc 600 amp lighting grid with hot patch, Asaca and Conrac color critical monitors, Audio-Kinetics 310 Q.Lock synchronizer, JVC 8250 3/4" deck, dressing rooms, (2) Sony 3/4" U-matics, Ampex BC-3 studio camera.

Rates: \$45 to \$125, call for quotes, day rates.

Extras: TV lounge, kitchen, parking for 40 cars. Cassette duplication with the state-of-the-art Otari DP-80 480 ips system. Real-time cassette copies on (5) Tascam 122 decks. Studio C audio control room may be used w/soundstage Studio D.

Direction: It is our intent to service both the music and industrial recording markets with the same technical expertise and attention to detail. We encourage independent engineers to use our studios and offer them a most comprehensive technical facility and staff. Our credits include Ronnie Montrose, The Tubes, Bill Withers, George Winston, Will Ackerman, Alex DeGrassi, Todd Rundgren, Blue Oyster Cult, Black Sabbath, Richie Cole, Donna Fargo, Steven Halpern, Holly Near, and The Toons.

•••• THE MUSIC SOURCE

615 E. Pike, Seattle, WA 98122
(206) 323-6847

Owner: Jim Wolfe

Studio Manager: Dave Raynor

Engineers: Jim Wolfe, Dave Raynor, Will Lewis

Tape Recorders: Sony MCI JH-124, 24 track; Sony MCI JH-110, 2 & 4 track; MCI JH-110, 2 track; (2) Revox A77s reel-to-reel; (5) Akai cassette, Aiwa cassette.

Mixing Consoles: MCI JH 600 series, 28 x 24.

Monitor Amplifiers: UREI 6500; Phase Linear 400; Crown D60; BGW; Symetrix headphone amplifier.

Monitor Speakers: JBL 4430s; JBL L-100s; Yamaha NS-10; Auratones.

Echo, Reverb & Delay Systems: Lexicon Prime Time, PCM 60, 224X/LARC; AKG BX 10; Eventide Harmonizer H910.

Other Outboard Equipment: Scamp Racks w/gates, (2) Spectronics limiters, (2) Symetrix peak limiters w/side chains; Aphex Aural Exciter, Adams-Smith synchronizer, Roland time code generator, dbx limiter 162, DMX drummer, Roland Vocoder, (2) UREI 1176 peak limiters, (2) UREI 1/3-octave equalizers.

Microphones: Neumann U87, U67 tube mic; AKG 414, 451, D12E; Electro-Voice RE20; Shure 57s; Sennheiser MD421.

Instruments Available: DMX drummer, Emulator with sequential interface, Simmons drums, 9' Kawai grand piano, Oberheim OBX w/DSX sequencer, Kurzweil, Yamaha DX7, Thunder Rhodes, Kramer bass, drum sets available.

Video Equipment & Services: Sony 3/4" video cassette recorder.

Rates: Available upon request.

•••• NORTHWESTERN, INC.

1224 S.W. Broadway, Portland, OR 97205
(800) 547-2252, (503) 226-0170

Owner: Bob Lindahl

Studio Manager: Paul Buescher

Engineers: Gary Shannon, Michael Hellums, Joe Allen (maintenance)

Dimensions of Studios: 16 x 24.

Dimensions of Control Rooms: 12 x 20.

Tape Recorders: Ampex MM 1200, 16 track; (4) Ampex ATR 800, 4 track; (3) Ampex ATR 800, 2 track; Ampex 440C, 4 track; Magnasync 16mm; Nagra III - Nagra 4.25; Ampex AD-15 duplicating; Audiotek 2000 cassette duplicating.

Monitor Speakers: JBL/Spectra Sonics.

Other Outboard Equipment: Reverb: Ecoplate, Orban, Digital.

Microphones: Neumann U47 (tube), U67 (tube); E-V RE16, RE20, etc.

Instruments Available: Baldwin grand piano.

Video Equipment & Services: Film to video transfer, video and film sound tracks.

•••• OASIS RECORDING STUDIO

395 Sussex St., San Francisco, CA 94131
(415) 587-3564

Owner: Greg Goodwin

•••• OCEAN STUDIO

P.O. Box 747, Stinson Beach, CA 94970
(415) 868-0763

Owner: Tim Tomke

Studio Manager: B.J. Meines

•••• ONE PASS AUDIO

also REMOTE RECORDING

1 China Basin Bldg., San Francisco, CA 94107
(415) 777-5777

Owner: A One Pass Co.

Studio Manager: client services

•••• OTR STUDIOS

also REMOTE RECORDING
P.O. Box 874, Belmont, CA 94002
(415) 595-8475

Owner: Cookie Marenco, Robert Firpo

Studio Manager: Cookie Marenco

Engineers: Randy Sellgren, Cookie Marenco, Mike Cutter

Tape Recorders: Otari MTR-9011, 24 track; Otari MkIII, 8 track; Sony digital PCM-F1, 2 track; Otari 5050B, 2 track.

Mixing Consoles: Sound Workshop series 34, automated, 32 dual line inputs; (2) Soundcraft 200, 8.

Monitor Amplifiers: Crown.

Monitor Speakers: Tannoy Big Reds, Yamaha NS-10M, Auratones.

Echo, Reverb & Delay Systems: Lexicon 224 XL digital reverb, AMS digital reverb, Lexicon PCM60 digital reverb, Lexicon Super Prime Time w/1.92 MEO, Lexicon PCM42 delay, DeltaLab 1040 Effectron, MICMIX XL 305.

Other Outboard Equipment: (2) Dyna-Mite stereo noise gates, Aphex Compellor, UREI LA-4 compressor/limiter, Garfield Nanodoc, Technics RM-585 cassette.

Microphones: Neumann U67; (2) AKG 414s, (2) 451s; (4) Sennheiser 421s; Electro-Voice RE20; (3) Nakamichi C-100s;

(3) Shure SM56s, (2) SM57.

Instruments Available: Steinway 7' grand piano, Hammond B-3 organ, (2) Yamaha DX7, (2) Yamaha TX7, Prophet-5 w/MIDI, Minimoog w/MIDI, Linn II drums, Roland MSQ-700, SCI Poly sequencer, Voice 400 synthesizer, Gretsch & Sonor drums, Hohner xylophone, Musser vibes, Marshall & Walter Woods amps.

Video Equipment & Services: Sony SL-2000 Tuner/Beta videocassette, Sony SL-2710 Beta Hi-Fi videocassette, monitors, BTX, 3/4" video available upon request.

Rates: Please call.

•••• PACIFIC MOBILE RECORDERS

only REMOTE RECORDING

2616 Garfield Ave.

Carmichael (Sacramento), CA 95608

(916) 483-2340

Owner: Jim & Kat Hibbard

Studio Manager: Kat Colley Hibbard

•••• PAN STUDIOS, INC.

1767 S. 8th St. M-6, Colorado Springs, CO 80906
(303) 633-6764

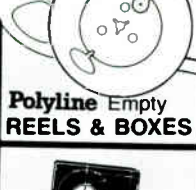
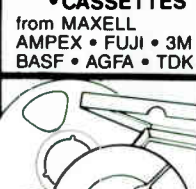
Owner: Dale Nixon

Studio Manager: John Standish

•••• THE PLANT STUDIO

2200 Bridgeway, Sausalito, CA 94965
(415) 332-6100

Ask for our
FREE CATALOG
OF PROFESSIONAL
Sound RECORDING
& DUPLICATING SUPPLIES



Switchcraft Connectors
Canare Microphone Cable
Connectronics Cable
Telex Cassette Copiers
Signature Prod. Music Library

Polyline Corp.

1233 Rand Rd. • Des Plaines, IL 60016
(312) 298-5300

Circle #130 on Reader Service Card

SENNHEISER ANNOUNCES ALMOST NOTHING.



Almost no noise. Almost no overload limit. Almost no distortion. Almost no variation in response or directional characteristics over the entire recording spectrum.

Introducing the new MKH 40 cardioid condenser studio microphone. With an exclusive symmetrical transducer* that makes possible dramatically higher overload levels, higher output, ruler-flat frequency response, and lower IM distortion (particularly in the presence range). All this, plus a noise level so low, it is virtually imperceptible, even by modern digital recording equipment.

Without doubt, it is the finest studio microphone Sennheiser has ever made.

We believe you may consider it the finest studio microphone *anyone* has ever made.

Contact us for a personal demonstration. And hear for yourself why almost nothing is really something.

Circle #131 on Reader Service Card

 **SENNHEISER**
Sennheiser Electronic Corporation (N.Y.)
48 West 38th Street
New York, NY 10018
(212) 944-9440
Manufacturing Plant:
D-3002 Wedemark, West Germany

© 1985 Sennheiser Electronic Corporation (NY) *Patents applied for



PRAIRIE SUN RECORDING STUDIO
Cotati, CA

●●●● **PRAIRIE SUN RECORDING STUDIO**
P.O. Box 7084, Cotati, CA 94928
(707) 795-7011
Owner: Mark "Mooka" E. Rennick
Studio Manager: Claris Sayadian

●●●● **PYRAMID RECORDING STUDIO**
also **REMOTE RECORDING**
1020 35th Ave., Sacramento, CA 95822
(916) 424-8772
Owner: Charles D. Carter
Studio Manager: Jeff Carter



PYRAMID RECORDING STUDIO
Sacramento, CA

●●●● **KELLY QUAN RECORDING**
55 White St., San Francisco, CA 94109
(415) 771-6716
Owner: Kelly Quan
Studio Manager: Marie Davalos

●●●● **RECORDING ASSOCIATES**
also **REMOTE RECORDING**
5821 S.E. Powell Blvd., Portland, OR 97206
(503) 777-4621
Owner: Jay Webster, Bob Stoutenburg
Studio Manager: Jay Webster



R.O. STUDIOS
Concord, CA

●●●● **R.O. STUDIOS**
3359 Walnut Ave., Concord, CA 94519
(415) 676-7237
Owner: The Henry Bros.
Studio Manager: Ralph F. Henry Jr.
Engineers: Rick Henry, independents welcome.
Dimensions of Studios: 25 x 15, 20 x 15.
Dimensions of Control Rooms: 16 x 15.
Tape Recorders: Otari MTR-90II, 24 track; Otari MTR-10, 2 track; Denon DR M44, cassette; Technics SW-110, digital audio processor.
Mixing Consoles: Sound Workshop Series 40, 28 x 24 w/VCA's; 24-channel high resolution metering.
Monitor Amplifiers: Hafler DH-500, BGW 750-B, McIntosh 2105.
Monitor Speakers: UREI 811s, Yamaha NS-10s, Auratones, KEF listening speakers.
Echo, Reverb & Delay Systems: Lexicon 224XL digital reverb, (2) Lexicon PCM60 digital reverbs, Eventide H969 Harmonizer, (2) 1310 digital effects processors.
Other Outboard Equipment: (2) UREI 1176 LN peak limiters, (2) Dyna-Mite 430s, UREI LA-4 limiter, MX1+triggering device, any outboard equipment available upon request.
Microphones: Neumann, AKG, Sony, Sennheiser, Shure, E-V. Any mic available upon request.
Instruments Available: Yamaha grand piano, Yamaha DX7 synthesizer, Roland 5X-8P synthesizer, Linn 9000 w/sampler & disk drive, Marshall amps, Rockmans, Bass-Rockman, 360 MIDI bass, Steinberger XL-2 bass.
Rates: Call for rates. Block rates available.
Extras: Swimming pool, shower & kitchen facilities; games & listening room; producing and record pressing packages available.
Direction: Here at R.O. we have the most modern state-of-the-art equipment available along with a very relaxed atmosphere. Come work with the best for less!

