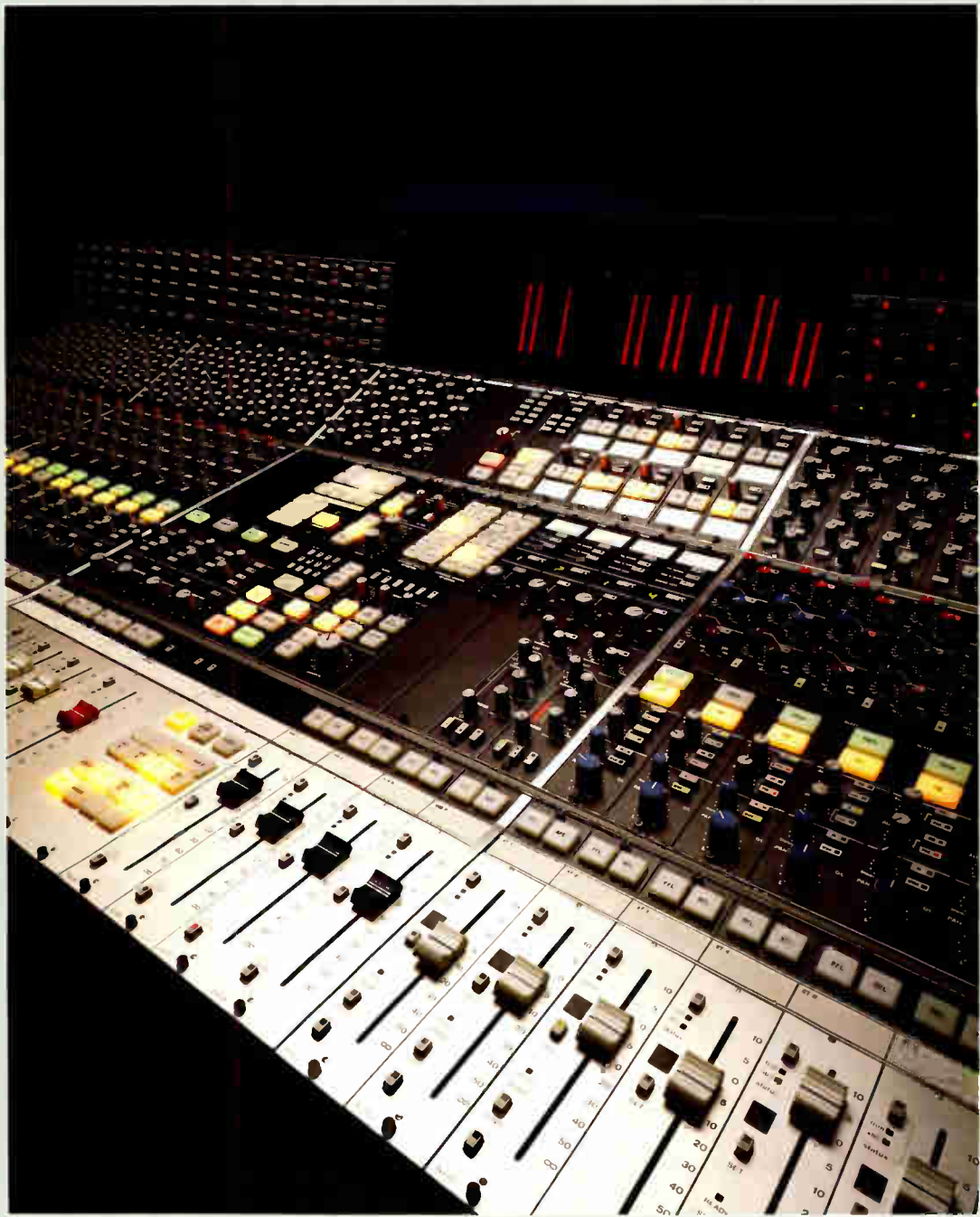




The 1986 Technical Excellence and Creativity Awards
Thursday, November 13, 1986
Los Angeles, California



Solid State Logic

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Schedule of Events

Thursday, November 13, 1986 7:00-12:00 pm

Hyatt Regency Los Angeles Ballroom,
Downtown Los Angeles, California

7:00-8:45 pm-Dinner, Cocktails, Champagne

8:45-10:00 pm-The Awards Presentation

Master of Ceremonies: Comedian Ray Hanna

Keynote Address: Mr. David Pack, musician,
composer, speaking for the House Ear Institute.

Award Presenters: Craig Anderton

Jeff Baxter

Mr. Bonzai

Al Kooper

Cheech Marin

Narada Michael Walden

10:00-10:15 pm-Presentation of Proceeds

Winner, Recording School, presented by Hillel Resner,
Associate Publisher.

AES Educational Foundation, presented by David
Schwartz, Publisher/Editor.

House Ear Institute: presented by Penny Jacob,
Publisher/General Manager.

INTERMISSION

10:30-12:00 pm-Musical Entertainment & Celebration

Don Randi and Quest with special guest, **Hal Blaine**

Piano/Synthesizers: Don Randi, Drums: Hal Blaine,
Guitar: Chris Winters, Bass: Ed Alton, Percussion: Steve
Samuel, Sax/Reeds: Chuck Camper.



MIX MAGAZINE PRESENTS

The 1986 Technical Excellence
and Creativity Awards

A recognition of superior achieve-
ment in the professional audio and
sound production industry.

From the Publishers



Dear Audio Industry Professionals,

Welcome to the 1986 Technical Excellence and Creativity Awards. We are very pleased that you could join us this evening and we hope you enjoy the presentation. *Mix* magazine is delighted to be a part of a program that brings so many people together in support of two worthwhile causes.

We are here this evening to bring recognition and honor to those people, products and institutions that have made major contributions to the audio and sound production field in the last year. In addition, we are all part of a fund-raising process that will help to benefit this industry in years to come. It is truly a night of celebration and appreciation.

The recognition of achievement and excellence is always a worthwhile goal; it sets a precedent for all to follow and it illuminates the professionalism of the business in which we all operate. We extend our sincere thanks to you, the members of the audio industry, for your attendance and support of this goal. And we thank you for your time and dollars, which will help give those entering the business a better start and perhaps be instrumental in finding the causes and treatments of hearing disabilities and deafness.

Please join us in congratulating the nominees and winners of tonight's awards. They represent the best this industry has to offer.

Again, our thanks. Have a great evening.

Penny Riker Jacob
Publisher/
General Manager

David M. Schwartz
Publisher/Editor

Hillel Resner
Associate Publisher



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Congratulations to all the 1986 Tec Award Nominees
and Thank You for your Contributions.

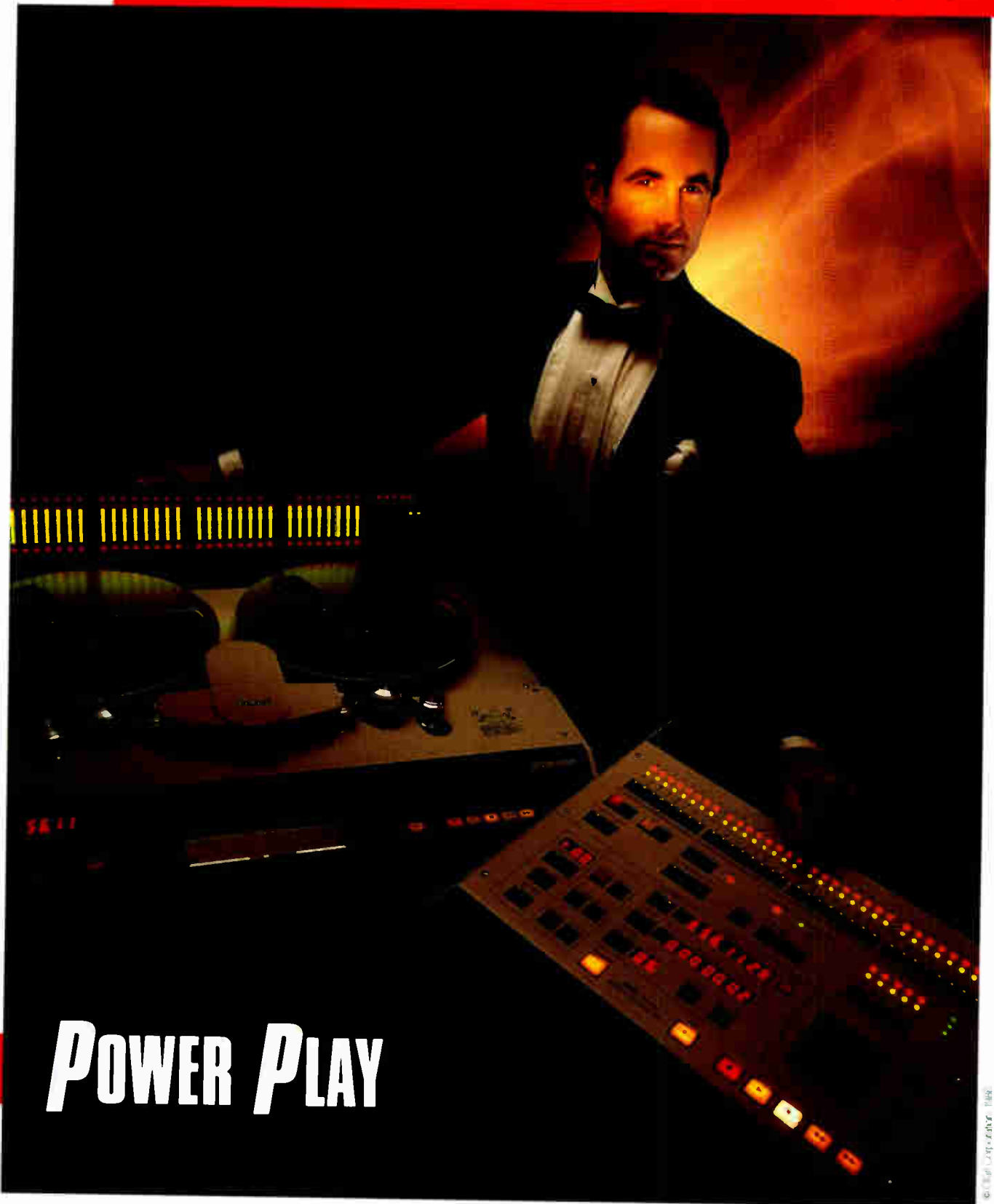


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Acknowledgements

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Penny Riker Jacob

DIRECTOR

George Petersen

ASSISTANT TO THE PRODUCER

Rachel McBeth

The TEC Awards producers would like to extend their sincere appreciation to the following people and organizations who have participated in the presentation of this event:

SOUND AND LIGHTING

Audio Consultant: David Scheirman, Concert Sound Consultants, Julian, California.
Production Manager: Rebecca Fields, Los Angeles, California.
Sound Reinforcement Company: Sound Image, San Marcos, California.

VIDEO PRODUCTION

Production and Technical Coordinator: Lee Lusted, Lee Lusted Video Services, San Rafael, California.
Production and Post-production: Pacific Video Resources, San Francisco, California, Jim Farney, Tim Schaller. The video production has been produced from start to finish on the Sony Betacam component system.

ORIGINAL MUSIC

Peter Scott, Sound Cat, San Francisco, California. Musical assistance, Peter Adams. Engineering, Troy Alders. Voiceover, Denny Delk.

PROGRAM BOOK

Design: Nancy Windesheim
Editor: Karen Margroff Dunn
Production Manager: Anne Letsch
Assistant Production Manager: Kathy Badertscher
Typesetting: Linda Dierking, Connie Wiggins
Production: Anita Wong Dun, Patsy Messerer, Linda Johnson
Advertising Sales: Hillel Resner, Jeff Turner, Harton Firmin, Ken Rose
Traffic: Neil McKamey

PRESENTER'S SCRIPTING

George Petersen

NOMINEE'S COORDINATOR

Karen Margroff Dunn

HOUSE EAR INSTITUTE

Charlie Ennis, PR/Promotions Coordinator; Vincent Fraumeni, Director of Development.

TEC AWARD LOGO DESIGN

Tim Gleason

TEC AWARD TROPHY DESIGN

David Marrs

TROPHY FABRICATION

Majestic Company, Abby Korol

BALLOT TABULATION

Mark Ellsberg & Associates, CPA, Oakland, California

VENUE

Marisu Asuncion, Catering Manager, Hyatt Regency

MUSICAL ENTERTAINMENT

Hal Blaine, Don Randi, Chris Winters, Ed Alton, Steve Samuel, Chuck Camper.

ADDITIONAL SPECIAL THANKS TO

Rudy Hurwich, Steve Thornton, Harriet Mack, David Goggin, Liz Thiels, Greg DiGovine, Cynthia Shiloh, Hal Blaine, and the entire staff of Mix Publications, Inc.

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With cost effective digital processing consoles scheduled to be available by 1990, the profit oriented studio today needs a reliable high performance analog console to match the sonic qualities of the new digital recorders like the Mitsubishi X-850. The Westar+ is such a console system, at a price the studio can pay back by the time digital consoles become reality.

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Investing over \$400,000 in a digitally controlled analog console does not make sense economically, nor can such a console match the processing and automation power of the future digital consoles. The cost effective choice today is the Westar+.

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Westar consoles are already proven in service at leading studios around the world, in the U.S., Canada, Japan, Scandinavia, Austria, W. Germany, Colombia and England. For studios not intimidated by "the fashion console of the month," the Westar+ is the intelligent choice.

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Compumix PC is a powerful extension of the popular tape based automation system, providing storage on floppy diskettes of an unlimited number of mixes and off line editing of mix data. The Compumix PC comes complete with IBM XT compatible PC (with Dual floppy and 20 MB Hard Disk), Mitsubishi 13" color graphics monitor, custom and standard keyboard, and all cables and software. Compumix PC is probably the most cost effective high performance automation system available today, and a perfect fit for Westar+.



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The TEC Story

The Technical Excellence and Creativity Awards were created in 1985 by the publishers of *Mix* magazine to honor outstanding achievement in the professional recording and sound production industry. Encompassing three major categories (technical, creative and institutional achievement) and comprised of 19 award categories, the TEC Awards give audio and technical professionals the opportunity to recognize the achievements of their peers.

Although there are other awards that spotlight achievements individually in sound, recording and music, the TEC Awards are unique in that they recognize the way these fields relate to one another. In the modern audio production environment, technical excellence is nothing without creativity and vice versa. The TEC Awards recognize this fact by bringing out the brightest in both fields.

Along with acknowledging achievement within the industry, the TEC Awards provide another very important function—the raising of funds for three noteworthy and worthwhile causes. All revenue generated from this year’s ticket sales will be donated to the House Ear Institute, the Audio Engineering Society Educational Foundation and a grant to the winner in the Recording School/Program category.

The first annual TEC Awards ceremony was held last year in New York. More than 600 audio professionals attended the event and the \$21,000 raised went to the Deafness Research Foundation, the Audio Engineering Society Educational Foundation and the Recording School/Program category winner, Berklee College of Music.



Procedures

Three steps were involved in selecting nominees for the 1986 TEC Awards. In the April issue of *Mix* magazine, subscribers received a ballot on which to make their nominations in three major categories divided into 19 award categories.

After the responses were tabulated, results were sent to the 80 members of the prestigious TEC Advisory Panel who determined if the nominees met the requirements of eligibility.

Eligible nominees are those who have made a superior achievement either on an individual or company basis, or with a

product that has been introduced between January 1985 and March 1986.

The final step was once more the responsibility of *Mix* readers. The approved nominations appeared in a non-reproducible ballot in the August issue, giving *Mix's* 35,000 qualified subscribers the opportunity to select the winners in each category.

Returned ballots were submitted to the certified public accounting firm of Mark Elsberg and Associates in Walnut Creek, CA, where the winners' names have been kept confidential until tonight's ceremony.

THANK YOU!

MIX MAGAZINE FOR THE OPPORTUNITY.

