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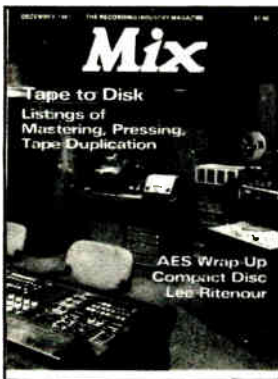
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# Mix



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1981 should prove to be an important year in the history of the recording industry. No longer just reeling from the shock of decreased record sales and a fragile economy, the leaders of the industry have met the challenge with diversification, specialization, innovation and a professional business approach.

It has been a year of sensational technical progress, not the least of which was the establishment of crucial standards for digital audio. The LP record, as we have known it for so many years, appeared this year to be heading toward retirement in the wake of the development of the digital audio disk (see our story on the Philips/Sony Compact Disc later in this issue.) Even the disk, in any form, has been challenged by the glass card audio storage device (more on that soon) now being developed by DRC/Soundstream, who has also made great strides in the techniques of audio editing for analog as well as digital.

Video has continued to make significant inroads into the marketplace, though still negotiating severe legal hurdles. RCA's introduction of the consumer videodisk, while certainly not fulfilling all expectations, at least broke ground for the entrance of more advanced systems into the mass market. Billboard Magazine's recent video confab demonstrated that good conceptual audio/video projects were being developed and that very likely the stars of tomorrow will spring from this new medium.

And though AES has chosen to sponsor only one convention a year in this country, there have been many new seminars and events to fill the need for exchanging information and just getting together. Most notably, the SPARS Roadshows have drawn from much experience to represent a professional approach to the business side of the industry, as well as to open a forum on the main topics of concern to studio owners.

All of these factors should occupy important positions in the recording industry of 1982. Now let's drink a toast to the economy. ■

# TRACKS

# CURRENT

## 3M Supports 48kHz Rate For Pro Digital Standard

3M has announced its support of the 48kHz sampling rate currently being proposed within technical audio, video and broadcast study groups.

According to Clark Duffey, market development manager for the digital equipment, 3M has been as anxious as anyone to see a professional digital signal standard achieved. 3M has tried to establish 50kHz, also adopted and used by Soundstream, and distributed technical information to promote signal compatibility among potential digital manufacturers over a year ago. 3M now believes, however, that 48kHz has sufficient acceptance by both user and technical study groups as a compromise to all the frequency rates being used or proposed. 3M hopes that by taking this position, the other manufacturers will also join in establishing 48kHz as the professional standard.

"One of our chief concerns has been the existing customers and users of 3M digital audio equipment," says Duffey. "They, like us, have made early commitments to digital and recorded numerous tapes at the original sampling rate. We obviously want to minimize inconvenience and expense to them.

"Fortunately, our equipment is designed so that a studio can selectively achieve 48kHz sampling rate merely by offsetting the tape speed to 43.2 ips via the machine's variable speed function. Existing tapes would simply be played back at the original speed.

"When 48kHz is adopted, a system modification will be developed as a future option," Duffey said. "It will make the rate switch-selectable between 48 and 50kHz, automatically correcting the tape time display for the rate selected and expressing tape speed variations in percentages."

## Studer Sponsors Tour

Members of the professional audio and broadcast press were treated to a rare glimpse behind the manufacturer's veil as Studer Revox hosted a five-plant tour of their Swiss and German manufacturing and operations facilities, October 7-14, 1981. The tour was designed by Studer officials to acquaint American representatives with the Studer style of production, a style characterized by ultra-precision workmanship, extreme quality control and industrial self sufficiency. Dr. Willi Studer, founder and owner of the 32-year-old firm, was on hand for several of the week's events.

Led by Bruno Hochstrasser, President of Studer's American operations, the procession extensively viewed manufacturing procedures for such well-known products as the A800 multitrack tape recorder, the A-80 VU 1/2-inch 2-track mastering recorder and the B710 cassette recorder, among others, as the tour encompassed Studer facilities in Regensdorf, Switzerland; Sackingen, Germany; Loffingen, Germany; and Bonndorf, Germany.

Other highlights of the event included a presentation on Studer's digital recording developments by Dr. Roger Lagadec, Product Manager Digital Audio, and a view of the prototype PCM recorder and sampling rate converter that Studer will soon be entering into the professional recording market. Also demonstrated was a revolution-

ary broadcast automation system employing fully computerized program inventory and broadcast preparation devices based on the Uniset cassette, which uses 1/4" tape at 3 3/4 ips.

The new **Fostex** line of tape recorders designed for musicians and songwriters, Models A2, A4 and A8 (two channel mastering, four channel multitrack and eight channel multitrack) will be shipped with a seven-inch reel of Scotch 227 1/4-inch audio recording tape, reports **Henry Ovadia**, OEM market development manager for **3M Magnetic Audio/Video Products Division**... **Solid State Logic** has taken residence in a new Eric Parry-designed headquarters building. For more information, contact **Bill Aitken**, SSL, Churchfields, Stonesfield, Oxford OX7 2PQ... **Ampex** is offering a free trip for two to the 24th Annual **Grammy Awards** telecast to be staged next February in Los Angeles. The contest is open to sound recording studio personnel and others actively engaged in the sound recording profession. Entry coupons will be in the November-December issue of the company's "Golden Reel Award Newsletter," or by contacting the nearest Ampex representative... The **L.A. Chapter of the Recording Academy (NARAS)** recently sponsored a Digital Synthesizer Forum

## SPARS Panel Discusses Time Code

As more and more recording projects involve numerous audio studios and film and TV facilities in the course of one production, it becomes more and more important for standard operating principles to be agreed upon. Preparing for these standards was the intent of the SPARS October luncheon in Los Angeles and of its panel of interlock experts: Ed Lever, Tom Kenyon, Rodney Pearson, Billy Youdelman and Steve Waldman.