●●●● **ROSEWOOD RECORDING CO.**
2288 W. 300 North, Provo, UT 84601
(801) 375-5764
Owner: Guy & Kristen Randle
Studio Manager: Kristen Randle
Engineers: Guy Randle, Mark Hoffman, Jeff Carter, other independents.
Dimensions of Studios: 22 x 22.
Dimensions of Control Rooms: 15 x 13.
Tape Recorders: MCI JH-16 w/ALII, 24 track; Otari 5050B, 2 track; Pioneer RT701, 1/4 track; Nikko ND1000, cassette; Technics M-65, cassette.
Mixing Consoles: NEOTEK Series 3C w/VCA subgrouping, 26 x 24.
Monitor Amplifiers: Hafler.
Monitor Speakers: E-V Sentry 500, Yamaha NS-10M, Auratones, Sennheiser HD40 cue.
Echo, Reverb & Delay Systems: Lexicon 200 digital reverb w/current software, Roland SRV 2000, Eventide H910 Har-

WHEN IT COMES TO KEYBOARDS, SEATTLE BEATS L.A. HANDS DOWN.

Like to try your hand at six different keyboards in the same control room?

Then come to the Source and play a Kurzweil 250, a Yamaha DX7, an Oberheim OB-Xa, an Emulator, and two Moogs — all wired into a Macintosh computer with MIDI.

Not only is our selection better, our prices are lower.

Now how can you beat that?

the MUSIC SOURCE

615 E. Pike Seattle, WA 98122
(206) 323-6847

(For a sneak preview, see the cover of this magazine.)

Circle #132 on Reader Service Card

monizer, (2) DeltaLab Effectron digital delays.
Other Outboard Equipment: Aphex Aural Exciter, Symetrix 511 noise reduction, Symetrix CL501 limiter, Orban de-esser, DOD limiters/de-essers, Biamp graphic EQ, Roland stereo phaser, Omni Craft GT4 noise gates.
Microphones: Neumann U64 tube; AKG C414 P48, C505, D190E; Electro-Voice RE20, PL77, RE10, RE11; Sennheiser MD421; Wright condenser; also Sony, Beyer (various quantities of the above).
Instruments Available: Emulator II digital sampling system with lots of great sounds, including many custom samples, Yamaha DX7 w/DX-Pro computer package, Yamaha RX11 drum machine, Simmons SDS-9 (MIDI equipped—will trigger drum machines or Emulator samples), Baldwin 9' concert grand, Tama acoustic drums, Fender precision, Gibson mastertone.
Rates: All this for only \$38.50/hr including engineer. Block rates and w/o engineer rates available. Please call for brochure.

**●●●● RUSSIAN HILL RECORDING/
 RUSSIAN HILL FILM-TO-TAPE**
 1520 Pacific Ave., San Francisco, CA 94109
 (415) 474-4520

Owner: Bob Sholland, Jack Leahy
Studio Manager: Gail Nord, Bob Sholland (gen. mgr.)
Engineers: Jack Leahy, Richard Greene, Sam Lehmer, Marie Moore, Jeff Kliment, Gary Clayton, Donna Gentile, Dave Lumaye.
Dimensions of Studios: (A): 20 x 30; (B): 18 x 28.
Dimensions of Control Rooms: (A): 15 x 24; (B): 13 x 22.
Tape Recorders: MCI JH-110, 4 track; (2) MCI JH-24/JH-114, 24/16 track; MCI JH-110B, 2 track; Technics 1506 ¼ track.
Mixing Consoles: (A): Helios 52 x 24; (B): NEOTEK series III, 28 x 24.
Monitor Amplifiers: Yamaha P-2200s, 2050, McIntosh 2105s.
Monitor Speakers: UREI 813 Time Aligned, control rooms A&B; JBL 4311, studios A&B, Auratones.
Echo, Reverb & Delay Systems: Lexicon 224, PCM 60, EMT 140s, various delays.
Other Outboard Equipment: Eventide H-949 Harmonizer, Scamp system, vocal stressor, UREI 1176LN, ADR compressors, Valley People Dyna-Mite, digital metronome, Symetrix gate, anything and everything.
Microphones: Full complement Neumann, AKG, Sennheiser, Shure, RCA, E-V, etc.
Instruments Available: Steinway and Yamaha grand pianos.
Video Equipment & Services: Complete film/video post sound with video/audio interlock in each studio; Q.Lock with all optional software (ADR, SFX, VAPP), Sony color monitors—25", 19", 17"; Novabeam 5- and 10-foot video projection systems. Film-to-tape services: 35 and 16mm to any video format with all time code options available. KEM K-800 6 plate with optical scanners synchronize through Q.Lock to all video & audio recorders. ¾" video includes BVU-800, JVC 8250, 6650, 6400. Also Beta, Beta Hi-Fi, VHS formats.
Rates: Brochure on request.

●●●● SAN FRANCISCO SOUND RECORDERS
 245 Hyde St. 2nd floor, San Francisco, CA 94102
 (415) 474-0377

Owner: Dan Alexander
Studio Manager: John Cuniberti, Connie Lauertuner (bus. manager)
Engineers: Independents: many available.
Dimensions of Studios: 39 x 19 w/12 x 8 iso.
Dimensions of Control Rooms: 17 x 19.
Tape Recorders: Otari MTR-90 MkII, 24 track; Otari MTR-12, 2 track.
Mixing Consoles: API Custom 3232, 40 x 36.
Monitor Amplifiers: Marantz model 9, Phase Linear 700, Haller, McIntosh, etc.
Monitor Speakers: Custom Hi-fidelity system, Yamahas, etc.
Echo, Reverb & Delay Systems: AMS digital reverb, EMT digital reverb, (2) acoustic echo chambers, Publison, BEL, (3) Lexicon, Deltalab DDLs, Super Prime Time.
Other Outboard Equipment: Fairchilds, Teletronix, UREI, Pulitecs, Langs, ITI, Sontec, Aphex II, Vocal Stresser, Drawmers, Dyna-Mites, Omnipressor.
Microphones: C12; C24; Elam 251; M49; U67; and everything else.
Rates: Please call for rates.

●●●● SEA WEST STUDIOS / HAWAII
 Box 729, Hanaula, HI 96717
 (808) 293-1800
Owner: Rick Keeler
Studio Manager: Donna Alexa

**●●●● SLOW BOAT
 only REMOTE RECORDING**
 1135 Pearl St. Suite 7, Boulder, CO 80302
 (303) 443-9822
Owner: Wind Over the Earth, Inc.
Studio Manager: Mickey Houlihan

●●●● SONOMA SOUND
 P.O. Box 1623, Sonoma, CA 95476
 (707) 996-4363

Owner: Arron Johnson
Engineers: Arron Johnson, Mark Masonek
Dimensions of Studios: (A): 38 x 18; (B): 25 x 25.
Dimensions of Control Rooms: 20 x 16.
Tape Recorders: MCI/Sony JH-24, 24 track; Tascam 32, 2 track; Tascam 122B, cassette; (2) JVC KD-V6J, cassette.
Mixing Consoles: Amek/TAC Matchless, 28 x 24.
Monitor Amplifiers: Pioneer SA-9900.
Monitor Speakers: JBL 4312, JBL L-96.
Echo, Reverb & Delay Systems: StarGate 323 digital reverb, Fostex 3180 stereo spring reverb, Eventide H-910 Harmonizer, DeltaLab DL-4 digital delay/flanger, Roland SDE-1000 digital delay.
Other Outboard Equipment: Biamp stereo 15 band equalizer, dbx 160X compressor/limiter, dbx Series 1 noise reduction.
Microphones: (10) Shure SM57, (2) SM81; Electro-Voice RE20; (4) Sennheiser MD-421U; AKG N-66; (4) Crown PZM; Beyer Dynamic; (2) Countryman direct boxes.
Instruments Available: Piano, studio drum set, Roland TR-909 drum machine, Ibanez Musician electric guitar, Yamaha acoustic guitar, trumpet, chimes, bells.
Rates: \$35/hr, block time discounts.

**●●●● SOUND COLUMN STUDIOS
 also REMOTE RECORDING**
 46 E. Herbert Ave., Salt Lake City, UT 84111
 (801) 355-5327

Owner: The Sound Column Companies
Studio Manager: Clive Romney

●●●● SOUND IMPRESSIONS
 4704 S.E. View Acres, Milwaukie, OR 97267
 (503) 659-5953
Owner: Daniel Decker
Studio Manager: Daniel Decker

**●●●● SOUNDLINK/DOLPHIN SOUND
 also REMOTE RECORDING**
 1015 Aoloa Place #330, Kailua, HI 96734
 (808) 263-4800

Owner: KHNL-Channel 13 TV
Studio Manager: Jim Linkner
Engineers: Jim Linkner
Dimensions of Studios: Soundstage: 30 x 50; iso: 13 x 8.
Dimensions of Control Rooms: 14 x 12.
Tape Recorders: MCI/Sony JH-24, 24 track; (2) MCI/Sony JH-110C-2, 2 track; Revox B710 Mk II, cassette; Tascam 122B, cassette.
Mixing Consoles: MCI 542B, with updated VCAs, X-formers, 36 x 32.
Monitor Amplifiers: Studer, Haller.
Monitor Speakers: New Hidley/TAD/Kinoshita vertical design (model 3), MDM-4, Auratone 5C.
Echo, Reverb & Delay Systems: AMS RMX-16 digital reverb, Lexicon PCM60 digital reverb, Lexicon 95 DDL, Lexicon 42 DDL.
Other Outboard Equipment: Eventide H949 Harmonizer, Eventide Omnipressor, UREI LA-4s, Compellor, ADR "Scamp" F-300 expander/gates, Klark-Teknik 1/3-octave EQ, Pioneer P-D70 CD player.
Microphones: Sanken CU-41; Neumann U87, KM84; AKG C460, D-12E; Sennheiser 441; Shure SM57; Countryman Isomax; Simon DB/PS/1 DIs (active); Minicube DIs (active).
Instruments Available: Yamaha DX7.
Video Equipment & Services: Full stage and remote facilities. Cameras: (5) Sony BVP-30, (2) JVC; (4) 14:1 lenses, 17-1 lens, wide-angle zoom lens; (4) Sony BVU-800, (2) Sony BVU-820; Grass Valley 1680 switcher.
Rates: Audio: \$75/hr; video: on quotation.

●●●● SOUND TECHNIQUE RECORDING STUDIO
 11240 Hwy 41, Madera, CA 93638
 (209) 431-5275

Owner: Ken and Marilyn Carlton
Studio Manager: Ken Carlton
Engineers: Ken Carlton (chief), Jack Jarvis (2nd), Gary Hunter (technician).
Dimensions of Studios: 20 x 22, plus 8 x 8 piano alcove, 9 x 10 iso room, and 5 x 10 vocal booth.
Dimensions of Control Rooms: 14 x 17.
Tape Recorders: Otari MTR-90, 24 track w/16 track capability; Otari MTR-10, 2 track (½" & ¼" formats); Otari 5050B, 2 track; (13) Hitachi DE-7 cassette decks (for RT duplication); Pioneer RT 707; numerous other miscellaneous decks.
Mixing Consoles: Sound Workshop Series 34, 32 channels with ARMS.
Monitor Amplifiers: Bryston 3B & 4B on control room mains, Haller DH200 on studio playback Yamaha & Sensui backup amps.
Monitor Speakers: JBL 4430 Bi-Radials in control room, Yamaha NS-1000 in studio, Yamaha NS-10 and Auratones.