**MIX READERS FOR YOUR SECOND NOMINATION TO
THE OUTSTANDING TECHNICAL ACHIEVEMENT CATEGORY.**

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FOR QUALITY AND APPRECIATE YOUR RECOGNITION.**

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Lexicon PCM70 Digital Effects Processor, 1986 Nominee

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TEC Advisory Panel

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David Angress

Sound Genesis, San Francisco, CA

G.L. Augspurger

Perception Inc., Los Angeles, CA

Jeff Baxter

Producer/musician, Beverly Hills, CA

Charles Benanty

Soundworks Digital/Video Studios, Ltd.,
New York, NY

Russ Berger

Joiner-Rose Group, Dallas, TX

Larry Blakely

Blakely Consulting Group
Framingham, MA

Bruce Borgerson

Studer/Revox America, Nashville, TN

Jeffrey Borish

Droid Works, San Rafael, CA

Bruce Botnick

Digital Magnetics, Los Angeles, CA

Hamilton H. Brosious

Audiotechniques, Stamford, CT

Fred Catero

Catero Records, San Carlos, CA

Curtis Chan

Sony Broadcast Products, Teaneck, NJ

Suzanne Ciani

Ciani/Musica, New York, NY

Mark Cohen

Fostex Corp. of America, Norwalk, CA

Craig Connelly

NEOTEK Corp., Chicago, IL

Brian Cornfield

Everything Audio, Encino, CA

Chips Davis

Chips Davis Design, Las Vegas, NV

William G. Dilley

Spectra Sonics, Ogden, UT

Kent R. Duncan

Sierra Audio Acoustics, Arcadia, CA

John Eargle

Author/engineer, Los Angeles, CA

Phil Edwards

Phil Edwards Recording, Hayward, CA

Richard G. Elen

Independent consultant, London, England

F. Alton Everest

Author/consulting engineer, Whittier, CA

Richard Factor

Eventide Inc., Little Ferry, NJ

Wayne D. Freeman

Trident USA, Inc., Northridge, CA

Terry Fryer

Musician/producer, Evanston, IL

Mark R. Gander

JBL Inc., Northridge, CA

Vin Gizzi

Benchmark Inc., New York, NY

Bernie Grundman

Bernie Grundman Mastering
Los Angeles, CA

Albert Grundy

Institute of Audio Research, New York, NY

Greg Hanks

New York Technical Support, Ltd.
Bronxville, NY

John Hardy

Hardy Co., Evanston, IL

Jeep Harned

MCI/Sony, Ft. Lauderdale, FL

Malcolm H. Harper, Jr.

ReelSound Recording, Manchaca, TX

Harry Hirsch

Educator/engineer, New York, NY

Bob Hodas

Engineer/producer, Sausalito, CA

Bruce Jackson

Live sound mixer, Santa Monica, CA

Fred Jones

Fred Jones Recording, Hollywood, CA

Shirley P. Kaye

Coconuts Recording
North Miami Beach, FL

Orrin Keepnews

Landmark Records, San Francisco, CA

Jim Keltner

Keltner Drum Corp., Los Angeles, CA

Steve Krampf

Entrack Corp., Belmont, CA

Leo De Gar Kulka

College for Recording Arts
San Francisco, CA

Hank Lam

Associated Productions of Texas
Houston, TX

Bernie Leadon

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EM Long Assoc., Oakland, CA

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Billy R. Porter

University of Colorado, Denver, CO

Roger Powell

Musician, Rhinebeck, NY

Norbert Putnam

The Bennett House, Franklin, TN

Ben Rizzi

Mastersound, Astoria, NY

Johnny Rosen

Fanta Professional Services, Nashville, TN

Larry Rosen

GRP Records, New York, NY

Howard Schwartz

Howard Schwartz Recording
New York, NY

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Fantasy Studios, Berkeley, CA

Wil Sharpe

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Ampex Corp., Redwood City, CA

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Christopher Stone

Record Plant, Los Angeles, CA

Ron Streicher

Pacific A/V Enterprises, Monrovia, CA

Joseph D. Tarsia

Sigma Sound Studios, Philadelphia, PA

Terry Taylor

TOA Electronics, South San Francisco, CA

Bob Walters

Power Station, New York, NY

John Woram

Senior editor, *Mix*, New York, NY

The 1985 TEC Awards Review



The first Technical Excellence and Creativity Awards ceremony took place in New York City in October 1985. The gala ceremony, MC'd by actor/comedian Howard Hesseman, was held in the historic Puck Building in Soho. Musical entertainment following the ceremony was provided by Herbie Hancock and the Rockit Band.

The ceremony was attended by 600 audio industry professionals and raised \$21,000 in ticket sales revenue. The revenue was divided among the Deafness Research Foundation, the Audio Engineering Society Educational Foundation, and Berklee College of Music, winner in the category of Recording School/Course. Following is an explanation on the disposition and use of the funds by each of these organizations.

Mix Magazine wishes once again to thank all of the people and companies who participated in the 1985 TEC Awards.

Deafness Research Foundation

Last year, the Deafness Research Foundation received 50 percent of the proceeds of the TEC Awards ticket sales. The funds were used in a project studying the development of Auditory Middle Latency Response, conducted by **Nina Kraus, PhD**, Assistant Professor at the University of Chicago, Department of Otolaryngology.

"Of every 1,000 babies born in the United States this year, one will have severe or profound hearing loss at birth. Two or three others will be born with substantial but less severe hearing loss," says Kraus.

According to Kraus, if infants with only 10 percent hearing are given acoustic reinforcement with some type of hearing aid, hearing sensitivity can actually improve.

"Therefore," says Kraus, "it is vital to develop effective, economical hearing screening techniques for use on infants." While several methods are currently available to measure hearing in the mid to high range, a clinically feasible means of measuring low-frequency hearing is not available.



This particular project studied Middle Latency Responses (MLRs) in animals and included comparative age-related measurements and other technological variables which helped enhance the responses.

As a result of this study, a presentation was made and an abstract was published at the 1986 annual meeting of the American Researchers in Otolaryngology. The result of the final report has been a valuable advance in the search for improved clinical measurement of low-frequency hearing.



Audio Engineering Society Educational Foundation

Last year, the Audio Engineering Society Educational Foundation received 25 percent of the proceeds from the TEC Awards. The money went into their AES scholarship fund and was recently awarded to three graduate students in the amount of \$3,000 each.

Twenty-three-year-old **Daniel Mapes-Riordan** is a graduate student at Georgia Institute of Technology, pursuing a Master of Science degree in electrical engineering. His interests lie in design and development in audio related fields, with an emphasis in digital audio.

Rodney Hanze, 29, is pursuing a Master's degree in engineering science and acoustics/mechanics at Iowa State University where he earned a Bachelor of Music degree in piano performance.

Daniel Pfeifer plans to receive his Master of Arts degree in an individualized master's degree program in commercial music and media pro-

duction by December 1987 at Memphis State University. After Pfeifer obtains his degree, he plans to continue working with Media General Broadcast Services or pursue a position as an engineer with a commercial studio. His ultimate goal is to become an engineer/producer.

Berklee College of Music

After winning the first TEC Award in the Recording School/Program category last year, the Berklee College of Music was inspired to use the \$5,250 scholarship money it was awarded to create the *Mix Magazine* TEC Awards Scholarship Fund. This permanent fund assists promising Berklee students majoring in Music Production and Engineering.

The first scholarships were awarded to two students this year. **Carrie King** is a junior originally from Bay Village, Ohio. In addition to her production and engineering projects at Berklee, King has been working as an independent college representative for Capitol Records. The 21-year-old also works as an audio and music video production assistant with Adrock Associates of Boston.

Katsuhiko Naito, a 22-year-old senior, is a work-study student in the Music Production and Engineering department. The Japanese native plans to stay in the U.S. after graduation and pursue a career in the recording industry.



1 9 8 5 A W A R D W I N N E R S

Outstanding Technical Achievement

- **Recording Technology:** Lexicon: PCM60 Reverberation Unit
- **Acoustic Technology:** Crown International: Techron 10 TEF Analyzer
- **Sound Reinforcement Technology:** Carver Corp: Power Amplification
- **Film and Broadcast Sound Technology:** Lucasfilm: Technical Innovations
- **Musical Instrument Technology:** Yamaha International: DX Synthesizers

Outstanding Creative Achievement

- **Recording Engineer:** Bob Clearmountain
- **Recording Producer:** Quincy Jones
- **Mastering Engineer:** Bernie Grundman
- **Film and Broadcast Sound Engineer:** Ben Burt
- **Sound Reinforcement Engineer:** Gene Clair
- **Recording Session Musician:** Steve Gadd

Outstanding Institutional Awards

- **Recording Studio:** Power Station, New York City
- **Mastering Facility:** Bernie Grundman, Los Angeles
- **Sound Reinforcement Company:** Clair Brothers, Lititz, PA
- **Record Company:** Windham Hill, Palo Alto, CA
- **Recording School/Program:** Berklee College of Music, Boston, MA
- **Remote Recording Facility:** Record Plant, Los Angeles

Congratulations
to all the
TEC nominees.

And
may the best man,
machine,
musical instrument,
and
institution win.

1986 TEC AWARD NOMINATIONS

The nominees for the 1986 TEC Awards represent the highest levels of technical excellence and creative achievement during the 1985 calendar year, as judged by the more than 35,000 subscribers of *Mix* magazine.

Nominations have been made in three major categories: Outstanding Technical Achievement, Outstanding Creative Achievement and Outstanding Institutional Awards. The voting ballots have been tabulated by a certified public accountant and the results have been placed in sealed envelopes. The winners will be announced this evening.

Outstanding Institutional Achievement

Awarded to those companies and/or facilities that have contributed most significantly, in terms of technical or creative achievement, during the past year.

- Recording School/Program
- Acoustics Design Company
- Remote Recording Facility
- Sound Reinforcement Company
- Recording Studio
- Mastering Studio
- Record Company

Outstanding Creative Achievement

Awarded to those persons who, over the last year, have made exceptional creative contributions to professional audio.

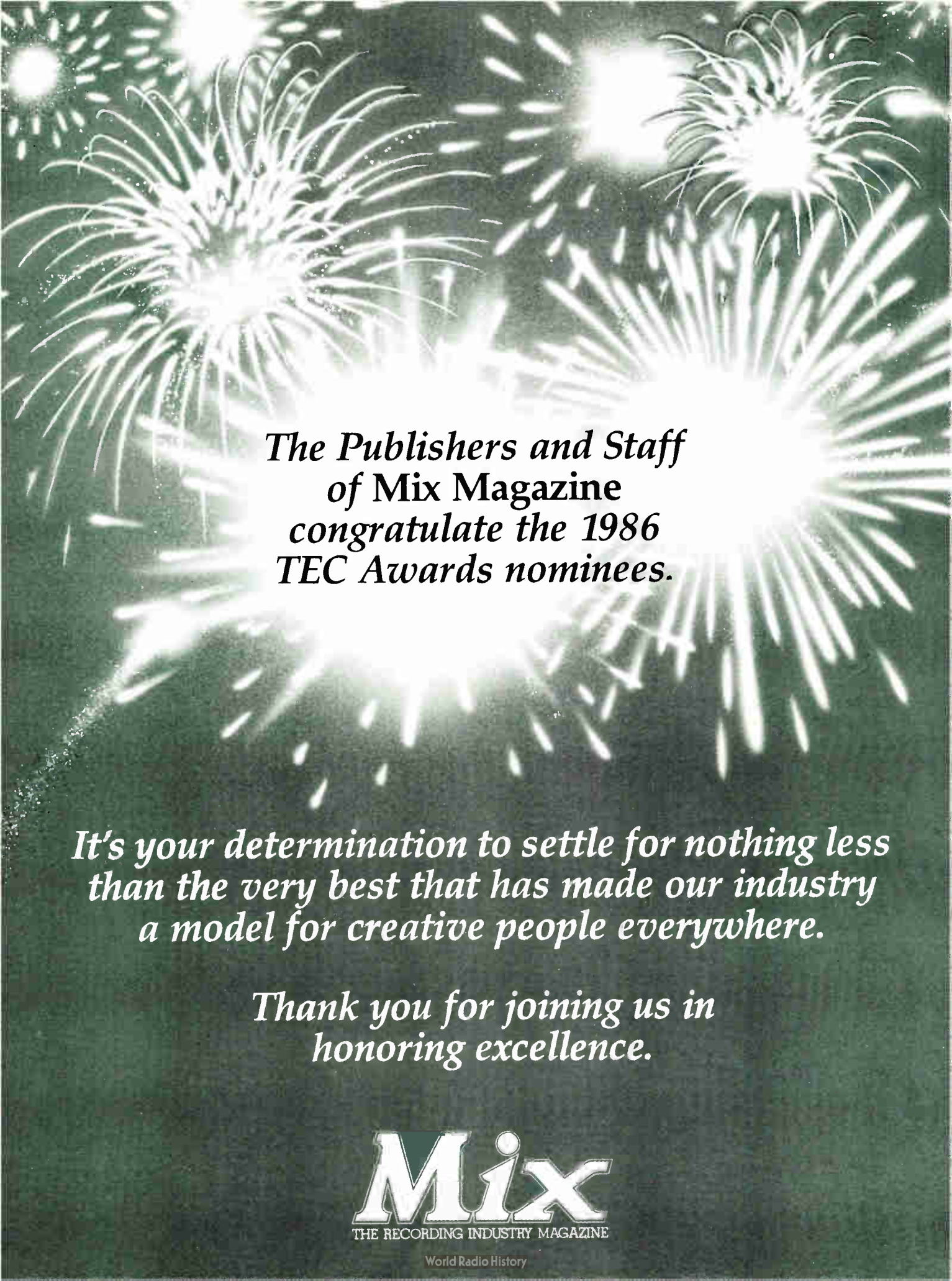
- Broadcast Sound Engineer
- Film Sound Engineer
- Sound Reinforcement Engineer
- Mastering Engineer
- Recording Engineer
- Recording Producer

Outstanding Technical Achievement

Awarded to those individuals, companies and/or innovations that have made the most significant contributions to the advancement of audio technology during the past year.

- Tape Manufacturing Technology
- Film/Broadcast Sound Technology
- Acoustics Technology
- Sound Reinforcement Technology
- Musical Instrument Technology
- Recording Technology





*The Publishers and Staff
of Mix Magazine
congratulate the 1986
TEC Awards nominees.*

*It's your determination to settle for nothing less
than the very best that has made our industry
a model for creative people everywhere.*

*Thank you for joining us in
honoring excellence.*

Mix
THE RECORDING INDUSTRY MAGAZINE

Outstanding Institutional Awards

Awarded to those companies and/or facilities that have contributed most significantly, in terms of technical or creative achievement, during the past year.

- Recording School/Program
- Acoustics Design Company
- Remote Recording Facility
- Sound Reinforcement Company
- Recording Studio
- Mastering Studio
- Record Company

RECORDING SCHOOL/PROGRAM



Berklee College of Music *Boston*

Berklee offers Bachelor of Music and Bachelor of Music Education degrees and a professional diploma. The Music Production and Engineering (MP&E) Department prepares musicians for professional careers in the recording industry. The MP&E student has access to three 24-track and three 8-track studios. For live performance recording, control rooms are linked by audio and video lines to the 1,200-seat Berklee Performance Center.



Middle Tennessee State University *Murfreesboro*

From hot rock tracks to live symphony recordings, audio students in Recording Industry Management have the opportunity to experience it all in MTSU's four-year program. More than 50 hours of specialized audio and music business instruction is offered, resulting in a Bachelor of Science degree. Audio courses include basic technology, multi-channel recording, production, acoustics and maintenance and

internship programs. Students learn hands-on digital recording and SMPTE code applications. A second studio (a multi-channel digital) is planned for completion late this year.



University of Colorado *Denver*

Bill Porter and Roy Pritts direct the College of Music program which offers a Bachelor of Science degree in music, masters degrees in business administration and educational technology, and a PhD in educational technology for the professional practitioner and educator. Four studios support 2-, 4-, 8-, 16- and full-track recording with Neve, Audionics and Quantum consoles. An extensive MIDI facility and PC Lab round out this college.



University of Miami *Coral Gables*

University of Miami was the first school in the U.S. to offer a Bache-

lor's degree program based on curricula balanced among music, audio and electrical engineering disciplines. The 12-year-old music engineering program includes courses in music theory, orchestration, arranging, film scoring, recording techniques, digital audio, acoustics and studio design, video production, circuit theory, computer technology, and an electronics lab that introduces students to audio engineering. The department has recently expanded to include a Master of Music Engineering degree with special graduate courses in the design of audio circuits.