Echo, Reverb & Delay Systems: Lexicon 224XL, Ecoplate II, Marshall Time Modulator 5402, Eventide 949 Harmonizer, Deltalab DL-3, tape delay, Roland 3000 digital delay.

Other Outboard Equipment: ADR Vocal Stresser and Stereo Express, (2) UREI 1176LN, (2) UREI LA-4, (4) Allison Research Gain Brain, (4) Allison Research Kepex, (2) dbx 165, Orban 622B parametric EQ, (2) UREI Model 549 graphic EQ, 2 channels of Dynaflex noise reduction, Aphex Aural Exciter, UREI digital metronome, Power One protection on every AC line.

Microphones: Neumann U87, U89, KM86; (2) AKG 414 EB, (6) 451 EB; (2) Sennheiser 441, (9) 421; (2) E-V RE20, RE16; (2) Crown PZM; Shure 56; Beyer 160 ribbon; (8) Countryman FET 85 direct boxes; and more.
Instruments Available: Kurzweil 250 fully loaded, Linn 9000 fully loaded, Yamaha DX7, Yamaha C-7 grand piano, many more synths, guitars and amps. Peterson strobe tuner.
Rates: \$35/hr, 2 track; \$50/hr, 24 track. All rates include everything listed above. Kurzweil and Linn are \$35/day each.

●●●● SOUNDTEK STUDIOS
 85 S. 2nd St., Campbell, CA 95008
 (408) 370-3313
Owner: Bob Berry
Studio Manager: Mike Pomeroy

**●●●● SPECTRUM
 also REMOTE RECORDING**
 P.O. Box 757, San Carlos, CA 94070
 (415) 593-9554

Owner: Paul L. Weaver
Studio Manager: Jim Conklin

●●●● SPECTRUM STUDIOS, INC.
 905 S.W. Alder St., Portland, OR 97205
 (503) 248-0248

Owner: Michael Carter, Lindsey McGill
Studio Manager: Michael Carter
Engineers: Michael Carter, Lindsey McGill, Chris Douthitt, Dave Mathew, Jim Baer, Rob Perkins, Jim Rogers.
Dimensions of Studios: (A): 19 x 34; (B): 18 x 14; (C): 14 x 16.
Dimensions of Control Rooms: (A): 22 x 15; (B): 17 x 5; (C): 12 x 16.
Tape Recorders: Ampex ATR-100, 2 track; Ampex ATR-100, 4 track; MM-1100, 16 track; Otari MTR-90 II, 24 track; Otari MX-5050, 4 track; (12) Scully 280B, 2 track; (2) Scully 280B, 4 track; (2) Nagra 4.2, 1 track.
Mixing Consoles: Custom (built-in-house) 16 x 16.
Monitor Amplifiers: McIntosh, Crown, Yamaha.
Monitor Speakers: UREI 811, Auratone, Yamaha NS-10s.
Echo, Reverb & Delay Systems: EMT-140S, AKG-BX20E, Eventide Harmonizer, Lexicon Prime Time II, Ursula Major Space Station, Yamaha Rev-7 digital reverb.
Other Outboard Equipment: Dolby B noise reduction, dbx type 1 noise reduction, Eventide flanger, UREI 1/3 octave EQs, UREI notch filter, Orban de-esser, Gain Brains, Mayer noise gates, Jensen direct boxes, Eiki interlock projector, AVL Eagle computerized multi-image programmer, Skoteld digital metronome, (3) LA-3As.
Microphones: Neumann U87, U47; E-V CS-15, RE50, RE16; AKG C-451E, D1000E, D190, D200; Shure SM54; Sennheiser 815, Tram lavalliers.
Instruments Available: Yamaha G-3 6' grand piano.
Video Equipment & Services: Audio-for-video post-production utilizing Audio Kinetics Q.Lock, Sony BVH-1100 1" video recorder, 24 track ATR, also, ¾" video. Also, 16mm film interlock mixing system which can be used alone or in conjunction with video system.
Rates: \$65/hr all formats to 16 track; \$75/hr 24 track, \$135/hr audio-for-video post-production.

●●●● STARLIGHT STUDIO
 617 S. 13th St., Richmond, CA 94804
 (415) 236-2281

Owner: Starlight Sound Inc.
Studio Manager: Brilliant Production and Management, Inc.
Engineers: Staff: Norman Kerner, Bill Thompson, Carl Herlofsson, Jamie Bridges, Peter Brown; associates: Karl Derfler, Gary Mankin, Ray Pyle, Matt Wallace.
Dimensions of Studios: 25 x 35 x 12; piano room: 15' pentagonal.
Dimensions of Control Rooms: 20 x 15 x 12.
Tape Recorders: MCI JH-16 w/Autolocator III, 24 track; Ampex ATR 102 ¼" & ½", 2 track; Otari MX5050-B, 2 track; Tascam 122s cassette decks; Technics turntable.
Mixing Consoles: Harrison 4032, 40 in x 32 bus out w/Allison x 65k automation.
Monitor Amplifiers: Bryston, Haller, Crown, Biamp, Marantz.
Monitor Speakers: UREI 813 Time Aligned, Yamaha NS-10M, Auratones.
Echo, Reverb & Delay Systems: Lexicon 224X, PCM60
 —LISTING CONTINUED ON PAGE 168

—LISTING CONTINUED FROM PAGE 167

and AMSRMX 16 digital reverbs; Master-Room XL305, Lexicon PCM42, 41 and Efectron delay lines, Eventide H910 Harmonizer, MXR doubler.

Other Outboard Equipment: UREI LA-4 & 1176 comp/limiters, Audioarts parametric and Biamp graphic EQ, Symetrix & Kepex gates/processors, Valley People Dyna-Mites, EXR Exciter, Eventide FL201 flanger, MXR flanger.

Microphones: Neumann tubes and condensers, AKG, Beyer, Crown PZM, E-V, Shure, RCA Ribbon, etc.

Instruments Available: Yamaha C-7 7'4" conservatory grand piano, LinnDrum digital drum machine, Prophet synth, Rogers drum kit, large collection of new and vintage gear including Mesa/Boogie MkII, Marshall, Musicman, Vox, Fender tweeds and blondes, Schecter and Epiphone basses, old Strats and Pauls, '30s Dobro, Rick 12-string and much more.

Video Equipment & Services: Available upon request. Rates: Please call Lisa Petrides of Brilliant Production and Management for rate schedule and off-hour specials.

●●● STARSOUND AUDIO, INC.
2679 Oddie Blvd., Reno, NV 89512
(800) 354-7252

Owner: Scott Bergstrom

Studio Manager: Mark Ishikawa

Engineers: Mark Ishikawa, Scott Bergstrom, Dave Jensen, Lee Taggart.

Dimensions of Studios: 35 x 30; 3 iso rooms: 8 x 14, 7 x 10, 8 x 16.

Dimensions of Control Rooms: 15 x 25.

Tape Recorders: Studer A-80, 24 track; Otari MkIII-2, 2 track; Yamaha C-200, 2 track.

Mixing Consoles: Amek Angela, 28 x 24; RSS mixdown computer CPE-800.

Monitor Amplifiers: Crown PSA2, Crown DC-300, Yamaha PC2002.

Monitor Speakers: JBL 4333, 4411, Auratone T6, 5C, JBL 4425, 4435, Yamaha NS10.

Echo, Reverb & Delay Systems: Lexicon 200, 8' plate, PCM60, Roland SDE 3000, 1000, DeltaLab, Korg 3000, Roland SRV 2000, Yamaha Rev-7.

Other Outboard Equipment: dbx de-esser, compressor gates, parametrics, Roland phaser, flanger, dimension D, Aphex, compeller, dbx 166.

Microphones: AKG 414, 460, 451, 330; Sennheiser 441s, 421s, 431, 409, 402, 211; E-V PL20, RE20, RE15, RE18; Shure SM56s, SM57s, SM81s; PZMs; Countryman 101s.

Instruments Available: Chroma, Gleeman Pentaphonic, Oberheim OB-8, DSX, DMX, OBSX; large set Fibes drums, set of Simmons drums, Linn, Yamaha DX21, DX7, DX5, E-mu, Yamaha drum machines, 7'4" Kawai grand piano, and much more.

Video Equipment & Services: Reference VHS only.

Rates: \$65/hr, 24 track; \$55/hr, 8-hour block special project rates per week.

Extras: Over 2,000 instruments available in Starsound Audio/Bizarre guitar complex. Studer and Amek installed new in August '84. T.E.F. analysis available to clients. Studio is in Reno, 45 minutes from Lake Tahoe, endless recreation potential.

Direction: State-of-the-art production facility with a very low key/high tech staff. This "no excuses" studio is perfect for projects away from the big city rush. Whole albums or just tracking, the best is now available for less than what you'd expect. See you here—sooner or later.

●●● STUDIO C
1338 Mission St., San Francisco, CA 94107
(415) 863-2825

Owner: Luther Greene, Will Haney

Studio Manager: B.L. Petroff

●●● STUDIO D RECORDING INC.
424 Coloma St., San Rafael, CA 94965
(415) 332-6289

Owner: Dan Godfrey, Joel Jaffe

Studio Manager: Joel Jaffe

Engineers: Ricky Sanchez, Bob Hodas, Karl Derfler, Dr. Richie Moore (tech. director), Lenette Viegas (ass't), James "Watts" Vereecke (ass't)

Dimensions of Studios: 29 x 36 x 20 (ceiling). Iso booth: 7 x 14 x 16 (ceiling).

Dimensions of Control Rooms: 20 x 20, compression ceiling.

Tape Recorders: Studer A800 MkII, 24 track; Ampex ATR-102, 2 track; Studer/Revox B77, 2 track; Aiwa 770, cassette.

Mixing Consoles: Trident TSM, 40 x 32 x 32.

Monitor Amplifiers: Hafler 500, (5) Hafler 220.

Monitor Speakers: Custom Hidley, Yamaha NS-10M, Auratones.

Echo, Reverb & Delay Systems: EMT 140 plate (tube), AMS RMX16 reverb, Roland SRV-2000 reverb, Roland SDE-3000 delay, Bel BD-80 delay/sampler.

Other Outboard Equipment: (2) Pultec EQP-1, (2) Pultec EQP-1A, (2) Lang PEQ-2, Pultec MEQ-5, (2) UREI Model 545 parametric EQ, (2) Drawmer DS-201 dual gates, (4) Kepex II, dbx 165 compressor, (2) Teletronix LA-2A, (2) UREI 1176LN, (2) UREI LA-4, Eventide H910 Harmonizer.



Microphones: Neumann M-49b, U67, U47 tube; AKG C-24 stereo tube, C414EB, C451EB, (2) D-200E, D-12; Sennheiser MD-421, MD-441; Beyer 201; RE20; SM57; PZMs; (2) 47 FET; ECM 50; E-V 666; KM-84; (6) Countryman direct boxes.

Instruments Available: LinnDrum, DX7, Hammond organ B-3, Korg Polysix. Amplifiers: Jazz Chorus, Marshall JCM 800, Gallien Krueger studio amp.

Video Equipment & Services: Studio is located next to major soundstage. Video tie-in to control room. Q.Lock and all VTR formats available upon application.

Rates: Please call for rates.

●●● STUDIO HAWAII
1 North King St., Honolulu, HI 96817
(808) 536-9311

Owner: Al Harrington

Studio Manager: John Kahale Chang

●●● SUMMIT INTERNATIONAL STUDIO
1240 E. 800 North, Orem, UT 84057
(801) 224-4444

Owner: Summit International Studios

Studio Manager: Joe Spear

●●● SUN VALLEY AUDIO
808 Warm Springs Road, Ketchum, ID 83340
(208) 726-3476

Owner: Amos Galpin

Studio Manager: Amos Galpin

Engineers: Lance Parker, Randy Young

Dimensions of Studios: 32 x 23 x 16 (ceiling); piano room 9 x 15.

Dimensions of Control Rooms: 15W x 25D w/'The Wedge' patented control room.

Tape Recorders: Stevens w/BTX, 24 track; Ampex ATR-104 1/4", 2 track; Ampex ATR-102 1/2", 2 track; Nakamichi cassette; (10) Akai cassettes.

Mixing Consoles: ICC 9000, noise gates and limiters and automation in each channel, 24 x 24.

Monitor Amplifiers: Hafler, PS Audio.

Monitor Speakers: JBL and TAD custom monitors, JBL 4430s, MDM TA-2s, Auratones.

Echo, Reverb & Delay Systems: (3) Lexicon PCM 60s, (4) ICC plate reverb system, live echo chamber 30 x 20 x 16 high, Lexicon 93, Echotron, Fostex DDLs.

Other Outboard Equipment: Eventide 949, Eventide flanger/phaser, Kurzweil AS 250, LinnDrum, Simmons head, (10) Akai cassette recorders for real-time duplicating, unreal in-house technician.

Microphones: AKG Tube, 414s, 460Bs; Neumann U87; Sennheiser 421s; various Shure.

Instruments Available: Kurzweil AS 250, Yamaha 9' grand piano, Prophet 5, studio drum sets.

Rates: \$70/hr, block rates available.

Direction: To fill out a full service profile, Sun Valley Audio has developed a pro audio and recording equipment division to provide equipment and tech. support to the growing numbers of 4- and 8-track studios in the state. Dealerships include JBL, Otari, 3M/Scotch audio tape, Lexicon, Eventide, Hafler, QSC, and Kurzweil.

●●● SURREAL STUDIOS
355 West Potter Dr., Anchorage, AK 99518
(907) 562-3754

Owner: Kurt Remann

Studio Manager: Lauren Koch

●●● SWINGSTREET STUDIOS
620 Bercut Dr., Sacramento, CA 95814
(916) 446-3088

Owner: Commonwealth

Studio Manager: Larry Lauzon

Engineers: Martin Ashley (chief eng.), John Baccigaluppi, Larry Lauzon, Craig Liveitch

Dimensions of Studios: 34 x 37; iso booth 12 x 15; drum alcove 8 x 9.

Dimensions of Control Rooms: 20 x 23.

Tape Recorders: MCI JH-16, 8/16/24 tracks; (2) MCI JH-110B, 2 track; (2) Technics M85, cassettes.

Mixing Consoles: Quad/Eight Pacifica, 28 x 24.

Monitor Amplifiers: UREI 6500; Yamaha P2150; McIntosh 2100, MC 240.

Monitor Speakers: UREI 813-A Time Aligns; JBL 4333, 4313, 4311; Auratone 5-C.

Echo, Reverb & Delay Systems: Lexicon 224 digital reverb, AKG BX-20E reverb, Lexicon 97 Super Prime Time, Yamaha Rev-7 digital effects, Eventide H-910 Harmonizer, Marshall Time Modulator.

Other Outboard Equipment: UREI 1176LN limiters, Teletronix LA-2A limiters, Allison Gain Brains, Quad/Eight CL-22 companders, ADR/Scamp expander/gates, ADR/Scamp Auto-Pan, Aphex Aural Exciter, UREI 527S EQ, Pultec PEQ-1 SEQs, Pultec HLF-3C filter, 28 channels dbx, video security system.

Microphones: Neumann U47 FET, U67, U87, KM-84; AKG C414EB, C451, C34; Countryman EM-101; Crown PZM 30, 31s; E-V RE20, 654A, 666, 667A; Sennheiser 409, MD-421; Shure SM7, SM53, SM57, SM58, SM81, 545, 300; Sony ECM-22, ECM-280; RCA 77-DX; Altec M-30.

Instruments Available: Yamaha C-3 grand piano, various percussion, total instrument rental available.

Rates: Available upon request.



TARPAN STUDIOS
San Rafael, CA

●●● TARPAN STUDIOS
1925 Francisco Blvd. E., Suite G, San Rafael, CA 94901
(415) 485-1999

Owner: N.M. Walden

Studio Manager: Janice Lee

Engineers: Dave Frazer, Gordon Lyon, Stuart Hirotsu, Doc Shaffer (systems eng.)

Dimensions of Studios: 25 x 35 irregular (including isos); ceiling: 12 x 14; drum booth: 9 x 8 x 12.

Dimensions of Control Rooms: 19 x 18 w/ceiling from 12' to 9' to 14'.

Tape Recorders: Studer A80 VU MkIV, 24 track; MCI JH-24, 24/16 track; (2) Ampex ATR-102 (1/2" & 1/4"), 2 track; Technics RS-B100 cassette deck; (2) Technics RS-B50 cassette decks; (2) Otari MX5050-B, 2 track.

Mixing Consoles: Trident TSM, 40 x 32 with Allison automation.

Monitor Amplifiers: Control room: Crown DO-2000s with Delta Omega modules; studio: BGW 750; cue: (2) Crown D-150 Series II, Crown PS-400.

Monitor Speakers: Control room: UREI 813A, Yamaha NS10M, TOA ME265, Auratones; studio: UREI 811.

Echo, Reverb & Delay Systems: AMS digital reverb, Ecoplate I, Eventide 949 Harmonizer, Lexicon Prime Time, DeltaLab DL-4 w/memory module, Marshall Time Modulator, A/DA SD-1, anything available upon request.

Other Outboard Equipment: UREI LA-4s, Teletronix LA-2A, Symetrix gates, Allison Research Kepex & Gain Brains, anything available upon request.

Microphones: Full complement of Neumann, AKG, Sennheiser, Beyer, Shure & PZM microphones.

Instruments Available: Baldwin 9' grand piano.

Video Equipment & Services: Q.Lock 310 synchronization; anything available upon request.

Rates: Please call for rates.

●●● TELEMATION PRODUCTIONS/AUDIO
1200 Stewart St., Seattle, WA, 98101
(206) 623-5934

Owner: Telemation Productions Inc./Salt Lake City, UT

Studio Manager: Michael C. Olds

—LISTING CONTINUED ON PAGE 170

Valley Introduces Rent Control for the High Rent District.

Valley People moves in some pretty exclusive circles, but we have never been snooty about our connections. Actually, we've had our noses to the grindstone, breathing better value into our products through improved manufacturing techniques.

The result is that we have been able to bring the cost of owning a Valley down, and pass these production savings on to you. Valley has taken the responsibility to match your budget without cutting corners in quality.

The Dyna-mite (the industry's hottest multi-function signal processor) is our first product available under this new format. Future products will also benefit from our production streamlining. You will find the same rugged sturdiness that you expect from Valley, but at a dramatic savings.

Your return on investment on a rack system has never been better. We've repriced the 800 Series frames for greater affordability, so you can take advantage of modular signal processing at a better price per position.

Valley is committed to bringing you advanced technology at a competitive price. Call your local Valley dealer today! Discover how you can live it up in the high rent district.

VALLEY PEOPLE INC.

P. O. Box 40306 • 2817 Erica Place
Nashville, TN 37204 • (615) 383-4737
TELEX 3785899 • NASH AUDIO

Valley People International • C/O Gotham AG, Regensdorf Switzerland • Telex 59222 gothm ch, Tele 0041-1-840-0144

Circle #133 on Reader Service Card

THE BEST OF BOTH WORLDS

under one roof



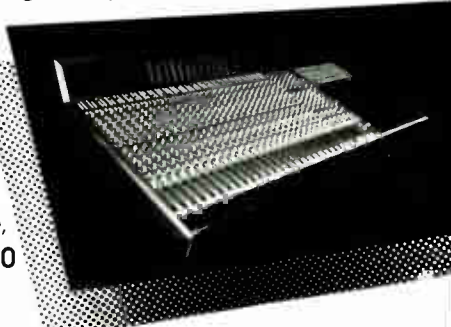
- ◀ **ACES MT-24:** 2" 24 trk
\$19,950.00
- 2" 16 trk., pre-wired 24 trk
\$14,950.00
 - 1/4" and 1/2" MT2 and MT4
\$4,950 and \$6,950

24 TRACK MACHINE FEATURES:
 +4dBm IN/OUT • 15/30 ips • Full-Function
 9 cue position remote-autolocator • stand
 • 50% range vari-speed

ACES ML24: ▶

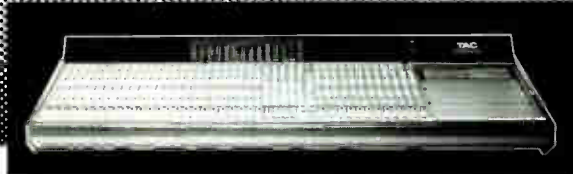
I/O console, 32 in. X 24
 buss, Integrated wired
 patch bay - **\$17,025.00**

- **ACES SM16:** Split console,
 32 in. x 16 buss - **\$15,665.00**



AMEK-MATCHLESS

- **\$ 21,500.00**
 including
 pedestal ▶
- 24 buss/24 track
 monitor
- 26 I/O modules
- 8 dedicated sends and
 returns
- 2 programmable muting
 groups



- Selective VU or Peak metering
- 8 groups usable as mono/
 stereo sub groups.
- Separate mike/line gain con-
 trols
- 4-band semi-parametric EQ
- Optional TT handwired 192 pt patch
 bay
- Also available 36 input with patch bay
 and pedestal - **\$29,950.00** as shown.