College for the Recording Arts *San Francisco*

This one-year vocational school was founded by Leo de Gar Kulka and Herbert Haas in 1973. The curriculum focuses on engineering, music production and studio electronics. Students are required to complete studies in business, law and audio-visual aspects as well. The College for the Recording Arts was originally accredited by the NARAS Institute, and, subsequently, by the National Association of Trade and Technical Schools. Kulka is well-known for his work in stereo and disk mastering techniques. He has recently been recognized by the California Senate for his professional, educational and public service work.

Congratulations

Mix

“you’ve done it again”

Murray Allen
president

Foote Kirkpatrick
studio manager



UNIVERSAL RECORDING CORPORATION

46 East Walton Street Chicago, Illinois 60611 312/642-6465

They say that a job well done is
its own reward...
But recognition from your peers
is pretty nice, too!

Congratulations to all
the TEC Awards nominees
and winners from all of us
at **Martin Audio, Martin
Rentals, and Martin
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ACOUSTICS/STUDIO DESIGN COMPANY



Chips Davis LEDE Designs, Inc.
Las Vegas

Chips Davis built the first control room using the technology, LEDE™ (Live End, Dead End), acoustics in 1978. Davis is now recognized as a leading authority on the science of LEDE-based acoustic design. He is also numbered among the first acoustic researchers to use the new technology of TEF™ (Time, Energy, Frequency) measurements in the study of room acoustics and electronic circuit characteristics.



Joiner-Rose Group
Dallas

Russ Berger heads the Joiner-Rose Group studio design team which combines a broad base of technical skills in acoustical design with practical understanding of studio operations. The Joiner-Rose Group is one of the oldest and largest full-service acoustical consulting firms in the country. They provide professional services in design, problem solving and testing for noise control, architectural acoustics, vibration analysis, A/V and video designs, sound systems and environmental acoustics.



Lakeside Associates
Irvine, California

Lakeside Associates prides itself on developing studios by anticipating the rapidly changing demands digital recording is bringing to the studio environment. Already standard in Lakeside studios are extended range control room monitoring, variable studio acoustics and strict control room monitoring. Technical aspects, however, are only a part of this effort. As musical instruments are becoming more integrated with the recording process, Lakeside is also advancing new studio design criteria to address the needs of the creative musician.



Perception, Inc.
Los Angeles

Perception, Inc., is headed by acoustician and studio design expert George Augspurger, whose experi-

ence covers TV, film, and both independent and major label recording studios. The company has also designed private facilities for Lindsey Buckingham, Randy Jackson and Lee Ritenour. Perception, Inc. provides acoustics testing, professional consulting and design services to architects, builders and studio owners.



Valley Audio
Nashville

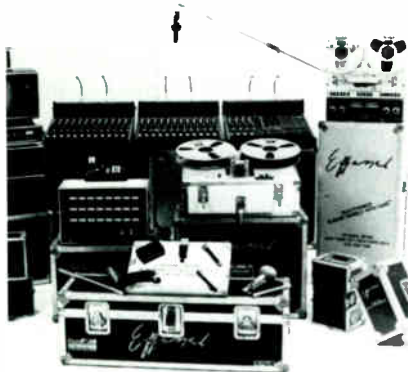
Valley Audio has been designing studios and providing acoustical consulting services for 14 years. The Welk Music Group studio in Nashville, is just one of the many facilities designed by Bob Todrank of Valley Design. It's one of the first control rooms in the U.S. to utilize Boxer, a soft dome monitoring system that provides the engineer with the power handling capabilities required by large rock and roll studios, and the phase, time and frequency alignment required for precise stereo imaging. Valley Design has also utilized Peter D'Antonio's LFD (Low Frequency Diffusor) along the rear corner, as well as RPG diffusors throughout the studio spaces to increase the perception of acoustical size and provide more uniform room characteristics.

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REMOTE RECORDING FACILITY



Effanel Music New York City

Four years ago, Effanel Music decided that quality location multi-track recordings could be done with a completely portable system—no truck. Although their own system has grown to include a mobile control room for conventional remotes, Effanel's emphasis is still on their ability to easily ship their completely portable package anywhere in the world, and to be ready to make first rate recordings a few hours after they arrive. Effanel Music has also been acknowledged as the most credited location recording company on *Billboard's* 1985 Pop LP charts.



Fanta Professional Services Nashville

Fanta was busy last year. During all of 1985, their 40-foot semi-truck had only four non-revenue days. The console layout and auxiliary equipment lend itself to complicated remotes and sophisticated line TV shows. Fanta remixes, sweetens and lays back many TV and radio specials. The company is currently in

the process of obtaining a second truck. Clients that have used Fanta over the past 12 years include acts ranging from the Philadelphia Symphony Orchestra to the Rolling Stones.



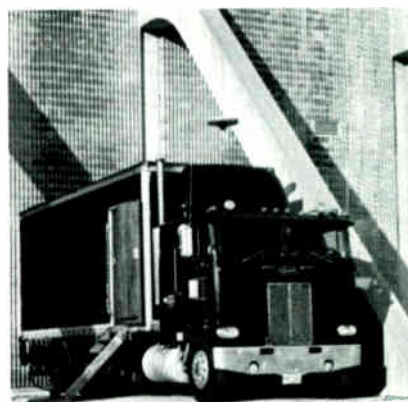
Le Mobile Encino, CA

Although now based on the West Coast, Le Mobile continues to work throughout the United States and Canada. Major engagements this past year included Stage 1 mix for *Live Aid* in Philadelphia, a second Deep Purple remote/studio album project in Vermont, and Joe Jackson's *Big World* album in New York. Guy Charbonneau built his first recording truck in 1974 in Montreal. In 1978, Le Mobile became the first facility of any kind in North America to own a Studer A800. The current equipment roster includes twin Studer A800 multi-tracks and a Neve 8058 console with Necam II. Charbonneau moved Le Mobile to Southern California last year.



Record Plant Los Angeles

The Record Plant offers double 24-track Sony digital location recording with the latest in support equipment and audio/video interface gear. In the business for 15 years, Record Plant has recorded major concert tours by Bruce Springsteen (digital), the Jackson's Victory Tour (digital), Prince, Yes, the Thompson Twins, Iron Maiden and Starship. Their mobile units also covered the 1984 Olympic Games in L.A., the Grammy Awards, the Academy Awards, the American Music Awards and the Video Music Awards.



Remote Recording Services, Inc. Monsey, NY

Remote Recording Services offers many services including remote audio facilities/production on a national and international basis, consulting, and engineering. The company specializes in Sony PCM-3324 and PCM-1610 digital systems. Remote Recording Services was the audio consulting firm for *Live Aid* and

the Prince *Purple Rain* tour last year. Recently, the infamous Black Truck has provided the audio for Liberty Weekend, a feature film and a digital recording of Miles Davis.



and Boston) has played host to dozens of top artists during its grueling non-stop concert schedule over the past year. Dual Ampex 24-track recorders are standard equipment on the Concertmaster I, as is a full complement of outboard gear, extensive intercom/telecommunications facilities, and a spacious lounge/overdub room, which is separated from the control room by a pneumatic airlock door for complete isolation.

Westwood One
Culver City, CA

Concertmaster I, the 45-foot flagship of Westwood One's fleet of remote recording studios (additional mobile units are headquartered in Cleveland

Eurythmics

Ratt

Billy Squier

Corey Hart

Van Halen

"Don't Leave Home Without Us"

Don Henley

Heart

Run-D.M.C.

Billy Idol

The Alarm

Audio Analysts

Jackson Browne

Billy Joel

Pat Benatar

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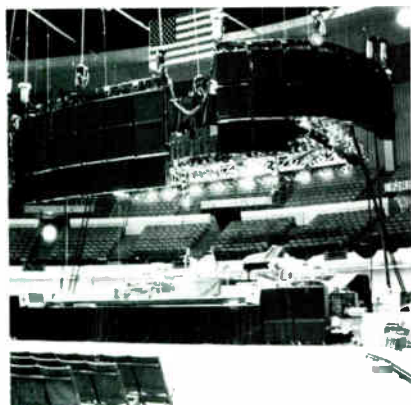
U.S.A.: Audio Analysts U.S.A. Inc., 13 Air Industrial Park, Plattsburgh, NY 12901, (518) 561-5071, E-Mail: IMC 846
 U.K.: Audio Analysts Inc./Roadstar, Carver House, Carver St., Sheffield, England S1-4FS 011-44-742-27014, E-Mail: DGS 1917
 CANADA: Audio Analysts Inc., 1875-D Panama St., Brossard, Quebec J4W 2S8, (514) 466-1691, E-Mail: IMC 846

SOUND REINFORCEMENT COMPANY



Audio Analysts *Plattsburgh, NY*

Fifteen years ago, Bertrand and Pierre Pare started Audio Analysts in Montreal. They have seen their company grow from a single touring system to one that can accommodate multiple tours and large outdoor shows. They now have offices in Montreal, New York, and a new association with Roadstar in the United Kingdom. Company credits include supplying sound reinforcement for Van Halen, Heart, Don Henley and the current Eurythmics world tour.



Clair Brothers *Lititz, PA*

Twenty years ago, Roy and Gene Clair began a professional partnership, Clair Brothers. In 1970 they incorporated and are now a worldwide business capable of having 12 touring sound systems around the world simultaneously. In 1985, Clair Brothers opened an office/warehouse in London—Clair Brothers Audio LTP. Clair Brothers has recently worked with Bruce Springsteen, Kenny Rogers, U-2, Julio Iglesias,

Billy Joel, the Moody Blues, .38 Special, Queen, Stevie Nicks, Michael Jackson, Live Aid and the Amnesty International tour.



Maryland Sound Industries *Baltimore*

Maryland Sound Industries specializes in custom engineering and design services for international installation and touring. Maintaining offices in Baltimore and Portland (with liaison facilities in Los Angeles, New York, London and Hong Kong), Maryland Sound can field 14 arena-sized systems simultaneously. Recent installations include; Busch Gardens, Williamsburg, VA; North Shore Music Theatre, Boston; the Equestrian Center, Los Angeles; and Six Flags Power Plant, Baltimore. The touring division provided sound reinforcement for the Liberty Weekend and is currently providing the sound for the Stevie Wonder tour, the first in-the-round quadraphonic tour. Maryland Sound is also touring with Whitney Houston, Joe Jackson, Patti LaBelle, George Benson, David Lee Roth, Luther Vandross, Frankie Valli, the Cure, Peter Allen, Harry Belafonte and Manhattan Transfer.



Showco *Dallas*

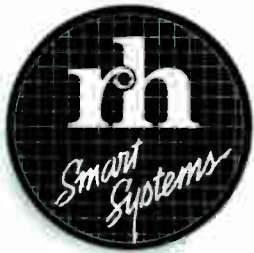
Showco has been committed to excellence and innovation in sound and lighting equipment and overall concert production since its inception 16 years ago. Each sound system includes cabinets that are built in-house and state-of-the-art, custom designed mixing consoles. Clients have included David Bowie, Willie Nelson, the Rolling Stones and Julian Lennon.



Ultra Sound Inc. *San Rafael, CA*

Ultra Sound Inc., now in its 11th year, provides audio and electronic services, with sound system rentals a large portion of the company's business. Ultra Sound has provided sound reinforcement systems for venues of all sizes, from small clubs and theaters to outdoor stadiums. A full-service woodshop provides cabinetry for sound companies, speaker manufacturers, bands and music stores, in addition to manufacturing all the cases, racks and speakers used in their rental systems.

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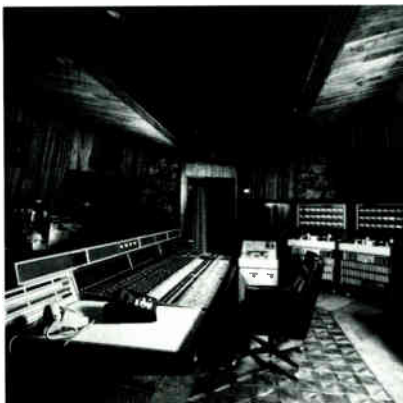
RECORDING STUDIO



Capitol Records Studios
Hollywood

Located in the heart of Hollywood, Capitol Records Studios, established in 1956, has always been in the forefront of higher technology. The three multi-track studios, five edit suites and two disk cutting rooms are staffed by engineers, producers, editors, technical maintenance and studio support personnel, to accommodate any project and completely follow it through without leaving the building. Capitol is a member of the EMI world music group, which includes such well known studios as Abbey Road (England), 301 (Australia) and Toshiba EMI (Japan).

...rity and excellence come first. Their technical philosophy is built on a combination of the "best of vintage and state-of-the-art technology."



Fantasy Studios
Berkeley

Fantasy Studios has kept pace with today's rapid technological change and growth by offering its clients facilities for pre-production work in the keyboard room (Kurzweil 250, three DX7s, Linn 9000, Southworth Sequencing, etc.), the choice of four multi-track recording rooms, the availability of total digital recording, video sweetening services and custom mastering, including CD mastering.

...feature Solid State Logic 56-track, Total Recall consoles. The new studios, designed for both improved acoustics and aesthetic ambience, are also equipped with two Studer A800s with Lynx synchronization, along with Ampex, Studer and Mitsubishi digital 2-tracks. Both rooms include a large complement of reverbs and outboard gear.



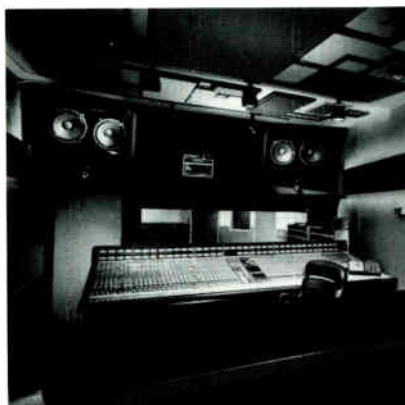
Ocean Way Recording
Hollywood

Ocean Way Recording has been operating in Hollywood for seven years. It successfully blends its state-of-the-art facilities with a comfortable, relaxed working atmosphere. The facility is composed of three large studios (Studio 1 can accommodate up to 75 musicians; Studios A and B, 50 to 60), featuring GML and Necam automation, ATR recorders, X-850 Mitsubishi digital recorders, a large selection of tube mikes and an abundant supply of outboard gear.



Cherokee Recording Studios
Hollywood

Cherokee has four full service, 48-track recording studios, including one room with Necam II automation. The large tracking room features a custom console built by Cherokee. The facility offers a large technical staff, custom monitors and a roomy client lounge. The studio's audiophile philosophy is that sonic integ-



Larrabee Studios
West Hollywood

Larrabee Sound celebrated its 15th anniversary with the recent opening of its two completely rebuilt and re-designed studios. Both rooms now



Power Station
New York City

Power Station, located on the west

side of mid-town Manhattan, is comprised of three studios. Studio A has a custom NEVE 8088 with 40 inputs and is capable of handling up to 50 musicians. Studio B, the smallest of the rooms, has an SSL 6048E/32-bus, 48-input console and the room can accommodate approximately 25 musicians. Studio C has an SSL 4048E/32-bus, 48-input console accommodating about 40 musicians. All rooms have Studer A800 multi-track recorders, A80 2-track half-inch and quarter-inch and B67 2-track machines.



Universal Recording

Chicago

Universal Recording has four 48-track music video post-production studios, three of which have 32-track digital recorders, while one has a

fully loaded Synclavier. All are equipped with Softouch synchronization systems and a C-format video recorder. Universal also has four 16-track music/post-production studios and two 4-track voice-over production studios. There are also two film re-recording studios, both equipped with ADR, 33mm, 16mm and video projection. Universal offers optical transfer, with four film transfer suites and two tape copy suites. Recent projects include the movie, *Top Gun*, 19 commercials on the Super Bowl, the Capone vault opening and work with Willie Nelson.