◀ OTARI MX-70 1" 16 Track Recorder

MX-70 features a microprocessor-controlled constant-tension transport, a full-function remote controller, exceptional audio electronics, and connectors for interfacing to any SMPTE/EBU time code based editing system, controller, or synchronizer. **\$14,950.00**



619 S. Glenwood Place
 Burbank, California 91506

818/843-6320

Circle #137 on Reader Service Card

◆◆◆ WESTCOAST RECORDING
 also REMOTE RECORDING
 600 E. Franklin St. Suite E, Monterey, CA 93940
 (408) 372-STAR
 Owner: T.R. Culbertson
 Studio Manager: Matthew Schuss
 Engineers: Michael David (chief), Roger Eddy, Tom Bruchs,
 Robert Adams.
 Dimensions of Studios: 22 x 22.
 Dimensions of Control Rooms: 14 x 22.
 Tape Recorders: 3M 24/16 track; Ampex/TEAC, 4 track;
 (2) Ampex, 2 track; Tascam, 2 track; Tascam cassette; Sony
 digital/mastering.
 Mixing Consoles: Custom designed by Gail Martin & Asso-
 ciates, 32 x 24.
 Monitor Amplifiers: (2) Crown DC 300A, Crown C60, Mc-
 Intosh 275.
 Monitor Speakers: UREI Time Aligned, JBL 4430 Bi-Radial,
 4411, 4311, 4301, Auratones.
 Echo, Reverb & Delay Systems: EMT stereo plate, (3) Rol-
 and SDE-3000.
 Other Outboard Equipment: (2) ADR Vocal Stresser, (2)
 Aphex Aural Exciter, (4) dbx 904 noise gates; (2) 903 Com-
 pressor, RM 160 compressor, 162 compressor, noise reduc-
 tion, Dolby noise reduction, 26 channels of dbx, (2) UREI
 1176LN, (2) Roland Dimension-D, White room EQ, DOD &
 UREI EQs, full synchronization, AKG & Sennheiser head-
 phones.
 Microphones: Neumann U87; AKG 414s, 451s, 415s,
 D58Es; Shure SM58s, SM57s, SM56s, SM53s; Sennheiser
 MKH 405s, MK 404s, MD 421s, MD 441s.
 Instruments Available: Emulator II, Yamaha DX7 & (4) TX7,
 Kawai 6' grand piano, Yamaha RX-11 drum machine.
 Video Equipment & Services: Complete real time audio &
 video tape duplication facilities.
 Rates: Hourly & project pricing available, please contact us
 for very competitive rates & information.

◆◆◆ THE WINERY RECORDING STUDIO, LTD.
 240 Kaupakalua Rd., Haiku, Maui, HI 96708
 (808) 572-1560
 Owner: Harry Davisson
 Studio Manager: Jack Fisher

◆◆◆ WOMACH RECORDING STUDIO
 also REMOTE RECORDING
 E. 122 Montgomery St., Spokane, WA 99207
 (509) 327-7784
 Owner: National Music Service
 Studio Manager: Cary Wakeley

◆◆◆ WOODMONT BEACH STUDIOS
 P.O. Box 98553, Seattle (Des Moines), WA 98188
 (206) 941-2430
 Owner: Rich Rogers
 Studio Manager: Rich Rogers

MIX CLASSIFIEDS

The Industry Source

*Whether you're looking to
 buy or sell equipment,
 supplies or services; or if
 you've got jobs or talents
 to offer, Mix Classifieds
 are the cost-effective way
 to reach 75,000 potential
 customers. Turn to page
 176, or call Lauri at
 (415) 843-7901 for more
 information.*

Mix: There aren't that many videos that are able to present feature film effects and production quality for three or four minutes that are really believable.

JV: It's because of cheap sets. Sets that are just fronts that aren't lit right. Another thing is movement. In most videos there are so many stupid still camera shots. Everything we do is on cranes. We have a 360 degree head on top of these things so you can move the camera all over the place. You have to keep the picture moving to keep people interested.

Mix: What are some of the commercials you've got going right now?

JV: We're doing Prudential Life Insurance right now. It's going to have a frog that changes into a prince in a tornado, then the prince and the princess walk away into this beautiful landscape to the rock of Gibraltar at the end of this windy road. We did a Kikkoman spot with a facial appliance, where an oriental spokeswoman who pulls her face off at the end of the spot and becomes your traditional housewife. We just completed a Child World spot with an automated panda bear.

Mix: We've covered commercials, industrials and music videos, what about features, anything you can talk about at this point?

JV: We're working on three feature films, at least in the discussion stages. We've done a lot of designs for two features right now that the producers would very much like us to do the effects for. We're doing little miniatures of the creatures and sending them down to Los Angeles. They're using them to go to the movie

companies to get distribution set-up. We're also working on two features of our own. One has dragons in it, the other one is a space fairy tale. They are probably going to be some of the most original movies anyone has ever seen, because no one has ever done the techniques that we're going to use. I think there are only five Tony McVeys in the whole world. We don't have to worry about somebody else trying to do what we're going to do, especially with his expertise with stop motion.

Mix: Let's talk a little bit about the Stage 39 acquisition or merger.

JV: It's an acquisition. Ron Eveslage got sick of running a business. He is a great cameraman. When he started out, he shot *American Graffiti* and then just started doing more work for the networks. A few people convinced him that he should enlarge his facility and just try to do commercials and industrials. So with that he just sunk all his money into this place, had it remodeled and had his facility built. The problem was the lack of national and regional marketing to round out the sales effort. Tony and I decided to see what we could do with the operation. So we have several investors involved. We're just waiting for the best deal to come through now. You don't need people that aren't in the effects business getting involved when they don't know what they're doing. So Tony and I will be in charge of this company. That's why we bought it or are in the process of buying it. Ron is going to continue to be here but he's going to be working his own business out of here doing just news. He doesn't want to deal with the business end anymore. It'll be called McVey and Vogt Productions Inc.

Mix: Let's talk a little bit about the key players on the special effects level who you'll be bringing into the company.

JV: To start off, these people are coming because of friendships Tony and I have had with them. So, with this whole working friendship kind of thing, we've been able to put together a very tight team of people. This includes someone who was the supervisor for all the effects animation for several major films, including *Star Trek II and III*, *Raiders of the Lost Ark*, and *The Empire Strikes Back*. We have another person who was one of the head model makers at LucasFilm. We have another animator who is a cell animator who is working at Lucas now and has committed himself to our projects. The other neat thing is that people are finding out about us and calling us wondering when their opportunity to start working for us is going to happen.

Everything we do, we work on as a team. I want everybody to know as far as effects are concerned they can afford it; we're not going to rip them off. People can charge anything because it's art, but we want to charge a fair price for what we're doing. We're working on another project with some very wealthy kids in Geneva, Switzerland. They are getting ready to do a feature film and they're giving us a hundred grand to do a fake trailer for this feature. We're going to start shooting January 1st. An eight-minute trailer. They approached us through Maggie and Triad in L.A. The thing I would like to emphasize is that we can do world class animation and special effects right here in San Francisco. Artists and producers who want to use special effects don't have to be scared off by high prices for this kind of work. ■

—FROM PAGE 26, NEWMAN

to sing imaginery thoughts when it's not a question of tempo, it's a question of mouthing words while other people are speaking.

I must say that in every case Attenborough was very patient and very considerate of our needs; when we used the earpieces, the so-called "earwhigs," which we used a great deal on *Amadeus* and *Fame*. They are little inductive earpieces; they go in the ear canal and you run a loop of wire around the stage. The wire becomes an analog of a speaker. Anything induced in the loop is picked up in the earwhig.

Mix: When did you use these earwhigs?

Newman: It's alright to use the thumper if people are dancing but if people are singing... let's say you have a situation as in the song "Hello 12;" some people are singing while people are speaking. In that case it's not possible to do a playback and a live dialogue record-

ing unless one wants to dub the dialogue. If you use the earpieces, then the people who are singing can hear what they have to mouth the words to to create the impression that they're singing and you can still record the dialogue.

And then we decided to use these; I think we put out 12 or 14, that's quite a large number. We only did it once, on that song. We had planned to do it on that song. I had seen rehearsals of it on Saturday and knew pretty much how it was going to be shot, and I knew how many earpieces we'd have to have with us. But the usual happens when you use the pieces: we set up; some of them didn't work, for some of the people it was too loud or too soft. It always takes a few minutes to sort that out. And Attenborough was amazingly patient. Another director would have said: "Forget it, let's move on." He said, "OK. Let's take a few more minutes." I told him what the problems were. And the few more minutes paid off.

Mix: Well, the point is it's intended to save you money somewhere else.

Newman: Yes. And also a certain amount of intangibles because if you cost out what looping costs versus production time, there is no question that looping is cheaper than production time. But there are other elements involved: if you break your neck and have actors break their necks to produce really terrific performances of the moment, why are you bothering if you're going to loop? So, somewhere there is a balance between how much you loop and how much you do live depending on the rigors of the show, the actors and the production requirements.

Mix: How much looping did you do?

Newman: Less than ten percent. Most of the time we do less than ten percent, you just have to fight. You can't be a soundman and do location work and not be assertive and not fight for good soundtracks. ■

CLASSIFIEDS

Acoustic Consulting

ACOUSTIC SPACES DESIGNER/BUILDER

All aspects of recording studio and video facility design and construction.

Residential and commercial soundproofing and renovations.
PO Box 884 Woodstock, NY 12498
914-331-1726

Employment Offered

Sales—Recording, Music Studio management, record production co. needs aggressive person for O/S sales, contact work. Recording, music business experience a must. Great opportunity in competitive field. Correspondence to: P.O. Box 7139, Berkeley, CA 94707.

Employment Wanted

Musician/recording engineer w/substantial experience in auto sales/mgt/finance seeks position w/major recording equipment sales/mfg co. Will relocate. Resume, salary history and references furnished on request. Chris Grigsby (303) 421-5350 x352/(303) 469-6573.

Equipment Rental

NEW YORK  NASHVILLE

"The Audio Rental People"
DIGITAL RECORDERS • EFFECTS SYNTHESIZERS • WIRELESS MICS AUDIO FOR VIDEO • TIME CODE
1619 Broadway NY (212) 582-7360

Equipment For Sale

LOW OVERHEAD MEANS LOWEST PRICES. We carry most major lines of pro audio & recording equipment. **Get your best price, then call me.** 3M Tape and accessories at factory prices.

S.C.M.S.
East U.S. Toll Free:
(800) 438-6040
West & N.C.: (704) 889-4509

Sam Ash Music Store Mail Order Service. Deal with the professionals. N.Y.C.'s largest inventory and best prices on musical instruments, sound and recording gear. 1-800-645-3518. N.Y. State 1-800-632-2322.

SYNTHESIZER BLOWOUT!

Tired of impersonal service? You think you're getting your best deal? Try Starsound Audio for free! 1-800-354-7252. Fluid synthesis spoken here. Studio mixer, \$1,500; Tascam Model 10 \$500. Most major lines in stock. Call for free studio gear hot sheet. Crown, T.E.F. analysis available IN YOUR STUDIO or here. David, Tom, Scott or Bob.

VINTAGE MIKES

Call Bill Bradley
(312) 751-1216

DANBURY ELECTRONIC MUSIC CENTER, 84 Federal Road, Danbury, CT, 06810, (203) 792-2794. New England's oldest and most experienced Tascam dealer. All professional recording equip. and supplies from stock plus widest selection of electronic keyboards including Yamaha DX-PF.

Reliable Music

featuring
RECORDING STUDIO, BROADCAST AUDIO &
SOUND REINFORCEMENT EQUIPMENT.

HOW CAN WE HELP YOU?

• QUALITY AUDIO • GUARANTEED PERFORMANCE
• DEPENDABLE SERVICE • COMPETITIVE PRICES
704/375-8662
PRO AUDIO DIVISION 1001 S. INDEPENDENCE BLVD.
CHARLOTTE, NC 28202

Looking for Eventide SP-2016 or H949? Space Station, Banner RTA, ADR Scanner. Need AKG, BGW, dbx, E/V, Neumann, Orban, Sennheiser, Shure, Technics, UREI or White products? Call UAR for the best quote: (512) 690-8888, 8535 Fairhaven, San Antonio, TX 78229.

SIGMA SOUND STUDIOS GREAT EQUIPMENT BUYS:

24, 2-trk recorders, console automation, synchronizers, hi speed dupe equip plus lots of audio processing gear.

Call or Write:
212 N. 12th St., Phila., PA 19107
(215) 561-3660

New Used & Demo Soundcraft, Neotek, Otari, Akai, Klark-Teknik, Nakamichi, dbx, E-V, Crest & Ursa Major. Best prices on the best gear.