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MASTERING STUDIO



Bernie Grundman Mastering Studio

Los Angeles

Bernie Grundman Mastering opened two-and-a-half years ago in Hollywood and quickly attracted many artists, including Lionel Richie, Stevie Wonder, Prince, Janet Jackson, Judas Priest, Loverboy, Neil Diamond and Rod Stewart. Most mastering formats can be accommodated including Mitsubishi or Sony digital. The facility can also make sub-masters for CD or cassette duplication. It has two complete mastering rooms and a staff of four cutting engineers: Bernie Grundman, Brian Gardner, Chris Bellman and Mark Keller. Most of the electronics were designed by partner Karl Bischof.



Digital Audio Disc Corporation

Terre Haute, IN

Digital Audio Disc Corporation is the original compact disc manufacturer in the United States. DADC's twin mastering suites were designed by Tom Hidley and are equipped with complete Sony digital audio editing systems, DAQ1000 PQ editors,

DTA2000 data analyzers, the Sony K-1105 digital audio mixer and Sony quarter-inch and half-inch analog decks. The facility also includes the Studer SFC-16 sampling frequency converter, allowing for transfers within the digital domain from other professional digital formats.

Masterdisk



Masterdisk

New York City

Masterdisk's four disk mastering studios are equipped with state-of-the-art equipment from Neumann, Studer, Sony, Yuma and Mitsubishi, with one room featuring Direct Metal Mastering. The well-stocked facility also has all current analog and digital formats available, including Sony 1610 and 1630, Mitsubishi X-80, Sony PCM-F1 VHS or Beta and Sony DAE-1100 for digital editing. Some of the artists Masterdisk has worked with include Bruce Springsteen, The Cars, David Bowie, Ted Nugent, the Pat Metheny Group, the Rolling Stones and Steely Dan.



Masterfonics, Inc.

Nashville

Masterfonics, Inc. has had a long his-

tory of firsts and being on the technical edge beginning in 1974 when the company installed the first Neumann SX74/SAL74 cutting system in its Nashville studio (only the fourth in the U.S. at that time). In 1977, Masterfonics acquired a second system to allow tandem editing. Two years later, a Zumaudio pitch computer was added, only the fourth system installed in the world. That was followed in 1980 by the first of six complete JVC digital audio 2-track recorders. Masterfonics is the only disk mastering facility in the country to have the JVC DM-900 digital disk mastering console in daily use. The company plans to stay in the technological forefront with the October introduction of the only 20 Hz monitor-equipped mix room in the U.S., along with two new disk mastering and CD prep rooms designed and built by Tom Hidley.

Sterling Sound

Sterling Sound

New York City

Sterling Sound is one of the country's top mastering facilities with engineers George Marino, Greg Calvi, Ted Jensen, Jack Skinner, Jose Rodriguez and Rhonda Shoen. Consistently credited with 25 to 35 percent of the albums in *Billboard's* top 100, Sterling Sound offers state-of-the-art equipment, both digital and analog systems, and DMM and CD preparation. The company has five cutting rooms and one editing room.

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RECORD COMPANY

Jones, Chick Corea and Andreas Vollenweider.



American Gramophone

American Gramophone Records, established in 1975, has become a major force among independent labels through quality production and an original style of music. American Gramophone Records' Fresh Aire series and the recent release of *Fresh Aire VI*, recorded in America and Europe with Mannheim Steamroller and the London Symphony, have dominated a new musical genre, combining authentic period instruments with state-of-the-art digital recording technology. Mannheim Steamroller's gold record Christmas album earned company president, Chip Davis, a Grammy nomination, and the group's *Saving the Wildlife* album was used recently for a Public Television Network production.



GRP Records

In 1976, Dave Grusin and Larry Rosen founded a production company, Grusin/Rosen Productions, which helped launch the careers of Earl Klugh and Noel Pointer. In 1978, Arista Records signed the Grusin/Rosen team to discover and develop new talent under the newly formed label banner, GRP Records. In 1983, back on their own, GRP Records felt the winds of change and decided to get into CDs. Today the label is recognized as the most successful nonclassical independent label in the CD field. In 1985, they released more than 20 new CD titles, and by year's end were offering all released materials on CD, LP and cassette. GRP Records' current roster of artists includes Lee Ritenour, Billy Cobham, Dizzy Gillespie, Special EFX and, of course, Dave Grusin himself.

recordings for RCA/Ariola. The first of the 325 million disks the Red Seal label has produced was made in 1903, with Ada Crossley singing "Caro Mio Ben" at a Carnegie Hall recording studio. Today RCA Red Seal issues state-of-the-art digital recordings by guitarist Julian Bream, flutist James Galway, pianist Emanuel Ax, clarinetist Richard Stoltzman and synthesist Suzanne Ciani. They have also produced the original cast recordings of virtually all of Stephen Sondheim's musicals in the past decade. Recent Grammy Awards include Best Cast Show Album for Sondheim's *Sunday in the Park with George*.



Telarc

The Telarc label is practically synonymous with compact discs. In 1978, Telarc was the first classical label in the U.S. to make commercial use of digital recording technology and to exploit it to its fullest potential. The entire Telarc catalog is produced from digital masters. In addition to the pioneering use of the digital medium, the essence of Telarc's success comes from the handcrafted production work of engineer Jack Renner and producer Ron Woods. A minimalist approach to the use of microphones and the interaction with the musical performance brings a unique degree of integrity to their recordings.



CBS Masterworks

Named #1 Classical Label for the third consecutive year in 1985 by *Billboard* magazine, CBS Masterworks features such artists as Wynton Marsalis, Claude Bolling and Jean-Pierre Rampal, Placido Domingo, Y-Yo Ma, Philip Glass, Hubert Laws, Quincy

RCA RED SEAL

RCA Red Seal

The RCA Red Seal division issues classical and Broadway musical



TRUTH...

OR
CONSEQUENCES.

If you haven't heard JBL's new generation of Studio Monitors, you haven't heard the "truth" about your sound.

TRUTH: A lot of monitors "color" their sound. They don't deliver truly flat response. Their technology is full of compromises. Their components are from a variety of sources, and not designed to precisely integrate with each other.

CONSEQUENCES: Bad mixes. Re-mixes. Having to "trash" an entire session. Or worst of all, no mixes because clients simply don't come back.

TRUTH: JBL eliminates these consequences by achieving a new "truth" in sound: JBL's remarkable new 4400 Series. The design, size, and materials have been specifically tailored to each monitor's function. For example, the 2-way 4406 6" Monitor is ideally designed for console or close-in listening. While the 2-way 8" 4408 is ideal for broadcast applications. The 3-way 10" 4410 Monitor captures maximum spatial detail at greater listening distances. And the 3-way 12" 4412 Monitor is mounted with a tight-cluster arrangement for close-in monitoring.

CONSEQUENCES: "Universal" monitors, those not specifically designed for a precise application or environment, invariably compromise technology, with inferior sound the result.

TRUTH: JBL's 4400 Series Studio Monitors achieve a new "truth" in sound with

an extended high frequency response that remains effortlessly smooth through the critical 3,000 to 20,000 Hz range. And even extends beyond audibility to 27 kHz, reducing phase shift within the audible band for a more open and natural sound. The 4400 Series' incomparable high end clarity is the result of JBL's use of pure titanium for its unique ribbed-dome tweeter and diamond surround, capable of withstanding forces surpassing a phenomenal 1000 G's.

CONSEQUENCES: When pushed hard, most tweeters simply fail. Transient detail blurs, and the material itself deforms and breaks down. Other materials can't take the stress, and crack under pressure.

TRUTH: The Frequency Dividing Network in each 4400 Series monitor allows optimum transitions between drivers in both amplitude and phase. The precisely calibrated reference controls let you adjust for personal preferences, room variations, and specific equalization.

CONSEQUENCES: When the interaction between drivers is not carefully orchestrated, the results can be edgy, indistinctive, or simply "false" sound.

TRUTH: All 4400 Studio Monitors feature JBL's exclusive Symmetrical Field Geometry magnetic structure, which dramatically reduces second harmonic

distortion, and is key in producing the 4400's deep, powerful, clean bass.

CONSEQUENCES: Conventional magnetic structures utilize non-symmetrical magnetic fields, which add significantly to distortion due to a nonlinear pull on the voice coil.

TRUTH: 4400 Series monitors also feature special low diffraction grill frame designs, which reduce time delay distortion. Extra-large voice coils and ultra-rigid cast frames result in both mechanical and thermal stability under heavy professional use.

CONSEQUENCES: For reasons of economics, monitors will often use stamped rather than cast frames, resulting in both mechanical distortion and power compression.

TRUTH: The JBL 4400 Studio Monitor Series captures the full dynamic range, extended high frequency, and precise character of your sound as no other monitors in the business. Experience the 4400 Series Studio Monitors at your JBL dealer's today.

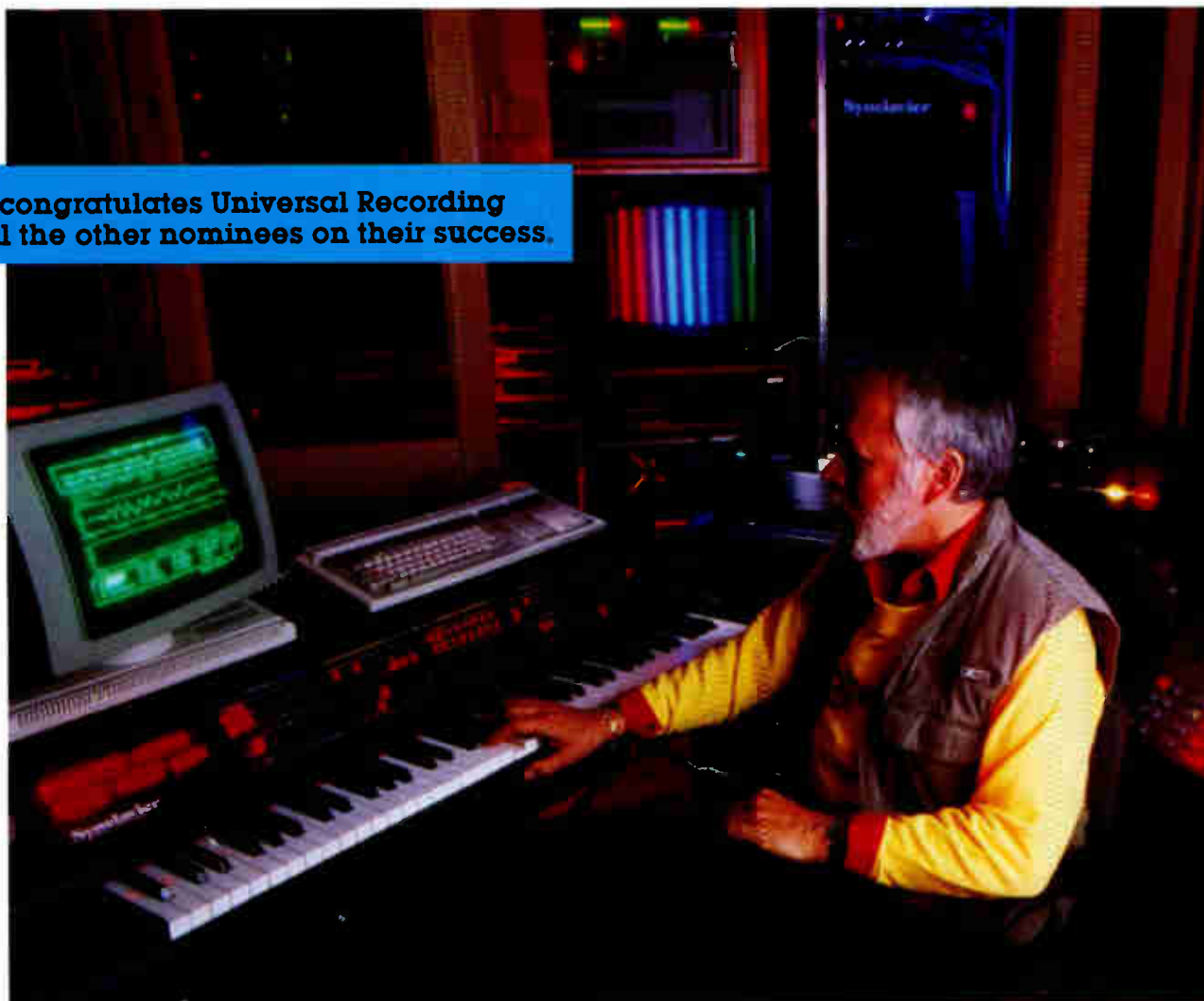
CONSEQUENCES: You'll never know the "truth" until you do.



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Behind Every Synclavier® There's a Success Story

N.E.D. congratulates Universal Recording
and all the other nominees on their success.



Profile: Murray Allen

President, Universal Recording Corporation

Accomplished musician, composer, engineer and businessman, Murray Allen owns one of the largest audio facilities in the world. Universal Recording offers every service in the field of audio from 24-track recording studios, film mixing theaters, and video sweetening rooms to remote sound crews and even a cassette duplication factory. Murray knows that every piece of equipment he purchases must not only provide the highest sound quality and operational flexibility available, but also be able to prove itself financially with a solid return on investment. He comments on Universal's recent completion of a dedicated Synclavier studio:

"We at Universal feel a studio cannot honestly call itself world-class nor can it claim to be state-of-the-art if it does not own and utilize a hard disk-based digital audio manipulation system. Now having said that, we have researched every such system on the market and some on the drawing board and have found only one system sophisticated enough, fast enough, with the kind of sheer computer power we need to serve our clients. That system is the Synclavier."



Outstanding Creative Achievement

Awarded to those persons who, over the last year, have made exceptional creative contributions to professional audio.

- Broadcast Sound Engineer
- Film Sound Engineer
- Sound Reinforcement Engineer
- Mastering Engineer
- Recording Engineer
- Recording Producer

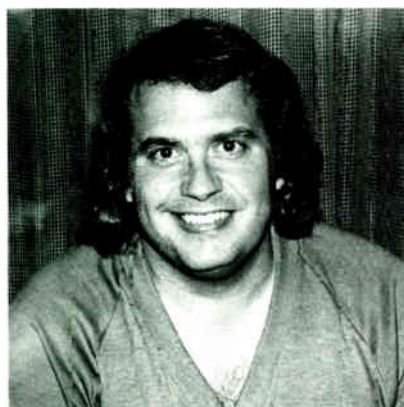
BROADCAST SOUND ENGINEER



Biff Dawes

Westwood One

Thirty-four-year-old Biff Dawes, a Southern California native, attended Cal State Northridge where he majored in Radio-TV-Film. While still in school, Dawes started to get some practical experience at Wally Heider Recording in Hollywood. As a staff mixer, Dawes engineered numerous albums for major artists, while gaining valuable experience as a film scoring mixer and developing an extensive background in location multi-track recording and live mixing. In 1982 Dawes went to Westwood One to head the mobile recording division. As chief engineer for remote recording, Dawes oversees the recording and mixing of many Westwood One concert series programs and specials.



Jim Duncan

Westwood One

Jim Duncan has had a long and varied career in the field of audio production. A 20-year veteran in radio and television audio production, Duncan has served as producer and host of Westwood One's syndi-

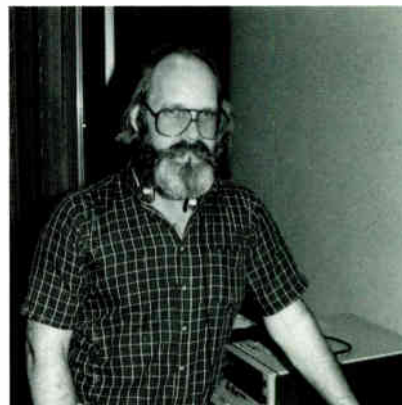
cated concert series for the past seven years. He has recorded and produced commercials for MCA, Motown, A&M, CBS and Capitol records, including the soundtracks for *Miami Vice*, *Running Scared* and *Mad Max—Beyond Thunderdome*. He has recorded and/or mixed many live concerts including: The Oak Ridge Boys, Ricky Scaggs, Alabama, Emmylou Harris and Waylon Jennings. His theatrical-release concert mixes include The Police, Lionel Richie, Olivia Newton-John, Madonna and Duran Duran.