Like new Otari MX 7800 w/remote \$5,900. UREI 6500 new \$1,499. ADR Scamp system. Neotek Series III 28x24 \$29,500. Neotek 1E 16x8 w/PB/Prod. desk \$7,995. Otari 8D 8 trk \$3,395. UREI LA4/Pair \$699. Hammond C3 w/Leslie B/O. Call **Pyramid Audio Inc** (312) 339-8014. **Call Us Last!**

KURZWEIL, AKAI & AUDIO-TECHNICA. Best prices on the new Kurzweil 250 & Akai MG1212. Complete studio packages available. New & used, buy and sell. SOUND ADVICE (205) 252-2632.

API

API Audio Products Inc. (formerly Wolff Assoc.) is now the sole source for all API products. New modules, new consoles, used consoles, service, etc. API Audio Products Inc., 7953 Twist Lane, Springfield, VA 22153, (703) 455-8188. Tlx: 510-6001-898.

APSI 32x24 recording console, six sends, four band semi-parametric EQs, LED metering, mike patching, spare modules and power supply. Very flexible and clean board, only three years old, affordably priced. (201) 673-5680, Chris.

16 Track Package

Tascam M15 & 85-16, Otari MX 5050B, 6 foot plate reverb, fully wired patch bay, producers console included. \$15,000 or B/O. (916) 424-8772 or (916) 447-2553 Jeff.

IF YOU'RE NOT USING IT —SELL IT!

Your national clearinghouse for used audio and video! Call for free copy of our latest listings, or to list your used gear free.

The Bertech Organization
Call toll free: (800) 992-2272
In Calif. call: (818) 909-0262
THINK BERTECH FIRST!

3M M56 16 trk w/Selectake, NEO-TEK 16 trk Series II w/mods: \$7,000 each, or \$13,000 for both. Quad Eight 16x4 monitor console \$1,000. Limiters, reverbs, & more...SEA-GRAPE RECORDING STUDIOS. Chicago, IL (312) 784-0773.

24 TRACKS \$15,500!

That's no mis-print — that's your total price for a brand new 24 trk deck! The ACES Co. of England makes a complete line of studio gear, built to rugged top quality standards all avail. at un-heard of prices, 32 input in-line console—\$12,500! This board has all the features at the right price. Why even consider semi-pro 16, or used 24 trk equip when you can have brand new

full featured gear all with a **2 YEAR WARRANTY.** Call or write & find out how you can **GO 24 TRK TODAY!** Contact **ROCK STUDIO SUPPLY**, Box 5997, Norman, OK 73070, (405) 329-8431.

MCI/Sony Leasing

JH-24 w/AL III, Sony APR 5002, JH600-36 automation, Sony MPX 3000-36, Sony PCM-3324 digital. "O" Down, *60 Month, *Easy terms, *Tax deductible, *ITC. Dick McCalley (612) 432-4742.

Automated Processes Console 16x4x2 w/24 mainframe, custom built w/550 EQs, 515B input modules, 2-525 limiters, 575 oscillator, 475 faders, in place solo, 23 meters; AKG C-12 original tube mike, mint condition (205) 595-8497.

EMT 251/250 \$14,750, AMS 1580S \$5,200, ATR104 \$7,250, U67 \$1,100, Speck 33x16 Pro. Rec. console \$6,100, MCI 24CH 416 w/P&G 11K, Dolby 361s 4-\$2,800, Stephens 24 trk \$15,950 or MM1200-24, H949 \$1,875, Aphex Cx1+2 EQ, F1 rack \$875, ATR102, Vocal Stresser, Prime, LA2, LA3, 160, 161, 77dx, grand piano, lots of outboard, mikes, amps, misc. Equip. is operating in good condition. Will consider ALL offers for FAST sale. After 10 a.m. or before, 1:00 a.m. Pacific — Call (818) 784-2143.

KURZWEIL, AKAI & AUDIO-TECHNICA. Best prices on the new Kurzweil 250 & Akai MG1212. Complete studio packages available. New & used, buy and sell. SOUND ADVICE (205) 252-2632.

For sale 24 Dolby A's available as a set of 16 or 8 or 24, \$10,000. Contact Robyn (212) 226-4278.

Tascam 90-16 16-track recorder w/full remote, dbx & auto loc. Excellent condition. Will include alignment tapes, \$7,500. Call Kurt at (215) 642-2346.

Tascam 15B 16x8 w/P&G subgroup faders and mods \$3,800, Otari MX5050 8D w/dbx 155s NR \$4,000, Pioneer RT 2022 1/2 trk w/extra electronics & remote \$600. Entire pkg. \$8,000 or best offer. Call Greg or Tom (201) 481-0972 or 877-2010.

24-TRACK RECORDING STUDIO Excellent Manhattan location, well-established clientele. Sale or partnership w/options available. Send name and phone number to: P.O. Box 8130, FDR Station, NY, NY 10150.

Pentagon High Speed Duplicating System cassette and 1/4" open reel full track mono masters, 3 Slaves, and 1 cassette rewinder like new, best offer. (212) 245-6770 David.

**NEW, USED, DEMO SALE
RECORDERS, CONSOLES,
OUTBOARD EQUIPMENT**

Soundcraft 2400, Lexicon 200, Aphex type B, Eventide H969, Tascam 16 trk, BTX Shadow, Orban Comp/Limiters, Much more... OTARI, AMEK TAC, FOSTEX, JBL, NEUMANN...
E.A.R. PROFESSIONAL AUDIO
(602) 267-0600

Studiomixer 16x4x4x2 with ATA road case \$1,750. Mini-Doc synchronizer \$295. J.L. Cooper MIDI Sync I, MIDI Sync II: \$100 ea. All excellent condition! Call (800) 835-0603 or (316) 232-1896.

Many items of recording equipment available from Europe at much lower prices than in the USA. Phone for details (813) 238-3900 (U.S.) or 011441-3904535 (U.K.), for EQ and AMS DDLs from \$3,000, Soundcraft 2400 console \$25,000.

Mixing consoles for sale: 32x4x2 TOA P.A. board with 4x8 matrix, never been on the road... Also 32x16 Pulsar stage monitor board immaculate condition. \$25,000 or best offer. Will sell separately. Call Kevin at Nashville Teleproductions. (615) 865-5897.

**SOUNDSTAGES
—NIGHT CLUBS—**

This is the deal of the year. Beefy 5-way P.A. Gauss 18", 15", C.V. 12", Altec Horns from 30 cycles on up, 6 amps approx. 4,000 watts. #2-5 way X-over stereo para. EQ, 2 dbx 160x, 4 ch. noise gates, DDL, harmon., all in 2 road cases. 16x4x2 console w/16 direct outs. 100 ft. 16 ch. 4 send snake. 4 3-way stage monitors w/Emilar coax speakers & custom 400 watt 3-way x-overs. Array of mics, stands, cables. Almost all items still w/warr. in mint condition. Never on the road. Orig. cost \$30,000, sell all \$10,000. (818) 888-5087.

24T DOLBY A RACK

complete with XLR interface
in great condition
\$6,000 Can
LSM 201 West 7 Ave Vancouver
Canada. (604) 873-4711

STUDIO SUPPLY

Trade-in sale. Used Harrison, MCI, Sphere & Soundworkshop consoles for sale. Used Ampex and MCI tape machines, various outboard equip. includes Lexicon 224 reverbs taken in as trades on our new equip. Sales, new equipment also available. We are new dealers for MCI, Amek, AMS, Lexicon and other fine products. Call (615) 366-1890. John, Randy, or Linda.

MCI SPARE PARTS

MCI JH-400 console parts, power supplies, master, status, input mods, meters, patch bays, misc. parts. JH-10 motors, meters, circuit boards (audio & deck). Power supplies, etc. JH-100 torque motors & meters. Call Randy Blevins (615) 361-8429 or (615) 366-1890.

**AKG ACOUSTICS DIRECT
FACTORY REVERB SALE**

BX-25E Reverb units available w/ or w/o digital delay. Brand new unit for sale at LESS THAN HALF off suggested RETAIL PRICE. Call AKG ACOUSTICS, STAMFORD, CT (203) 348-2121. Attn: Dick Ravich or Tom Bensen.

Instruction

BE A RECORDING ENGINEER!
New classes quarterly.
INSTITUTE OF AUDIO/VIDEO
ENGINEERING
1831 Hyperion, Dept. E
HOLLYWOOD, CA 90027
(213) 666-3003

**LEARN FROM THE
PROFESSIONALS**

By Carol Kaye:

- How to Play the Electric Bass . . . \$4.95
- Electric Bass Lines #1 3.95
- Electric Bass Lines #2 3.95
- Personally Yours 4.95
- Electric Bass Cassette Course . . . 35.00
- Electric Bass Lines #3 3.95
- Electric Bass Lines #4 4.95
- Electric Bass Lines #5 3.95
- Electric Bass Lines #6 3.95
- How to Play Elec.
- Bass Chords 4.95

And Much More!

Please write for a free catalog.

Foreign postage: \$2.00 1st book, \$1.00 ea. additional. \$1.50 for cassette. \$8.50 C.K. Bass Cassette Course - \$13.50 to Australia, N.Z. & Asia.

Sorry, no CODs. Colorado add 6% tax. Good store discounts.

GWYN PUBLISHING CO.
177 Webster St., #272
Monterey, CA 93940

GOOD MUSIC MAKES A HAPPY WORLD

NEED ANSWERS?

The best instructional books and tape courses on all aspects of the recording industry, audio, video, and the music business are now available from one source.

The MIX BOOKSHELF
2608 Ninth Street
Berkeley, CA 94710
(415) 843-7901

Send for our free catalog listing hundreds of titles.

**Instruments
For Sale**

Bill's Music has thousands of hard to find new & used musical instruments and accessories in stock. We ship anywhere! Call or write! Bill's Music Warehouse, PO Box 3157, Baltimore, MD 21228 (301) 788-8900.

**Maintenance
Services
& Repair**

**New York Technical
Support, Ltd.**
IS
SERVICE



"We are factory trained by Studer, Otari, MCI, Ampex, 3M, Neve, Trident, and Scully. Our work is guaranteed."

**CALL
GREG HANKS
914-778-2112**

1440 Midland Ave., Suite 10
Bronxville, NY 10708

AMPEX
Parts — Tape — Recorders
Northwestern Ind.
1-800-547-2252

EQUIPMENT REPAIR, MAINTENANCE MODIFICATION & INSTALLATION. ACOUSTIC CONSULTATION & DESIGN. Reasonable rates, Dependable, reliable, expert service.

BASE
(415) 469-0136—San Francisco, CA

Records & Tapes

DISC MASTERING — Cut from your tapes at low cost — Plating, Pressing, Labels & Jackets — LPs, EPs & 45s. Write for free information:

THE CUTTING EDGE
Box 217 M
Ferndale, NY 12734
(914) 292-5965

**PROFESSIONAL RECORDING
SUPPLIES**

We are a major distributor of Ampex, Agfa & 3M bulk & reel master tape from 1/4" to 2". We also stock empty reels, boxes, video cassettes, Norelco boxes & other recording supplies. We manufacture custom length bulk cassettes using top quality tapes. Cassette duplication service available. Please call or write for our FREE catalog.

Advance Recording Products
7190 Clairmont Mesa Blvd.,
San Diego, CA 92111
In Calif: (800) 858-1061
CA Phone No: (619) 277-2540
Outside Calif: (800) 854-1061

REAL-TIME CASSETTE DUPLICATION Superb quality from your Analog or Digital masters. VIDEO CASSETTE DUPLICATION Stereo VHS Hi-Fi, or U-Matic. Competitive rates. (303) 694-6642 Mirror Image.

REAL-TIME

Best Quality Cassettes using Nakamichi decks only. Custom loaded Agfa or BASF Chrome. Label and insert printing, shrinkwrap, blank tapes. SUPERB QUALITY AT LOW PRICES
Uni-Sette, Inc. 5125 Marconi Ave., Carmichael, CA 95608. (916) 485-9534.

**FACTORY DIRECT
PRICES ON 3M TAPE**
We can save you money.
Over 60 lines of professional recording equipment.
STUDIOWORKS
(800) 438-5921

Diskmakers

**RECORD PRESSING
CASSETTE DUPLICATION**
SEND FOR OUR PRICE LIST
CALL TOLL FREE
1-800-468-9353
925 N. 3rd St., Phila., PA 19123

Eastern Standard Productions



ABSOLUTELY the BEST QUALITY and SERVICE at ABSOLUTELY the BEST PRICES FREE BOXES with any order Real Time Cassette Duplication 26 Baxter Street Buffalo, NY 14207 (716) 876-1454

BULK CASSETTES C-60 AS LOW AS 39¢. Custom length available, also BASF, Agfa, poly and norelco boxes. Blank and printed labels, Apex printing. Cassette and real-time dup. For pricing call MASTER CASSETTE (800) 228-8919; in AZ (602) 234-3023.

CASSETTE PRODUCTIONS, INC.
35 years state-of-the-art tape duplicating. Real-time or high-speed. Full service, fast delivery, any quantity. Call JULIUS KONINS, (201) 666-3300, 109 Prospect Pl. Dept. M, Hillsdale, NJ 07642.

Super Low Prices on Agfa BASF, Ampex and Mag Media, Bulk Cassettes and Accessories. Real-time and High Speed Duplication. Call or write for prices and brochure. TRAXX RECORDING PRODUCTS, 24 Crest Way KC, New Fairfield, CT 06812 (203) 746-3561.

CASSETTE DUPLICATION Reel time and high speed 12 trk recording quality and pride keep us both satisfied. Paradise Sound Inc., Box 63, Index, WA 98256. (206) 793-2614.

ACCURATE REPRODUCTIONS!
STUDIO 91 sells audio confidence! We use only quality materials and **INFONICS** in-cassette duplication equipment. If you want the assurance of **ACCURATE DUBS**, call us with your next cassette duplication order. We specialize in short runs (5-500). Call toll-free (800) 533-5353 [in Michigan (616) 471-3402].

AMPEX 406 & 407

Blank 1/4-inch tape on 10 1/2-inch reels NAB centers. Available also on 7-inch reels with or w/o boxes. For info send SASE to Reels—Cassettes, P.O. Box 263, Riverside, IL 60546.

CASSETTE DUPLICATION—REAL TIME and High Speed. Fast turnaround. Quality custom loaded blank cassettes. Quantity discounts. Call or write for prices: **BATISH RECORDING**, 1310 Mission, Santa Cruz, CA 95060. (408) 423-1699.

Studios For Sale

24-TRACK RECORDING STUDIO
 Excellent Manhattan location, well-established clientele. Sale or partnership w/options available. Send name and phone number to: P.O. Box 8130, FDR Station, NY, NY 10150.

Successful ongoing 16-track studio between Nashville & Atlanta. Established 1979. Beautiful area. Unique state-of-the-art facility. Great sound! "Live" room. 1500+ sq. ft. Will train manager. Includes Real Estate. Lowered price for quick sale. (404) 866-2432.

CHICAGO RECORDING STUDIO
 Completely equipped 24x8 professional recording and mastering studio. Prewired for 24x24. Includes 2 bdrm apt, 2 offices, basement & 1 1/2 baths. Available with or without equipment. Sheldon F. Good & Co., 11 N. Wacker, Chicago, IL 60606 (312) 346-1500.

16 Track Recording Studio For Sale. Prime South SF Bay Area location, fully equipped. Extensive client list. \$80K. Phone (408) 985-1040.

Miscellaneous

Studio Forms

Get box labels, track sheets, invoices, etc., printed with your studio's name & address! **FREE Catalog** of specialized forms for the recording industry.

StudioForms, Inc.

186 Glen Cove Ave, Suite 201/M5
 Glen Cove, NY 11542 * 516-671-1047

MG-1212 OWNERS—ATTENTION
NEW RECORDING HANDBOOK
 Helpful techniques for the engineer who needs more than just a manual. Only \$11.50 plus \$1.50 handling, send check or M.O. to: **NORTH SIDE RECORDS**, 3237 Brighton Rd., Pittsburg, PA, 15212.

LIVEWIRE AUDIO

Serious Sounds for Synths.

JUPITER 6: "RealWorld"-pianos, organ, sax, etc. "NewWorld"-drums, noises, etc. 48 prog's, \$30 each. Both-\$50. **DX7:** From Minimoog to Simmons, choose any 32 from our vast library-\$30 (for index send \$2). **JUNO106:** 64 hot sounds, \$20. **POLY800:** Fatbass, organs, brass, 64 progs-\$20. **LOWEST PRICES** on **URSA MAJOR** products, Syntech soft/hardware. For details, write: Livewire Audio, 79 Shrewsbury, Port-AuPeck, NJ 07757. Specify synth/computer.

Crystal Inc. **PHONE TOLL FREE 1-800-826-6540**
 SOUND VIDEO GRAPHICS TN: 1-615-843-0717
 8002 Middle Valley Road, Hixson, TN 37343
HIGH ENERGY CASSETTES
 as low as **C-62: 29¢**
C-92: 35¢
 AGFA, BASF, AMPEX & ULTRATEC CUSTOM LOADING
 CASSETTE IMPRINTING AVAILABLE
 25 Years Of Service To The Music Industry

Crystal Inc. **PHONE TOLL FREE 1-800-826-6540**
 SOUND VIDEO GRAPHICS TN: 1-615-843-0717
 8002 Middle Valley Road, Hixson, TN 37343
CUSTOM DUPLICATED CASSETTES
 as low as **55¢** each
 Send Master Tape, Album, or Cassette
 25 Years Of Service To The Music Industry

Crystal Inc. **PHONE TOLL FREE 1-800-826-6540**
 SOUND VIDEO GRAPHICS TN: 1-615-843-0717
 8002 Middle Valley Road, Hixson, TN 37343
FULL COLOR CASSETTE INSERTS
\$79.00
 25 Years Of Service To The Music Industry

Crystal Inc. **PHONE TOLL FREE 1-800-826-6540**
 SOUND VIDEO GRAPHICS TN: 1-615-843-0717
 8002 Middle Valley Road, Hixson, TN 37343
FULL COLOR ALBUM JACKETS
 as low as **\$138.20** Plus Fabrication
 25 Years Of Service To The Music Industry

How to Place a Mix Classified

Please print or type in CAPITAL LETTERS and lower case. There are 8 lines to the inch and approximately 24 CAPITAL letters per line or 32 lower case letters. \$70 per inch — 1" minimum. Additional lines \$10 per line. **Bold type** \$10 per line. Black border or gray screen \$10 extra. Logos or display advertising up to 4" will be charged at \$85/inch. Multiple insertion rates available — Call for information. **Payment by check, money order or charge must accompany ad. DEADLINE is the 10th of the month, 1 1/2 months prior to publication.**

Categories Available (Check one.)

- | | | |
|---|---|---|
| <input type="checkbox"/> Business Opportunities | <input type="checkbox"/> Equipment Wanted | <input type="checkbox"/> Rehearsal Space |
| <input type="checkbox"/> Employment Offered | <input type="checkbox"/> Instruction | <input type="checkbox"/> Session Player Available |
| <input type="checkbox"/> Employment Wanted | <input type="checkbox"/> Maintenance Services | <input type="checkbox"/> Studios for Sale |
| <input type="checkbox"/> Equipment for Sale | <input type="checkbox"/> Record & Tape Supplies | <input type="checkbox"/> Miscellaneous |
| <input type="checkbox"/> Equipment Rentals | <input type="checkbox"/> Recording Services | |

Name _____

Address _____

Phone _____

I am paying by (Check one.): VISA MASTERCARD

Card #: _____ Expiration Date _____

Signature: _____

Check or Money Order #: _____ Amount Enclosed: \$ _____

Mail to:

Mix Classified, 2608 Ninth Street, Berkeley, CA 94710
 (415) 843-7901

Ad Copy: _____

Thompson insists that "guitars are still the one. The local rock scene is very healthy," he says. "We're seeing a lot of interest here in both the record and video business."

Quite the opposite is true for The Music Source, also in Seattle, where studio manager Dave Raynor reports they've done lots of commercial work and few records. In an effort to accommodate both fields, the Music Source is well-equipped with what Raynor claims is "the most keyboard gear north of Los Angeles." Of the nine synthesizers (including a Kurzweil 250) and two drum machines—most of which are married to Raynor's Apple Macintosh computer—he says: "The more I learn, the more I don't know!" To add to the confusion somewhat, a second room for overdubbing recently went on-line with an MCI 24-track and Quad-8 board. "We're ready for anything," laughs Raynor.

Rex Studios is the second oldest major recording facility in the Portland, Oregon area, yet it continues to expand and improve to keep up with changes in the audio world. Most of the studio's work in the recent past has been in the area of commercial production, but as the facility has expanded and upgraded (it now occupies both floors of its building), it has attracted more album and demo tape work, as well as video sweetening, voice-overs and more. Rex's new Amek Angela console has been getting quite a workout of late, and studio manager Rhiner Johnson says that he believes that having the console has contributed to the studio's increase in business. In the studio's recent re-design, too, steps were taken to help the studio accommodate synthesizers better: "We realized we had to address the situation because non-acoustical instruments are being used more and more," Johnson says. "So we set up areas in the control rooms for synthesizers, since that's how a lot of people like to work now. You have to be sensitive to musicians' current needs." Johnson is also excited by a system of experimental "Tube Traps" designed by the Acoustic Sciences Corporation of nearby Eugene, OR. The cylinders are placed in different parts of the studio to alter a room's acoustic properties, in effect, "customizing" the studio for each client. "They've been extremely effective," Johnson comments. "They're very versatile."

The last two studios in this update, Cougar Run and Grammys House, are both brand new facilities, and are situated in the beautiful setting of Lake Tahoe, NV. Their goals are quite similar—both plan to concentrate primarily on record projects, and are well-equipped with state-of-the-art synthesizers and electronic drum machines to accommo-



Chief engineer Howard Johnston (right) and studio manager Susan Skaggs (center) recently completed negotiations with Patrick Gleeson (left) for the change in ownership of San Francisco's Different Fur Recording. The multi-track studio's history of recording expands from the early '70s jazz-funk-rock of Herbie Hancock, through projects by Brian Eno/David Byrne, The Tubes, among others. Current projects include albums for George Winston's *Dancing Cat Records*, and a "Bay Area All Stars" LP featuring Greg Douglass, Marty Balin, Tim Gorman, Tommy Johnston, David Hayes, Tony Johnson, and Gary Malabar.

date the demands of artists in that field.