Ron Estes

NBC

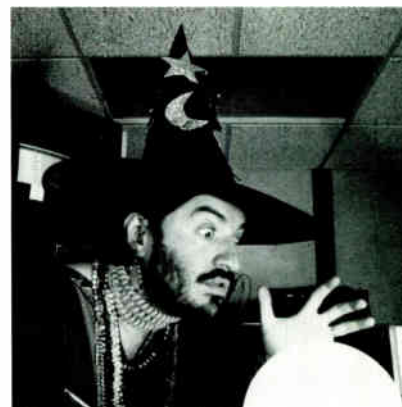
Ron Estes started to work at NBC as an audio mixer in 1969. Some of the shows he worked on include *Flip Wilson*, *The Dick Van Dyke Show*, *Welcome Back Kotter*, *The Midnight Special* and *Hollywood Squares*. He also mixed the Grammy Awards in 1974 and 1977 and the Academy Awards in 1975. In 1983, he was involved with the team that won the Emmy for the Sheena Easton special. Last year, NBC awarded Estes the OB Hanson Engineer Award for technical excellence for his work on stereo television. And he was once again nominated for an Emmy this year for the *Tonight Show*.



David Hewitt

Remote Recording Services

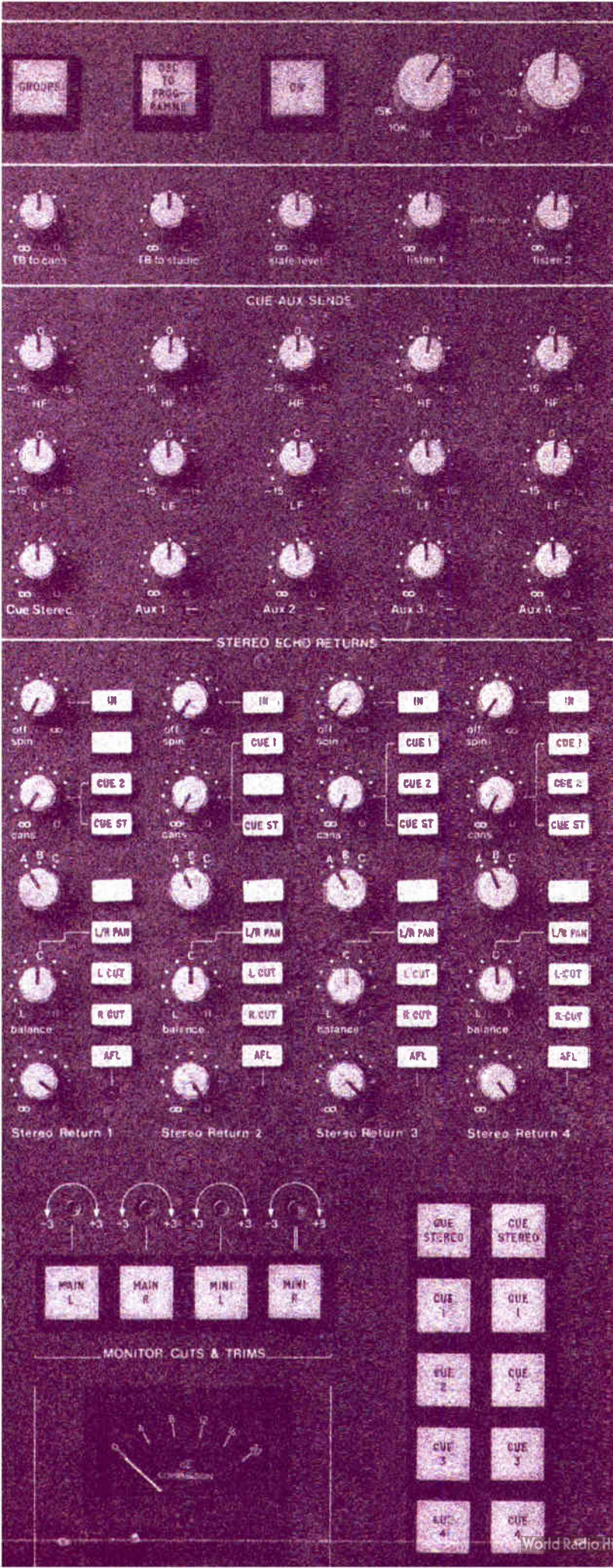
David Hewitt first got involved in the music industry in the late '60s as a recording engineer at Regent Sound Studios in Philadelphia. He went to work at the Record Plant Studios in New York in 1973 as a freelance remote engineer/maintenance engineer and eventually became director of the remote division. In 1978 he designed and built the Black Truck, widely regarded as the best in the industry. In 1979, Hewitt formed his own company, Remote Recording Services, Inc.



Mark Schubin

Lincoln Center

Mark Schubin developed the techniques and technology that made the *Live From Lincoln Center* series possible. In 1976, Schubin created the first nationwide live stereo simulcast network. He received his first Emmy in 1978 for NBC's *Horowitz: Live!*, the first live television show transmitted across the Atlantic Ocean in stereo. Schubin currently supervises all Metropolitan Opera broadcasts, *Live From Lincoln Center* shows and *Sesame Street*.



WESTWOOD ONE
CONGRATULATES
ITS NOMINEES



BIFF DAWES
and
JIM DUNCAN

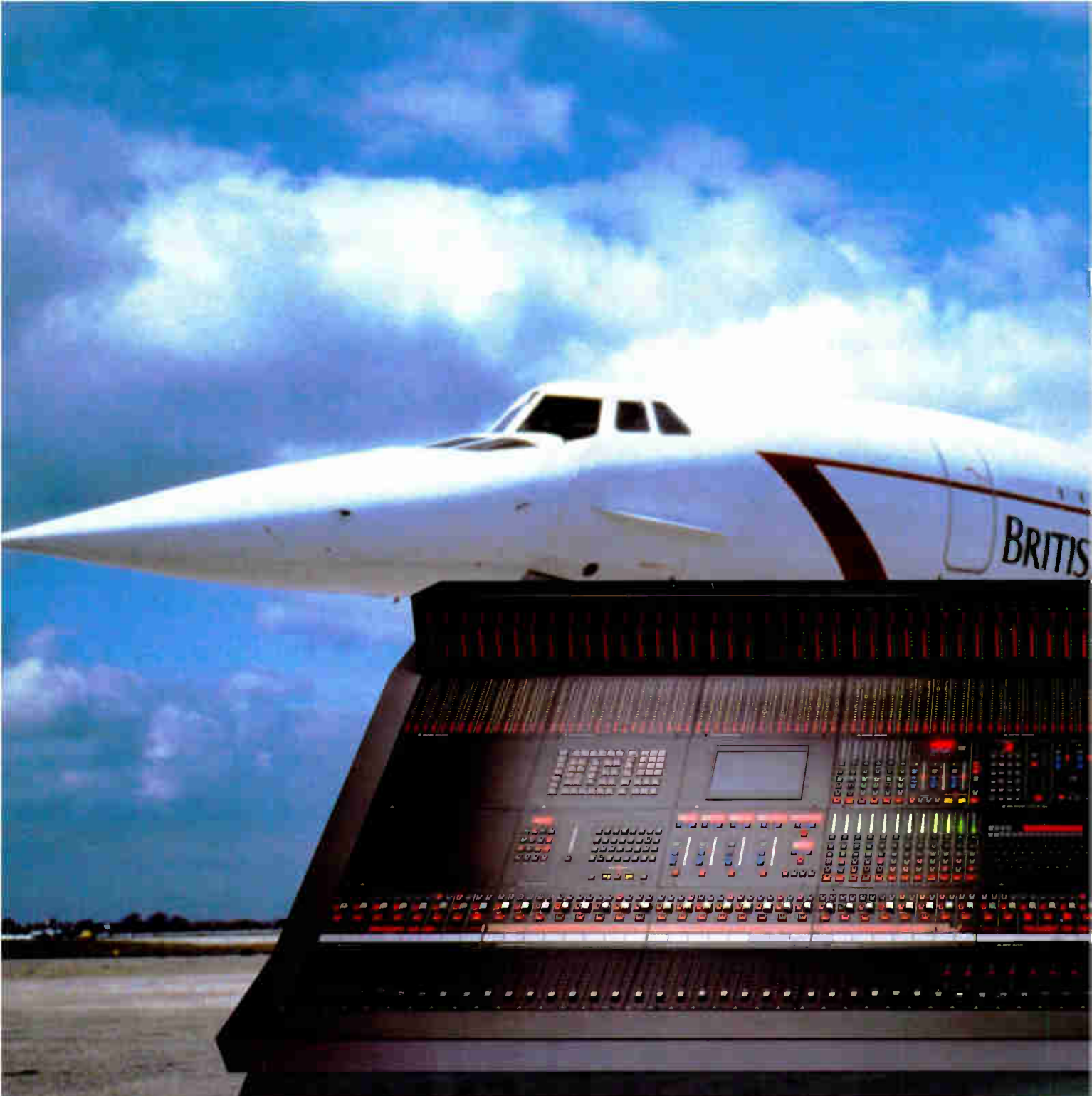


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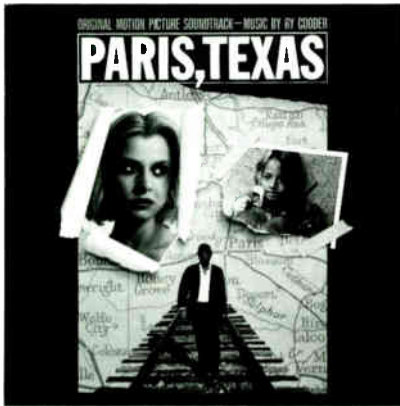
BRITISH TECHNOLOGY

THE DI-AN.



British Airways Composites

FILM SOUND ENGINEER



Ed Anderson
Lion's Gate Sound

Ed Anderson's first break in the recording industry occurred in 1963 when he worked on the technical end of the documentary, *Festival*, filmed at the Newport Folk Festivals. In 1969 he began his long association with The Band (and Bob Dylan), starting as a roadie, then working in sound reinforcement before engineering many of The Band's albums. He also did sound reinforcement for George Harrison's *Bangladesh* concert and the Broadway show *Jesus Christ Superstar*. Anderson started working at Lion's Gate Sound in 1981. Now senior engineer, he has overseen about 80 feature films including *Critters*, *Creator*, *Jaws 3-D*, *Wolfen*, *Volunteers* and *Paris, Texas*. In 1982, working in conjunction with Audio Kinetics, he helped construct the first video-based ADR system in the country.



Bruce Botnick
Digital Magnetics

Veteran of some of the most famous sessions at Sunset Sound in the '60s, Botnick can claim credit for record-

ing such bands as The Doors and Buffalo Springfield. After producing the soundtrack for the movie *Star Trek* in 1979, Botnick and a partner opened Digital Magnetics, an all-digital facility in Los Angeles. Now sole owner of the company, Botnick continues to work on many movie soundtracks including *The Color Purple*, *Poltergeist*, *E.T.*, *Rambo: First Blood*, *Gremlins*, *Indiana Jones and the Temple of Doom*, and *The Twilight Zone*.



Dennis Sands
Back to the Future

Dennis Sands started in the music industry as a professional drummer with a strong inclination and education toward engineering. In 1971, Sands joined MGM Studios as a staff engineer working with such artists as the Osmonds, Kenny Rogers, Sammy Davis Jr., as well as numerous television projects and specials. It was during his tenure at MGM that he met his partner, Angel Ballestier. Together they formed a partnership as independent mixers in 1975, then went on to open their own recording studio, Group IV Recording Inc. in 1977. (Sands became sole owner in 1985.) Sands was awarded an Emmy for Best Tape Sound in 1979 for the TV special, "Steve Lawrence and Eydie Gorme Salute Irving Berlin," and won the 3M Company's Lyra Award as scoring mixer on *Back to the Future*. He has also engineered *On Golden Pond*, *Romancing the Stone*, *An Officer and a Gentleman* and *Jo Jo Dancer*.



Ungar/Hahn/Marino/Baran
Home of the Brave

Leanne Ungar
Leanne Ungar is an independent recording engineer in New York City. In addition to her work on the film and album, *Home of the Brave*, Ungar worked on two previous albums with Laurie Anderson. She has also recorded albums for Peter Gordon, David Van Tieghem, Janis Ian, Cat Stevens, Leonard Cohen and the Paul Winter Consort. Film scores include *Working Girl*, *Key Exchange*, *The Bell Jar*, *The Keep*, *Fantastica*, *L'angeet la femme* and *The Rubber Gun*.



Ken Hahn
Ken Hahn is now in his tenth year of audio post-production. Along the way he has picked up six Monitor Awards and one Emmy, all for Best Sound Mixing. In 1984, Hahn pooled his talents with Bill Marino to design and build Sync Sound, an audio post-production facility in New York City. Hahn currently edits, mixes and sweetens a wide variety of material, both analog and digital, for TV, home video and film. Credits include projects for Billy Joel, The Hooters, Benny Goodman, Ozzy

Osbourne, Mr. Bill, Sony Broadcast, Ricky Scaggs, Julian Lennon and Epcot.



Bill Marino

Bill Marino, president of Sync Sound, has served as a consultant on numerous films and broadcast programs. He has also designed custom equipment to add to the efficiency and quality of post-production. Marino was chief engineer at Regent Sound, then broadcast sound engineer for NBC-TV before forming Sync Sound with Ken Hahn. He has been involved with such productions as the Rolling Stones' *Let's Spend the Night Together* feature film, the Grateful Dead's *Dead Ahead* and Elton John's *Live From Central Park*.



Roma Baran

Roma Baran first worked with Laurie Anderson on the production of *O Superman* in 1979, and has co-produced Anderson's *Big Science*, two titles from *Mr. Heartbreak* and *United*

States Live and the soundtrack album of *Home of the Brave*. She has also produced music for other rock and avant-garde artists, including Alan Ginsberg, Kate and Anna McGarrigle and *The Lost Tropics*. She recently produced the soundtrack for Lizzy Borden's new feature, *Working Girls* to be released this fall. Baran is currently working on the new David Van Tiegham album.



Dan Wallin

Out of Africa

In Dan Wallin's 35 years of experience, he has worked with virtually every major motion picture composer in the U.S., and has been involved with a high percentage of Academy Award winning films. With the Record Plant in Los Angeles as executive director of scoring since 1981, Wallin previously mixed at Warner Bros. Within the last year he's mixed such features as *Out of Africa* (1985 Academy Award's best score and best sound winners), *Commando*, *Karate Kid II*, *Short Circuit*, *Back to School*, *Howard the Duck* and *Children of a Lesser God*. His television production work includes *Crossings* and *Death of a Salesman*.



Billy Youdelman

Bring on the Night

Billy Youdelman has worked as an independent electrical engineer with a specialty in location (live) sound recording for the past 23 years. His work has taken him around the world to Africa, China, South America and the high seas for recording and/or broadcast transmissions for films, television (tape and live) and record albums. His credits include work on "Live Aid," "Farm Aid II," films *Stop Making Sense*, *Divine Madness*, *Beatlemania*, *Roadie* and *A Star is Born*. In TV, Youdelman has recently been involved with HBO shows like Phil Collins' *No Jacket Required*, Linda Ronstadt's Nelson Riddle program in Santa Barbara, Yes in Edmonton and Rod Stewart in San Diego. He has also worked on live telecasts for the Academy Awards, American Music Awards, Country Music Awards and the Super Bowl. His credits continue in the recording studio with his work on the last few Little Feat albums, some of Ronstadt's studio work with Nelson Riddle, and his all-time favorite, Herbie Hancock's *Future Shock* album.

SOUND REINFORCEMENT ENGINEER



Paul DeVilliers

Paul DeVilliers first became interested in music when he started playing the piano at the age of eight or nine (his mother was a music teacher). Ten years ago, after playing in bands and as a session musician, he started working as a live engineer. DeVilliers enjoyed working in the studio, but missed going out on the road. When Ann Murray offered him a job in 1980, he couldn't pass it up, and he left to work with Murray for four years. In his spare time he also worked with Bette Midler, Stevie Wonder, and Ashford & Simpson. In 1984, he worked with Yes on their 90125 tour in Europe, the United States and South America. DeVilliers has recently started producing and engineering, both in the studio and live. His most recent concert mixing has been with Mr. Mister, having previously produced the band's record.