Grammys House is styled after a Victorian mansion, and owner Robert Forman says it is "like going home to your grandmother's house." The homey (brass beds even!) but high-tech facility went on-line December first, and is equipped with a Solid State Logic SL-6000 console with 32 outputs, a Studer A800 recorder, an arsenal of in-house instruments, and Forman is eager to stress that the exceptionally large (650 sq. ft.) control room was specifically designed for direct ability to allow for recording with synthesizers. "Everyone is plugging directly into the board these days, so we wanted a large atmosphere for them to work directly in the control room," says Forman. Some in-house instruments include the Fairlight III, Yamaha DX7 and TX8016 FM synthesizer, Linn 9000, various guitar synthesizers, and a 7-foot Yamaha C7 grand piano.

Though the studio is capable of film scoring and video post-production as well, Forman says his primary focus is on the music business. Forman is very enthusiastic about his new place, and is already planning construction of a second room this month.

Jody Peterson, owner of Cougar Run, is equally excited about his resort-like, yet high-tech, studio. The "inaugural voyage" at the studio was an LP project for Tigar Bell, a 19-year-old fiddle player from the Merle Haggard group. The facility is completely interfaced for MIDI throughout, with 32 tie lines/mic lines. All wired with Mogami cable, equipment includes the Neve 8106 with Ne-cam, Studer A800 ("it's like having an old friend in the control room," notes Peterson), and on order is a Colossus digital mastering system. Instruments at Cougar Run include the DX7, Linn-drums, and a Yamaha C5. Peterson adds that the provision is there for whatever additional instruments clients may want to bring into the studio, but admits that "I have a problem with just control room records... I think we're working for the technology instead of the technology working for us."

"I miss so much the human element in music today," he continues. "We've forgotten about the honesty of the music... Creedence Clearwater Revival is a fine example of a band that was honest and live—and *sounded* it. That's what we want here. We want to capture the honesty of the music." Peterson is quick to note that he understands and welcomes artists who are "technologized," but concludes: "I just can't see Merle Haggard recording with a Fairlight, can you?" ■

ADVERTISERS INDEX

PAGE	ADVERTISER	PAGE	ADVERTISER	PAGE	ADVERTISER
148	A&R Record & Tape Manufacturing	170	Filament Pro Audio	109, 131,	Professional Audio Services & Supply
92	Acoustic Spaces	42	Flanner's Pro Audio	172	& Supply
71	Advanced Music Systems (AMS)	121	Fostex Corporation of America	138	Programming Technologies
14	A.I.C. Pro Audio	85	Foundations First	139	Rainbo Records
30, 83,	Akai/IMC	65	Full Compass Systems	75	Rane Corporation
& 149		135	Furman Sound	154	RCA Records
84	AKG Acoustics	53	Alan Gordon Enterprises	163	Resolution
93	Alesis	119	Grammie's House	113	RLS Acoustics
140	Dan Alexander Audio	45	Dick Grove School of Music	94	Rocktron
103, 107	Allen & Heath Brenell	46	Bernie Grundman Mastering	179	RolandCorp U.S.
77	Alpha Audio	125	Guitar Showcase	21	Samson Music Products
11	Ampex	43	Hardy Company	24	Sanken Microphone Company
141	Aphex Systems	63	Hewlett Packard	165	Sennheiser
98	Applied Research & Technology (ART)	73	Hill Audio	95	Sequential
46	Sam Ash Music	108	IAN Communications	40	SK Enterprises
47	Audio Affects	94	Independent Sound	15	Solid State Logic
43	Audio Engineering Associates	105	Invisible Products	157	Sonic Arts
89	Audio Precision	13	JBL Professional, Inc.	9, 19	Sony Pro Audio
69	Audioarts Engineering	48	Jensen Transformers	96	Sound & Vision
123	Audix	40	JRF Magnetic Sciences	115, 143	Sound Genesis
150	Kenneth A. Bacon Associates	108	Juice Goose	& 155	
41, 159	Bananas at Large	27	JVC Company of America	180	Soundcraft Electronics
49	Bryston	145	LaSalle Music	87	Soundtracs
106	Burlington Audio Tapes	57	Lemo U.S.A.	154	Sprague Magnetics
58, 59	Carvin Corporation	37, 101,	Leo's Audio & Music	2, 104	Studer Revox
135	Cassette Technologies	133, 161	Technologies	49	Studio Consultants
137	Cerwin Vega!	17	Lexicon	127	Sun Valley Audio
81	J.L. Cooper Electronics	148	Linear & Digital Systems	53	Swintek
56	Countryman Associates	151	Littlite/CAE	158	Synchronous Technologies
39	Crown International	68	LT Sound	29	Tascam
51	dbx, Inc.	126	Meyer Sound Laboratories	97	Technical Audio Devices (TAD)
96	DeCuir Sample Case Company	79	Mimetics	16	Techron Industrial Products
78	Design Direct Sound	127	Music Annex	52	Thoroughbred Pro Audio
52	Digital Sound Technology	65	The Music Interface	91	TOA Electronics
31	DOD Electronics	166	The Music Source	151	Trebas Institute of Recording Arts
7	Dolby Laboratories	78	Music Works	160	United Tape
105	EAR Pro Audio	122	Nakamichi	169	Valley People
56	Eastcoast Sound	160	N.A.R.A.S./S.F. Chapter	140	Vertigo Recording Services
74	Eastern Acoustic Works (EAW)	22, 23	New England Digital	68	Victor's Pro Audio
100	Editron	38	New World Audio	171	Volunteer Record Pressing
147	El Mar Plastics	164	Omni Craft	92	West Monroe Music & Electronics
88	Encore Studios	99	Opti-Case	77	Wise Music
117	Eventide Incorporated	64	Orban Associates	161	World Records
157	Fane Productions	4	Otari Corporation	33	Yamaha International
		55	Panasonic/Ramsa		
		25	Peavey Electronics		
		164	Polyline Corporation		
		106	Preferred Sound		

DON'T MISS THESE MIX SPECIALS

■ FEBRUARY

Engineer/Producer Directory

- Instruments in the studio
- Studio business operations
- How studios use computers
- Special Report: Microphones

■ MARCH

Southeast Recording Issue

- Southeast Studio Listings
- Special Report: Software-based effects processors
- International Recording Update (European AES)

*Ad Closing: January 7, 1986
Materials Due: January 15, 1986*

■ APRIL

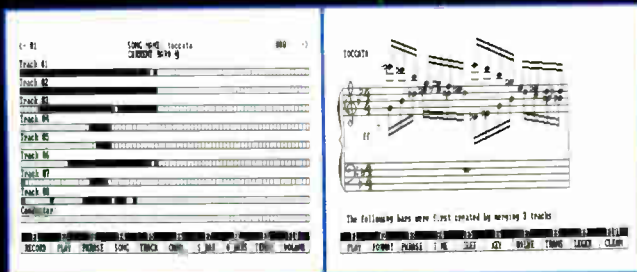
NAB/Video Production Issue

- Listings: Video Production & Post-production Facilities
- Music Video Update
- Special Reports: Video Monitors for the Studio
Wireless Microphones

*Ad Closing: February 7, 1986
Materials Due: February 15, 1986*

M P S

In this confusing new world of music software someone has finally created a computer program that is so powerful that it allows musicians to forget about learning computerese and get back to what they like doing best—music. Only now with more control and creative potential than ever before. Behind this program is the same company responsible for some of the music industry's greatest achievements. The company, of course, is Roland. And the product is called MPS. It stands for the Music Processing System. What if a musician could harness the same computer power to create music that writers use in word processing? That's exactly what MPS does. It gives you the creative freedom to develop, edit and shape your ideas into a complete piece of music, all under computer control, totally at your direction. Working together with Roland's MPU-401 intelligent interface, any IBM PC (or compatible) computer and your MIDI instruments, MPS takes you every step of the way from first inspiration to a beautifully realized printed score. The MPS system's power is unleashed in its three operating



Song Mode Arrange Page Score Mode Analysis Page

modes: Song, Score and Print. All modes are totally interactive, so that any change made in one is automatically made in the others. In the Song Mode, you assemble musical phrases into complete compositions. Use any MIDI instrument as an input device. Once phrases are entered, they can be altered, edited, combined and recombined at will. MPS Software gives you eight tracks to fill with music. Each track can be assigned to any of 16 MIDI channels and used to drive any MIDI instrument. Merge tracks or phrases as needed and reassign MIDI channels to check out how a passage sounds on different instruments. A clear, concise on-screen display keeps you up to date on track status on a measure-to-measure basis. The process continues as you move on to the Score Mode. Here, the music you've created becomes a graphic score, which can be further polished and perfected. You define keys, clefs and time signatures, transpose octaves, assign accidentals and rests...even change the direction of note flags and stems for a highly legible, musically correct score. There are three different areas on the staff to spell out song lyrics, verbal cues and instructions—everything you want to put into words. When you've finished perfecting your score, you're ready for the MPS Print Mode. Everything you've put into your on-screen score can be transformed into an attractive

hardcopy printout via the MPS Hi-Resolution Print Mode. As always with MPS software, you're in control. "Cut and paste" your score to meet your own specific needs. You can print out single parts for individual players or a complete score representing your entire composition. Print copies on your computer's standard printer with or without song lyrics or in any quantity you desire. Break into the future of electronic music production—harness the power of Music Processing with the MPS—the Roland of Music Software. For more information contact: RolandCorp US, 7200 Dominion Circle, Los Angeles, CA 90040 (213) 685-5141. **Hardware Required:** IBM-PC or full compatible (256K minimum, up to 640K), 2 disk drives recommended, IBM color graphics card and CRT monitor, Roland MIF-IPC interface card, Roland MPU-401 MIDI Processing Unit, Any MIDI-equipped Instrument(s), Optional dot matrix graphics printer (IBM compatible). **© Roland**



Roland Music Software Series
MPS
 Music Processing System
 Version No. 1.0



Roland Music Software

Circle #138 on Reader Service Card

Trademarks: IBM and PC, IBM Corp.; Roland and MPS, Roland Corp.

World Radio History

Evolutionary

The Soundcraft Series 200 has been the definitive statement in small frame consoles for years. They find homes in recording, broadcast, video production, live music, and stage productions. They have a reputation for being reliable like a rock.

The new Series 200B reflects our design experience with our TS 24, as evolution would demand. The new 200B can be used as a main console, or as a submixer for consoles costing hundreds of times as much. It's open, sweet and clean at any dynamic level, thanks to internal headroom level of +26db.

It is enormously flexible, with -10 or +4 internal switching, and full 8 track monitoring. 48v phantom power is switchable on each individual channel. There is direct assign to subgroups and to stereo busses. There are aux sends pre or post for both fader and EQ. Balanced ins and outs — and lots more.

Most of all, there's reliability which comes from 10 years experience in evolving the art of the small frame console.

That's appropriate technology. Only from Soundcraft.



*Appropriate
Technology*

Soundcraft

Soundcraft Electronics, Inc.
1517 20th St.
Santa Monica, CA 90404
(213) 453-4591

Soundcraft Electronics, Ltd.
Unit 2
Borehamwood Industrial Park
Rowley Lane
Borehamwood, Herts, England
(01) 207-5050

Soundcraft New York
1841 Broadway #511
New York, NY 10023
(212) 315-0877

Soundcraft Electronics,
Canada Inc.
1444 Hymus Blvd.
Dorval, Quebec
Canada H9P 1J6
(514) 685-1610