Dan Healy

Dan Healy began his career in music at the age of five, experimenting with radios. After working in recording studios as a technician and engineer,

Healy went on to produce jingles and then records for Mercury, Warner Bros. and Capitol Records. His first live sound mixing started with the Grateful Dead in 1966. With the support of the group, Healy developed four different large-scale, high-quality Grateful Dead systems, including the "Wall of Sound."

Numerous individual items were also invented during this time, such as the direct active recording bridge, the phaser, piano pickup and several microphones which were all licensed to Countryman Associates and are still being manufactured and sold. Healy also designed and built several studio recording and PA consoles and he developed the concept of delay towers for large scale live sound. Currently working in conjunction with Ultra Sound, Healy is developing computerized equalization and digital equalization processing systems.



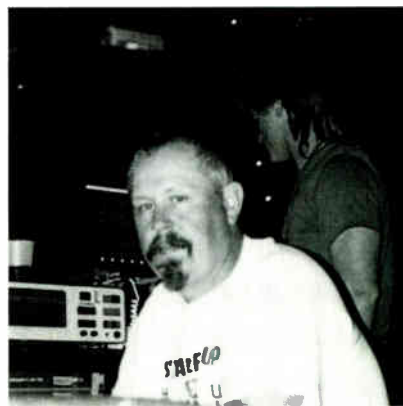
Bruce Jackson

In 1967, Bruce Jackson formed Jands, his own sound reinforcement lighting and manufacturing company in Australia. Four years later, he sold his company and joined the growing Clair Brothers, engineering Elvis Presley tours until 1977, and working with a variety of other artists. The offer to work as Bruce Springsteen's mixer tore him away in 1978. After the completion of Springsteen's '78 tour, Jackson imported, promoted and set up distribution for the Fairlight CMI. Having recently completed his third tour with the Boss, Jackson has formed a new company, Apogee Electronics Corp. Their first product is an anti-aliasing filter to improve the sound of existing digital multi-tracks.



Buford Jones

Buford Jones started in the sound reinforcement business as a sound engineer and mixer with Showco in late 1970. While there, he worked with such artists as David Bowie, Linda Ronstadt, James Taylor, ZZ Top, Three Dog Night and Stevie Wonder. After ten years, Jones left Showco to work as an independent mixer for Ronstadt, Taylor, Jackson Browne, Pat Benatar and Don Henley. Buford currently owns and maintains a 16-track recording studio in Dallas.



M.L. Procise III

In 1974, Martin Luther Procise III mixed his first band, Ethos, back in his hometown of Fort Wayne, Indiana. Ten years later, he moved to Dallas to work with Showco where he was the monitor engineer for such groups as Genesis, Thin Lizzy, Joan Armatrading and ELO. It was in 1979 on the Bee Gee's tour that Procise first mixed for the house and he's been doing it ever since. Now a senior sound engineer for Showco, Procise has mixed on three tours with the Jacksons. He is currently working on the ZZ Top tour.

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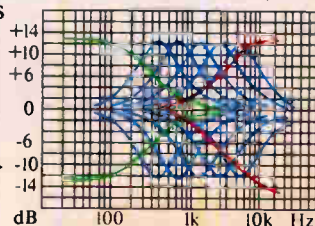
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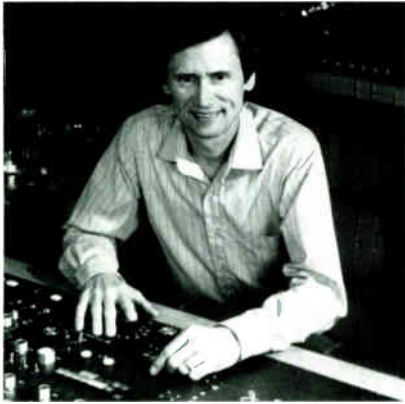


EQ characteristics of the MX-P61.

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MASTERING ENGINEER



Bernie Grundman

Bernie Grundman Mastering

Bernie Grundman began his mastering career in Hollywood at the Contemporary Jazz label, working in all aspects of recording. After a few years, he moved to A&M Records as head of their mastering department. During his 15 years at A&M, Grundman worked on numerous gold and platinum albums. In 1984 he opened Bernie Grundman Mastering in Hollywood where he continues to cut many of the top albums in the industry.



Steve Hall

Future Disc Systems

Steve Hall began his career 12 years ago as a recording engineer at Whitney Recording Studios in Glendale, California, where he obtained an understanding for the musical and technical demands of disk mastering. In 1977, Hall began mastering many projects including Pat Benatar, Blondie and Barry White. In 1982, he became a partner in Future Disc Systems. His tenure there has included

work with Madonna, Peter Cetera, Al Jarreau, The Jets and Jermaine Jackson.



Bob Ludwig

Masterdisk

Bob Ludwig received a Bachelor of Music degree from Eastman School of Music. While there he assisted Phil Ramone at Eastman's first recording workshop. Ludwig went on to work with Ramone and learn the art of disk cutting at A & R Recording. In 1968 he joined Sterling Sound and became vice-president. In 1976 he moved to Masterdisk Corporation where he assumed the position of executive vice-president and chief engineer. In the past year he has worked with Bruce Springsteen, the Rolling Stones, Journey, John Cage, Bryan Adams, Sting, David Bowie, Hall and Oates, and Z.Z. Top.



John Macdonald

Digital Audio Disc Corporation

John Macdonald graduated from Middle Tennessee State University in

the Recording Industry Management Program with an emphasis on audio engineering. He was chief engineer at Rivendell Recording and has worked as an independent in Nashville-area studios. In 1984, Macdonald went to work for Digital Audio Disc Corporation, where he has been performing CD mastering. He trained for compact disc mastering in Tokyo, Japan at CBS/Sony's Shimanomachi Studio, under the direction of T. Tomita.



Glenn Meadows

Masterfonics

Glenn Meadows began his career in the recording business in 1970 at a new studio, the Sound Pit, in Atlanta, Georgia. He did all of the installation in the two studios, and was in charge of equipment maintenance as well. After learning how to master records at the Sound Pit, Meadows moved to Nashville to work at the then new facilities at Masterfonics, Inc. In 1981 he became co-owner of the facility. Over the 11-plus years that Meadows has been at Masterfonics, the studio has cut multi-platinum albums for Jimmy Buffett, Dan Fogelberg, Lynard Skynard, Paul Davis and others in both the pop and country fields. Meadows has personally been involved in mastering more than 50 gold and platinum LPs and singles.

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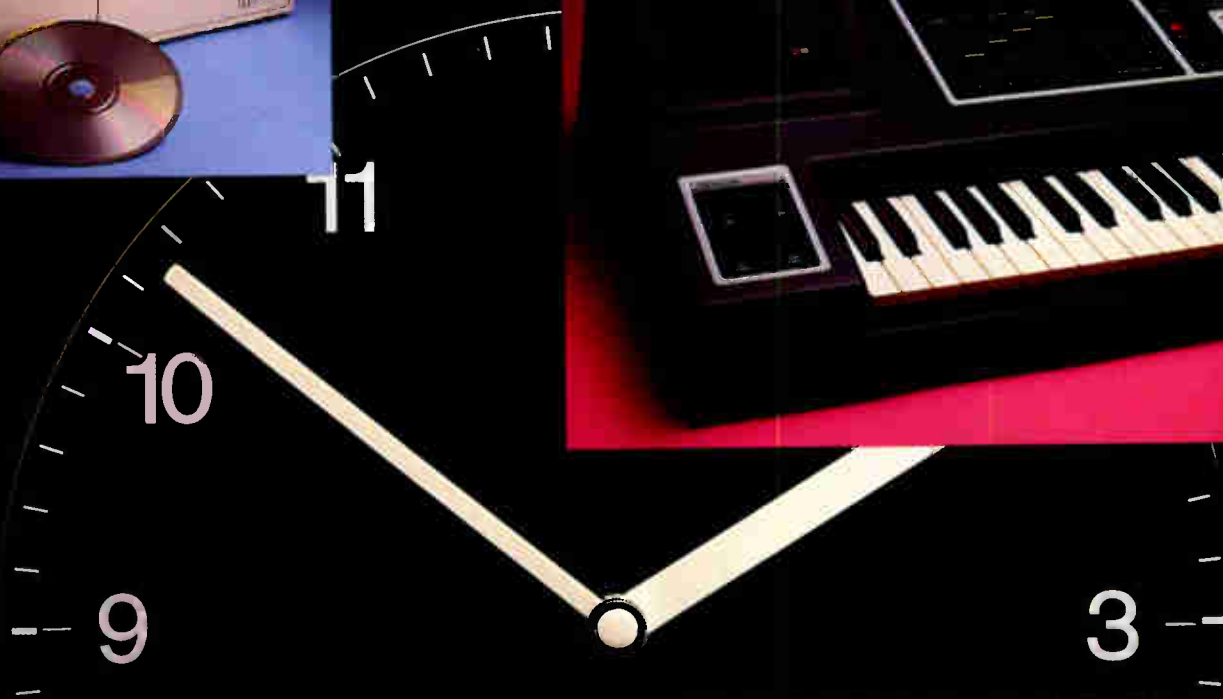
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RECORDING ENGINEER



Bob Clearmountain

Bob Clearmountain began his career at the age of 19 when he was hired at Mediasound Studios as a delivery boy. Within a few short years, he was engineering projects for such artists as The Climax Blues Band, Maynard Ferguson, Sister Sledge, and Kool and the Gang. In 1977, Clearmountain signed on at the newly formed Power Station as chief recording engineer. Since then, as an independent producer/mixer, Clearmountain has worked with a steady stream of hitmakers. During the past year he's worked with the Pretenders, Tina Turner, Daryl Hall, Bryan Adams and Journey. He's also just completed work on Bruce Springsteen's new album, and a new one for David Bowie due out after the first of the year.



Neil Dorfsman

Neil Dorfsman's entrance into the world of music was anything but auspicious. After one year of college, he decided that school wasn't for him, but music was. So he left New York for California to find a job. The

only job he found was working on special effects in movies. Completely frustrated, Dorfsman moved back to New York and worked on voiceovers for radio. He also sent out 200 resumes and Electric Lady Studios offered him a job. Two years later he was working at the Power Station. Now an independent, Dorfsman has worked with Tina Turner, Billy Idol, Bruce Springsteen, Weather Report, Bonnie Tyler and Richard Thompson. This year he garnered a Grammy Award for Best Engineer for his work on Dire Straits' *Brothers in Arms*.



Humberto Gatica

Humberto Gatica left his native Chile at the age of 17 to come to the United States. Four years later he started his career in the music industry as a gopher for MGM Studios, becoming an assistant engineer within six months, and then an independent engineer 18 months later. His first clients included the Boones, the Osmond Brothers, Shaun Cassidy and various European artists. Gatica went on to work exclusively with producer David Foster. Gatica won the 1985 Grammy Award for Best Engineering on the *Chicago 17* LP and he also recorded the "We Are The World" session. Recent clients include Barbra Streisand, Kenny Loggins, Kenny Rogers, Michael Jackson, Lionel Richie and Diana Ross. Gatica has expanded his horizons, producing the "Hands Across America" single, as well as David Foster's new solo LP.



George Massenburg

A sound designer and systems architect, George Massenburg also produces records. He realizes modern techniques as combination forms of other disciplines which would ordinarily never cross paths. His company, GML, Inc. builds the devices that result. Originally from Baltimore, he now lives in Sherman Oaks, California.



Alan Parsons

Alan Parsons started a virtual fairy tale career as assistant engineer with the Beatles at London's famous Abbey Road Studios. His credits include The Hollies, Ron Wood and Pink Floyd, for whom he engineered the classic *Dark Side of the Moon* album. As a producer, he has worked with Pilot, Al Stewart, John Miles, and his own Alan Parsons Project. Parsons has installed a private 48-track digital studio at his home in Kent, England where he lives with his wife and two children.

RECORDING PRODUCERS



Phil Collins/Hugh Padgham

Phil Collins

Phil Collins has always fancied himself a drummer first. But that hasn't stopped him from delving into just about every job in the music world. Collins joined Genesis 16 years ago as a drummer and eventually became lead singer. Collins also co-produces, writes and co-writes songs, performs on keyboards and creates solo albums. He has worked with Philip Bailey and Eric Clapton, and as a sideman for Brian Eno, Thin Lizzy, John Cale, Robert Plant and Robert Fripp. His *Against All Odds* album was a big success and earned him his first Grammy Award, and his album, *No Jacket Required* won last year's Grammy for Album of the Year.



Hugh Padgham

Hugh Padgham's career as a recording engineer was solidified in 1980 with the release of Peter Gabriel's third album. Most of his big successes as a record producer have come with the acts he co-produces, including work with Phil Collins, The Police and The Waitresses. He

has also produced and engineered work with Genesis, Howard Jones, Paul McCartney, David Bowie, The Human League and The Call. Padgham won his first Grammy for *Synchronicity* in 1983. In 1985, his work on *No Jacket Required* earned him a second Grammy Award as well as a *Music Week* award for Best British Producer.



Mark Knopfler/Neil Dorfsman

Mark Knopfler

Singer, songwriter and guitarist Mark Knopfler has just finished a year-long world tour with his group, Dire Straits. Their album, *Brothers in Arms* is one of their most successful albums to date. In addition to writing and producing Dire Straits' albums, Knopfler has also contributed to the work of Chet Atkins, Bob Dylan, The Everly Brothers, Bryan Ferry, Van Morrison, Steely Dan and Tina Turner, either as a writer, producer, and/or guitarist. He has also written and recorded the music for David Putnam's films *Local Hero* and *Cal*.



Neil Dorfsman

Neil Dorfsman's entrance into the

world of music was anything but auspicious. After one year of college, he decided that school wasn't for him, but music was. So he left New York for California to find a job. The only thing he found was a job working with special effects in movies. Frustrated, Dorfsman moved back to New York and worked on voiceovers for radio. After sending out 200 resumes, he was offered a job by Electric Lady Studios. Two years later he was working at the Power Station. Now an independent producer, Dorfsman has worked with Tina Turner, Billy Idol, Bruce Springsteen, Weather Report, Bonnie Tyler and Richard Thompson. This year he garnered a Grammy Award for Best Engineer for his work on *Brothers in Arms*.



Michael Masser

At the age of 30, with a successful law career and a wife and two children, Michael Masser came to California to realize his life-long dream of becoming a producer. "Touch Me in the Morning" sung by Diana Ross was his first number one hit. His midas touch continued with songs like "Do You Know Where You're Going To" and "Tonight I Celebrate My Love." In 1984 Masser chose the unknown Whitney Houston to team up with Teddy Pendergrass on his comeback album. Masser went on to produce Houston's first album. "Saving All My Love for You" was their first number one song and a Grammy winner.



Phil Ramone

Seven-time Grammy Award winner Phil Ramone is best known for producing such artists as Billy Joel, Barbra Streisand, Paul Simon, Chicago and Kenny Loggins. He has just completed production on *The Bridge*, Billy Joel's newest release. In the past few years Ramone branched out to work as music supervisor for the

movies *Flashdance* and *White Nights*, as well as working as sound consultant for musicals including *Little Shop of Horrors*, *The Wiz* and *Chicago*.



Narada Michael Walden

Before percussionist/keyboardist/composer/vocalist/producer Narada Michael Walden became one of the hottest producers in the business, he

made a name for himself as a world-class musician. His work with John McLaughlin's Mahavishnu Orchestra led to work on Jeff Beck's *Wired* album and Weather Report's *Black Market* LP, along with a string of solo recordings. He has made strong contributions as a producer working with Whitney Houston, Stacy Lattisaw, Angela Bofill, Sister Sledge, Herbie Hancock and Patti Austin, and his greatest success with Aretha Franklin and Clarence Clemons.



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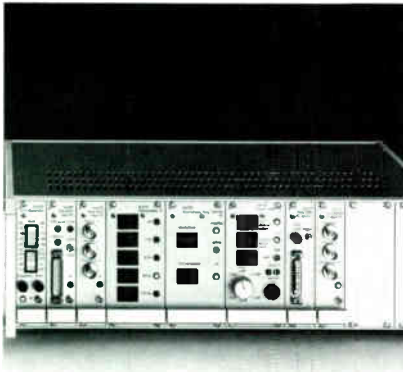


Outstanding Technical Achievement

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- Tape Manufacturing Technology
- Film/Broadcast Sound Technology
- Acoustics Technology
- Sound Reinforcement Technology
- Musical Instrument Technology
- Recording Technology

TAPE/DISC MANUFACTURING TECHNOLOGY



Harmonia Mundi Acustica

bw 102 Digital-Audio Interface

The bw 102 is a modular system enabling engineers to perform signal processing in the digital domain and interface between various digital formats. Processing capabilities include such typical studio functions as level control with high resolution faders, polarity and channel reversal, high pass filtering, multi-band parametric equalization and time delay. A sampling rate conversion module allows transfer between systems of different sampling frequencies, and a test generator module facilitates calibration of digital levels.

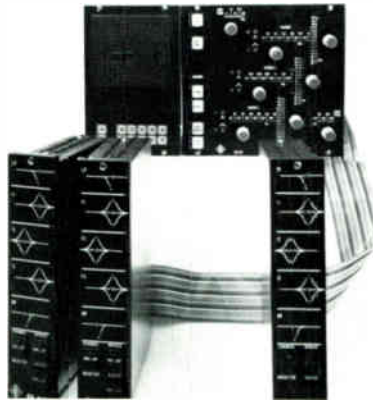


JVC

D-900 Digital Audio Mixer/Equalizer

The D-900 digital audio mixer offers unique advantages when mastering compact discs and LPs. It provides three types of equalizers (Bell, Shaving and Pass), as well as four-band EQ, and can be used during both editing and live recording. The EQ channels can also be cascaded. The mixer is fully automated and compatible with an IBM-PC and floppy

disks for automated use. Digital Signal Processors are employed for digital signal equalization and level control.



Neumann

AME 591 Equalizer

The AME 591 is a fully automated analog equalizer system for consoles or stand-alone use, providing up to 64 channels utilizing digital control for all equalizer parameters. Micro-cassette data storage allows ten banks of equalizer settings to be recalled instantly from RAM during mixdown. Other features include selectable bandwidth of one or three octaves, high and low pass filters, each with four selectable frequencies and 12 dB per octave attenuation, tuneable filter frequencies, and three parametric filters with ± 15 dB range in 2 dB steps.



Philips/Sony

CD-Interactive Format Standard

The CD-I (Compact Disc-Interactive) standard proposed by Sony and Philips expands the medium's capa-

bilities beyond CD-ROM and conventional compact disc applications. Specializing in audio-video information, CD-I has a total data storage of approximately 650 megabytes: video pictures can be presented in either normal or high-resolution modes, and RGB graphics support 32,768 colors standards. Audio is available in three modes—hi-fi, mid-fi, and speech; stereo or mono—with up to 16 playback channels of 70 minutes each.



Teldec

Direct Metal Mastering

The DMM disk mastering lathe cuts a groove directly into metallic copper using a diamond cutting stylus, resulting in a master record with sonic qualities far superior to the traditional lacquer master. The copper master is processed by the manufacturing plant as if it were a mother, thus eliminating the tricky and quality degrading process of silvering, which lacquer requires. The resulting vinyl LP pressings exhibit superb transient response, very low distortion, increased stereo separation and a significant reduction of groove echo.

ams would like to thank the readers of *Mix Magazine* for nominating **AUDIOFILE** for a TEC Award for Outstanding Technical Achievement, Film and Broadcast Sound Technology.



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FILM AND BROADCAST SOUND TECHNOLOGY



AMS *Audiofile*

Audiofile, a powerful digital recording/retrieval system, is the result of over 18 months of intensive field experience. By using Winchester-type hard disks, Audiofile can digitally record and edit sound, storing it in nonvolatile memory for instantaneous playback on demand. Up to one hour of audio storage per disk is available, with additional disks giving more storage time. Audiofile can be used in a wide variety of ways, such as stereo mastering and editing, video/film track laying, or as a multi-track extension system. More than 20 systems are currently in use.



Droid Works *SoundDroid*

SoundDroid, introduced in prototype form in 1985, combines the key ingredients of the sound studio in one system: all-digital sound processing, instant access to recordings and a totally programmable and flex-

ible system operating various software modules for different functions. The SoundDroid development team, headed by Dr. J. Andrew Moorer, is focusing its efforts on a range of hardware and software "tools" that can be combined to meet the needs of numerous applications—spotting and transfer; ADR and Foley; editing and building of dialogue, music and effects units; effects and music synthesis; automated mixing and digital recording.



Fostex *Model 4030 Synchronizer*

The Model 4030 synchronizer is SMPTE time code based, provides resolution to 1/100th of a frame and can be used for video-to-audio or audio-to-audio sync. The serial interface port allows hookup to a computer for external control. Completely software-based, the 4030 can easily be updated or modified by replacing the socketed EPROM. While initially designed for Fostex recorders, specific software for other recorders such as Otari, MCI, Studer and Tascam will be available in the future.



Solid State Logic *SL 5000 M Series* *Audio Production System*

The SL 5000 M system is a new generation of audio console architecture from which a variety of specialized and general purpose broadcast audio consoles may be constructed. The system's modular mainframe and bus card structure accept custom-specified configurations of more than 40 Eurocard-style audio and control "cassettes" to form a console tailored exactly to the user's needs.



Sound Ideas *CD Sound Effects Library*

The Sound Ideas CD Sound Effects Library utilizes a specially designed programming system and mastering process to maximize disc capacity and reduce crucial access time. The entire library of more than 3,000 effects, originally offered on 125 tape reels, is now pressed onto just 28 compact discs. The entire library is fully cataloged using both an alphabetical and disc track/index listing, and is fully cross referenced.

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ACOUSTICS TECHNOLOGY



Acoustics Sciences Corp.

Tube Traps

The tube trap is an acoustic technique that controls broadband room resonance from 40 Hz through 400 Hz and corrects room boundary-induced low-end phase distortion. Corner loaded tube traps reduce the "Q" resonance response of the room by at least a factor of four. The mean and deviation of RT time constants are also both reduced. This system easily packs 15 Sabines absorption into each three-foot length. They also have frequency selective crossover panels for midrange reflection or absorption.



Bruel & Kjaer Instruments, Inc.

Speech Transmission Meter Type 3361

The Speech Transmission Meter Type 3361 enables objective qualitative assessment of an acoustic communication channel with respect to speech intelligibility. The 3361 consists of two instruments—a transmitter and receiver. The transmitter is placed at the position normally

occupied by the speaker and sends out a special acoustic test signal. The receiver is placed at the listening position and analyzes the incoming signal, measuring the reduction in modulation depth for each frequency. This measured reduction is converted to an index of speech intelligibility (RASTI). Applications include assessment of speech intelligibility in auditoria, lecture rooms, etc., with or without sound reinforcement systems.

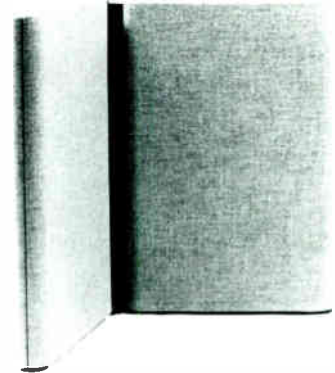


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Meyer Sound

Source Independent Measure (SIM™)

The SIM technique is a fast and accurate method of simultaneously analyzing and correcting sound system response during a performance while an audience is present. By using SIMCAD (Source Independent Measurement Computer Aided Device) in conjunction with a low distortion, phase coherent loud-speaker system and a complementary parametric equalizer, SIM quantifies and corrects for the frequency and phase response aberrations caused by the listening environment and permits the use of any test signal for analysis, including the musical or vocal portion of a live performance.



Monster Cable

Soundex Acoustical Panels

The Soundex™ acoustical control panels were designed to meet three important criteria: a high level of acoustical control; the requirement for an aesthetically acceptable finished product even in the most demanding installations; and finally, fire safety considerations. Monster Cable carefully balanced the acoustical properties of the chosen fiberglass and fabric, together with appropriate construction techniques to create the Soundex panels.



Rapid Systems Inc.

FFT Peripheral/Software

The R411 is a low cost, high performance FFT spectrum analyzer peripheral for IBM PC, XT, AT and compatible computers. Totally turn-key, with no need for programming, a disk is inserted to start the analysis of frequency versus amplitude spectrums onscreen. Applications
Continued on page 58

From page 57, *Acoustics Technology* include uses in the medical, electronic, mechanical and chemical fields. Features include both log and linear scaling for frequency and amplitude, programmable input ranges from 1.6v to 320v p-p, spectrum averaging, sampling rates from 100 Hz to 500 kHz in a 1/2/5 sequence, selectable data sample offset and user access to time series data for pre-processing.



Scientific Design Software

Computer-Aided Speaker Design Program

Computer-Aided Speaker Design is a software program for Apple and IBM computers permitting the design and modeling of loudspeaker systems and crossovers. The program is

designed with a user-friendly, menu-driven format, making it easy to learn and use. The program calculates and graphically plots the response and displacement limited functions for both sealed and vented systems. An electronic filter can also be incorporated in the design. A complete crossover program allows the design of 6, 12, 18 and 24 dB/octave crossovers, complete with impedance correction networks. One of the program's unique features is a driver database encompassing 500 drivers.

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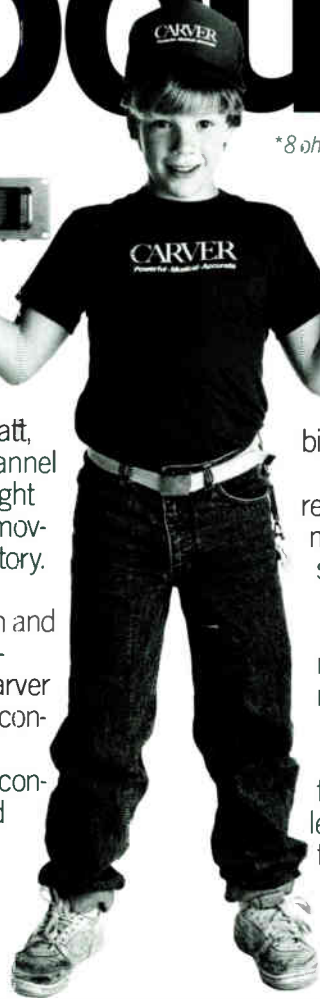
HOW THE CARVER PROFESSIONAL MAGNETIC FIELD AMPLIFIER PM-2.0t SHEDS NEW LIGHT ON THE PROBLEM OF WEIGHT VS. OUTPUT.

Back in the days when heavy-duty amplifiers were running about a pound per watt, Carver Corporation introduced 450 watts/channel in a 21-pound chassis, called the PM-1.5. Freight bills started coming down. Roadies began removing their hernia truss belts. And the rest is history.

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And yet delivers 465 watts per channel 20-20kHz into 8 ohms. 600 watts RMS per channel into 4 ohms. Or an astonishing 625 watts into 8 ohms in mono mode! All at less than 0.5% THD. While retaining all the speaker and amplifier protection features that have made the PM-1.5 one of the safest and most reliable designs ever offered. Without skimping on the little extras such as soft start-up, LED power monitoring and proportional-speed fans.



Carver did it through further refinements in their patented Magnetic Field Coil power supply system. Along with a remarkable monocoque-style chassis that's strong enough to support a bass bin and yet lighter than an outboard signal processor. In spite of Carver Professional Division's track record for rugged reliability, we know your credibility may be strained by the PM-2.0t's seemingly impossible weight-to-power ratio. Suffice to say, it is no cream puff.

The PM-2.0t is designed to be tumbled down a ramp and slammed into place. It's out on the road right now proving it can take this kind of punishment. When size and weight are critical economic factors — when you need to deliver 24,000 watts RMS from an amp stack less than six feet high — weighing less than 5000 watts worth of the competition, then there can be only one choice.

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4 ohms: 600 watts RMS/chan. 8 ohm mono: 625 watts RMS/chan. 4 ohm mono: 1000 watts RMS/chan. IM Distortion: less than 0.1%. Response: -3dB @ 5Hz, -3dB @ 80kHz. Gain: 29dB. Slew Rate: 25V/uSec. Damping: 200 @ 1kHz. Noise: Better than 110dB below 465 watts. A-weighted. Dimensions: 19"W x 3.5"H x 12.25"D. Weight: 10 lbs. 12 oz.

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A major design achievement in the GLM is the development of manufacturing technology permitting the microphone to be encased in a tough, resilient elastomer without damaging its performance characteristics. This molding technology allows certain acoustic and physical performance advantages, including beveled acoustic ports to reduce resonance and smooth high frequency response; resilient protection of the element, making the microphone very rugged for its size; and an efficient flex/strain relief at the microphone which is actually a part of the molded element housing. The miniature size of the GLM contributes to the uniform polar patterns and smooth, wide range.



Harrison

HM-4 Console

Based on the technology developed for the Harrison 5-Series consoles, the Harrison HM-4 is a mixing con-

sole system designed to operate easily in a broad range of sound-reinforcement applications. Specifically configured for front-of-house mixing, the HM-4 is designed to allow different physical layouts, portable or mixed mainframe styles and a wide range of field-programmable signal path options to allow the user the freedom to configure the console exactly as needed, with the ability to change it in the future as requirements change.



Intersonics Incorporated

Servo-Drive Loudspeakers (SDL™)

In response to technical difficulties stemming from the long voice coils required to produce large excursions, Intersonics began searching for a better way. This led to the development of the Servo-Drive Loudspeakers, which incorporate a high-tech, rotary-type low inertia motor. The rotary motion is converted into linear motion by means of a noiseless, balanced, push-pull mechanism. The SDL mechanism is more efficient, linear and rugged than conventional voice coil sub-woofers, tolerating large excursions and musical peaks that would instantly damage voice coil drivers. In addition, the latest horn-loaded systems have no power compression, even at twice their rated power.



Meyer Sound Labs

CP-10 Complementary Phase Parametric Equalizer

The CP-10 is a two-channel device featuring ten fully parametric equalizer circuits and two shelving cut filters. The front panel occupies 3.5 inches of rack space and the controls include individual in/out switches for each band of equalization. There are separate calibrated controls for center frequency, boost/cut and bandwidth. Individual LED indicators show the onset of clipping as well as the presence of AC power. The complementary phase circuitry assures minimum phase distortion even at extreme settings, and the dynamic range of the instrument is better than 110 dB under operating conditions.



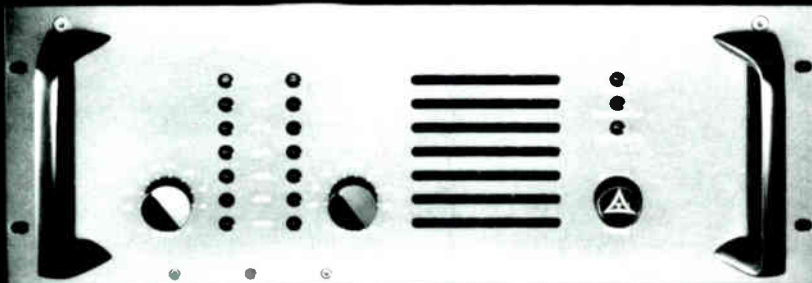
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Smart System Loudspeakers

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— Continued on page 62

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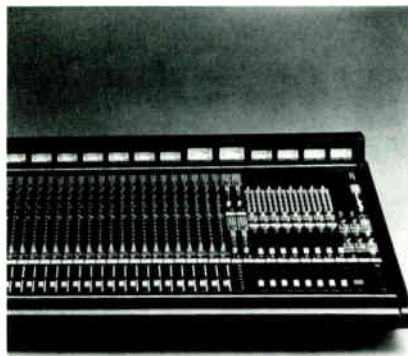


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—Continued from page 60
hi-fidelity sonic quality at high sound pressure levels. The heart of the Smart System, the R-H processor, protects the speakers against excessive diaphragm and cone excursion and voice coil overheating. The system's specially dedicated design results in a lightweight, compact system which is easily transported, installed and setup. Smart System users include Crystal Gayle, Bill Graham, the London Palladium, Canada's Expo '86 and Atlanta's Centerstage Theater.



ied sound reinforcement applications. The console features eight programmable mute groups, eight assignable VCA groups, eight auxiliary sends and eight conventional groups, along with a stereo bus. The console's flexible routing allows it to be configured for almost any application. The sonic transparency and extensive equalization functions allow the engineer great detail control over the entire audio spectrum, permitting creative and natural sound mixing.

Yamaha International
PM3000 Audio Mixing Console

The PM3000 console provides a wide range of features and extraordinary flexibility that make it ideal for var-

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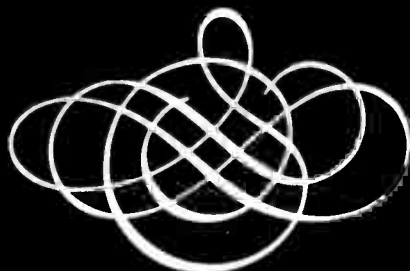
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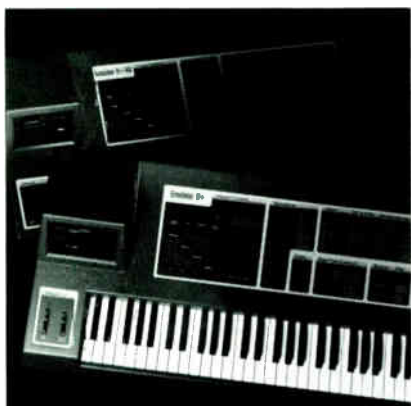
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MUSICAL INSTRUMENT TECHNOLOGY



E-mu Systems

Emulator II

The Emulator II is a specialized digital recording and playback device, which also features some digital editing and analog processing facilities. All sound material may be stored onto a floppy or hard disk in raw or finished form, then recalled and edited at any time. The Emulator II also carries an onboard 8-track sequencer for compositional work and it interfaces easily to MIDI, SMPTE and RS-422.



Ensoniq

Mirage Digital Multi-Sampler

The Mirage Digital Multi-Sampler features all the sound generating and sampling capabilities of the Digital Sampling Keyboard, but without the keyboard. It adds digital sampling capabilities to any MIDI setup. Designed for live performance as well as sampling, the Mirage has a 61 semi-tone range (five octaves) and can be used with more than 30 playback parameters including filter and

amplitude envelopes, modulation and dynamics. It also features an onboard sequencer with overdub capabilities. The 128K memory can accommodate up to 16 distinct samples at one time. These samples can be played back polyphonically through the Mirage's eight voices, with each voice featuring two digital oscillators.



Fairlight Instruments Inc.

Fairlight Computer Musical Instrument Series III

The Series III is one of the most advanced, cost-effective, complete music production systems available today. It's combined features provide virtually an unlimited number of possibilities for the composer and/or producer with its real time composition and sequencing capabilities. The components and features of the Series III include up to 14 Mb waveform RAM, 16-bit stereo sampling at 50 kHz, 16 independent 16-bit audio channels, three advanced sequencers, Rhythm Sequencer, Music Composition Language, and CAPS (Composer, Arranger, Performer, Sequencer), which includes 80 tracks and score printing. Standard features also include a 140 Mb hard disk, 60 Mb streaming tape drive, full MIDI and SMPTE.



Linn Electronics

Linn 9000

The Linn 9000 is an integrated digital sampling drum machine and 32-track MIDI sequencer. Its operation is simple and intuitive, similar to a tape recorder, allowing the user to fast forward or rewind to a particular location within a song and then record or edit. It's features include dynamic-sensitive front panel drum buttons, a capacity of 32 simultaneous polyphonic tracks for each MIDI sequence, single-step recording and editing, live erasure of specific notes within a sequence, pressure-sensitive "note repeat" function, programmable hi-hat decay for each note, and a help function.



New England Digital

Synclavier Digital Audio System

The Synclavier is a comprehensive facility for composing, recording, editing, performing and printing music. It can also be used as a video

—Continued on page 66

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—Continued from page 64

post-production tool, providing a new approach to dialogue replacement, sound effect design, SMPTE-based editing and recording. The Synclavier has features that include digital synthesis, resynthesis, high-fidelity polyphonic sampling (100 kHz/16-bit), MIDI, SMPTE, guitar interface and high-resolution music printing. Options include Sample-to-Memory (provides stereo sampling at 100 kHz per channel), and the Direct-to-Disk Multi-Track Recording System which provides up to 16 tracks of digital recording at 100 kHz.



the TX816 contains eight tone modules, each roughly equivalent to one DX7, with additional memory and features. Each of the eight modules has its own set of 32 voices (which may be re-programmed and modified), MIDI in and thru, and an XLR line-out connector. Unlike any other sound synthesis system, the TX816 can produce electronic sounding voices of other synthesizers, as well as an almost limitless number of natural acoustic voices. The TX816 is part of YCAMS: the Yamaha Computer-Assisted Music System.

Yamaha International

TX816 FM Tone Generation System

The TX816 offers a vast creative potential when teamed with any MIDI-based system. Using the same FM digital technology as the DX7,

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RECORDING TECHNOLOGY



Dolby Laboratories *Spectral Recording Process*

First introduced at the Montreux AES Convention in March, Spectral Recording is the result of six years of development by Ray Dolby. The signal purity of the SR system is said to offer significant advantages over other methods of recording, especially at the extremes of dynamic range where earlier analog and digital systems have audible deficiencies. Dolby SR can be used with any professional recorder providing simple, efficient and rational setup, alignment and maintenance.



Lexicon *PCM70 Digital Effects Processor*

Introduced in October of 1985, the PCM70 is a high performance, low cost, six-voice, digital effects processor/reverb. Through the use of the Dynamic MIDI™, the engineer or

musician can program and automate real time parameter and program changes. The single rack unit features 30 effects programs and 13 reverb programs with more than 80 individual parameters. There are 50-user registers available for storage of user designed programs.



Mitsubishi *X-850 Digital Recorder*

The Mitsubishi X-850 32-channel digital audio tape recorder uses one-inch tape on a 14-inch reel at 30 ips. It features 45 tracks, including eight for the "RSC error correction codes" and redundant data. Two tracks are used for analog cue audio signals, one for SMPTE time code and two for auxiliary digital data signals. Razor blade splicing is standard and electronic editing is a simple matter of 32-channel digital punch-in with a second deck. Other standard features include a synchronization input port allowing the X-850 to operate with other audio, video and film machines.



Sony Pro Audio *PCM-1630 Digital Audio Processor*

The PCM-1630 is a refined version of the PCM-1610, and will replace that unit in Sony's digital product line-up. The processor uses newly developed analog and digital filtering techniques, resulting in a significant improvement in audio quality. Fully compatible with the PCM-1610 digital format, the PCM-1630 offers the same 16-bit linear quantization, a switchable sampling rate of 44.1 kHz or 44.056 kHz, direct digital to digital dubbing and precise electronic editing when used in conjunction with the DAE-1100. New features include peak level meters with peak hold mode and an optional digital I/O board, making the PCM-1630 compatible with AES/EBU standards.



Willi Studer AG *A820 Analog Recorder*

The A820 features the latest innovations in audio circuitry and micro-

processor control technology. A full-sized production deck with 14-inch reel capacity, the A820 is the first completely new design from Studer in this category in more than a decade. All A820 audio parameters are digitally set and stored, all transport functions are under micro-processor-governed servo control, and practically all operating features may be user-programmed and assigned to any top panel key. Center track time code and SMPTE/EBU bus make the A820 a viable choice for complex audio/video production systems.



Yamaha International, Corp.
REV7 Digital Reverberator

The REV7 provides natural, rich and flexible reverberation that can stimulate the acoustic properties of virtually any environment. The sophisti-

cated combination of hardware and software can create an unusually high range of sound enhancement effects, satisfying the demands of sound engineers, musicians, recording studios, broadcasters and film/video houses. Characteristics of the REV7 include up to 15 early reflections, 99.9 ms of initial delay and up to 9.9 seconds of subsequent reverberation. The unit offers 20 Hz to 12 kHz bandwidth, mixing of direct and reverb signals and three parametric equalizations. There are 30K ROM and 6K RAM, MIDI channels (1 to 16, OMNI) and program numbers (1 to 128).

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House Ear Institute



Dan Ling, Ph.D., coaxes implant patient Julie Tibbits to vocalize.

Loss of hearing is America's largest, yet least recognized, physical ailment. More people suffer from it than from heart disease, cancer, blindness, tuberculosis, multiple sclerosis, venereal disease and kidney disease combined.

Despite the magnitude of the problem, hearing studies attract less than one percent of the dollars spent on medical research.

The House Ear Institute has become a world center dedicated to clinically applied research and professional education in the diagnosis, prevention and treatment of ear disorders. Founded in 1946 by grateful patients of Dr. Howard P. House, the non-profit organization is supported entirely by private funds.

70

Located at Saint Vincent Medical Center in Los Angeles and affiliated with the USC School of Medicine since 1960, the institute communicates the results of research and trains other professionals in clinical application through courses, workshops, videotaped seminars, lectures and publications.

One of the institute's biggest projects is the development of the cochlear implant. The cochlea is the portion of the inner ear that contains the auditory nerve endings. The implant is the only hope for millions of people who suffer from sensorineural hearing impairment, still an untreatable inner ear condition that can sometimes lead to

deafness. After 20 years of research the implant has become a reality.

Developed by Dr. William F. House, president and chief executive officer of the institute, the electronic device can give the sensation of sound. The sound is transmitted through a tiny microphone directly to the hearing nerve, which carries it to the brain, where the signals are interpreted as sound.

The implant doesn't duplicate natural sound, yet. But it does allow the patient to detect environmental sounds and warning signals that, with training, may be understood. It also helps the patient learn speech sounds which aid lip reading.

In 1981, the House Ear Institute began a cochlear implant program for children. Parents can now bring their children to the Center for Deaf Children. Hearing aids can be fitted, while the staff provides rehabilitation therapy and assists parents in dealing with educational and emotional issues concerning their children's deafness.

One of the main purposes of the Center for Deaf Children is that of research. Projects include pre- and post-implant assessment, the development of a device to fit the specific needs of children, dissemination of the information to otologists, audiologists and teachers of the deaf and better assistance and materials for parents who



Rehabilitation audiologist, Laurie Eisenburg and clinical assistant Connie Wild, meet patient Ginny Black, and brother Charlie.

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need help in understanding and accepting their child's disability.

The institute is also involved in many other areas of research into hearing loss, including tinnitus, a ringing in the ear; the study of Meniere's Disease, an inner ear disorder that produces vertigo, hearing loss and tinnitus; the aging ear; otosclerosis; hearing loss in infants; and Mondini deformity, among other things.

More than 500 doctors from around the world

tour the institute each year, while doctors from the Otologic Medical Group, Inc., a group of ear specialists in private practice, donate time and money for research and education. This working partnership enables the institute to bridge the gap between basic research and patient application.

What's in the future for the House Ear Institute? Cochlear implant research is a top priority.



Speech therapist Karen Iler-Kirk introduces cochlear implant patient Ginny Black to the world of sound.

And additional research will increase the knowledge of how hearing happens, define what the implant patient hears and determine how engineering device changes affect perception.

Anyone wishing further information can contact Ms. Charlie Ennis, PR/marketing coordinator, House Ear Institute, 256 South Lake Street, Los Angeles, CA 90057; (213) 483-4431.

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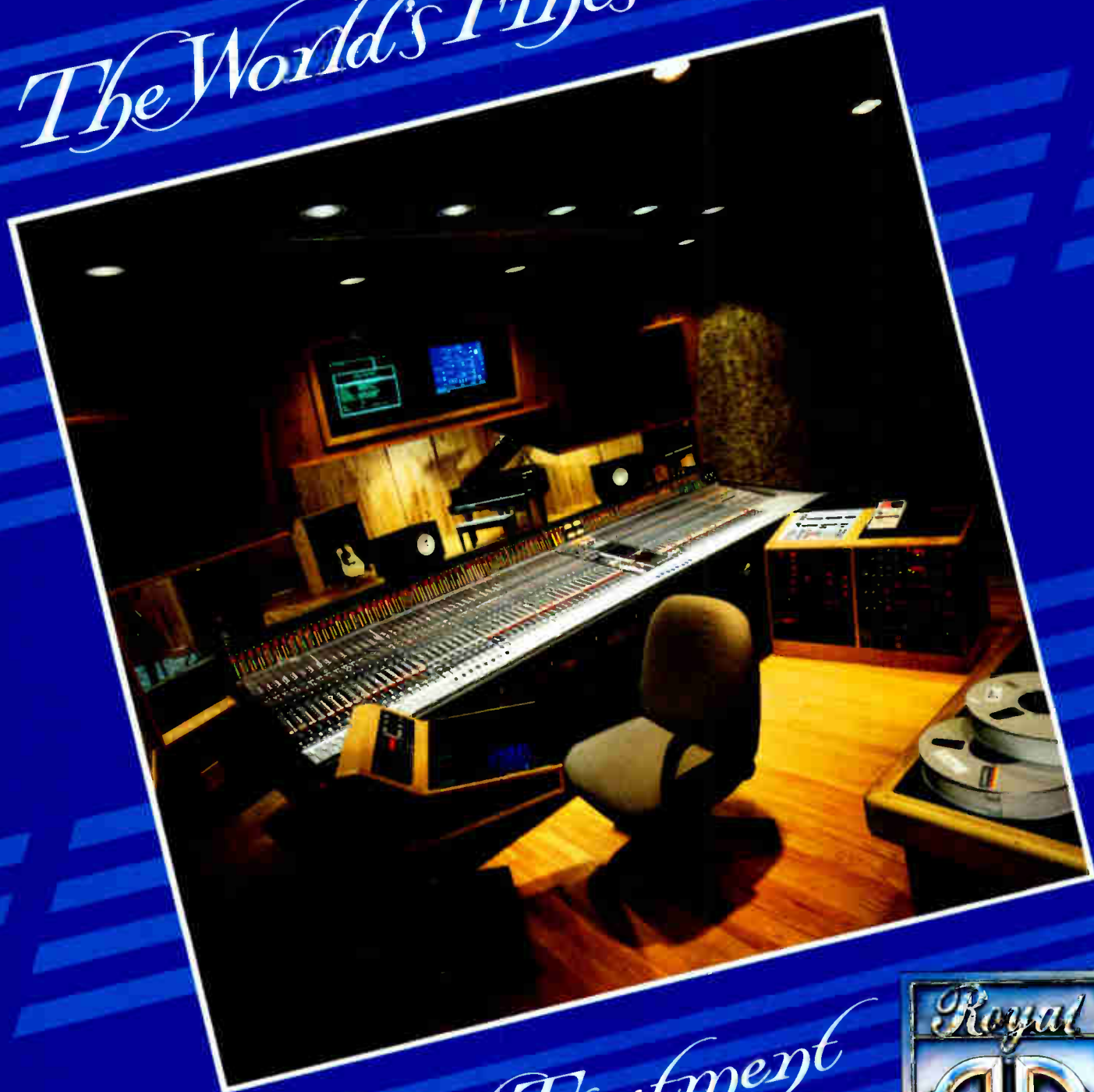
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AES Educational Foundation

The Audio Engineering Society Educational Foundation was born in October of 1980, when AES received a letter and a substantial donation from a society member who wished to remain anonymous. The donor believed that AES could perform a great service for the audio engineering field by assuring the continued entrance of young people into the profession through enacting a long-range plan with

money for scholarships and other activities.

With that initial donation, the foundation was established as an organization separate from the AES with its own board of directors.

As a first step in implementing the activities of the foundation a program of grants was approved and given to graduate students in the field of audio engineering begin-

ning in 1984. Four \$1,500 grants were awarded in 1984, two \$2,000 grants in 1985 and three \$3,000 grants have been awarded for 1986-1987.

Since the initial anonymous contribution in 1983, the foundation has received many donations, including \$5,250 from last year's TEC Awards.

The AES Educational Foundation is incorpo-

rated as a non-profit organization. All contributions are tax deductible.

Many of the strides made in the field of audio engineering over the past 40 years can be traced to various AES activities. It is hoped that the continued efforts of the AES Educational Foundation will help advance the progress of audio engineers for many years to come.

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