Much of the panel's advice to attendents centered around their experience and stressed the basics: Time code is recorded best at saturation levels, as long as it does not interfere with the program material. It is a good idea to record an additional track with a pilot tone (60Hz, for example) so that if problems occur, the time code can be regenerated. Time code should not be bounced from track to track. Noise reduction should not be used on a time code track. Full-frame time code should be used unless the project demands otherwise.

The panel agreed that in-house projects are usually very simple. It's when tapes are going back and forth between studios that most problems arise.

The program was designed as an information-sharing session and preliminary plans were announced for more in-depth SPARS workshops to deal with educating audio studios in regards to time code.

## notes...

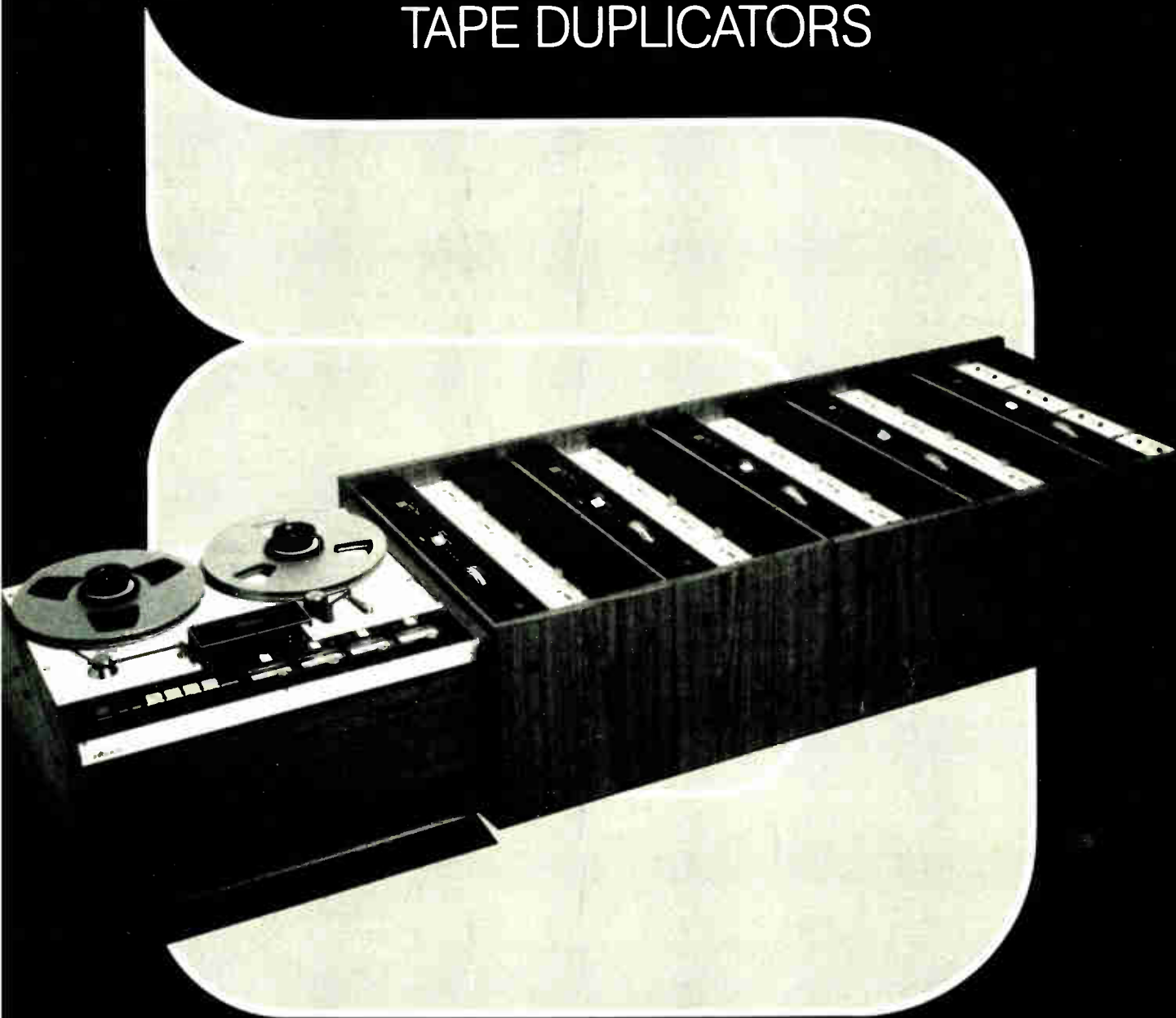
with hands-on demonstrations of units by such manufacturers as: **Passport**, **Con Brio**, **Synclavier**, **G.D.S.**, **Sequential Circuits**, **Fairlight**, **Casio**, **Yamaha**, **Roland Syntauri**, **Oberheim**, **Griffin Research** and **PPG**... **King Instrument** has announced the appointment of **W. O. "Bill" Keller** to the new position of vice president, operations, according to **William H. Anderson**, company president... The appointment of **Tsuneo Taida** to the office of treasurer for **Sony Corporation of America** has been announced by **Robert E. Dillon**, senior vice president... **Ed Martin** has been named Credit Manager at **James B. Lansing Sound, Inc.**, it was announced by **Steve Shelton**, Vice President of Finance for the firm...

## Correction

In our September (Vol. 5, No. 9) listings of Southern California recording studios, we inadvertently placed Twilight Recording Studio in North Hollywood rather than Laguna Hills, CA, its true residence.

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# SESSIONS

## NORTHEAST

**Audio Innovators**, of Pittsburgh, PA, in cooperation with WQED-FM of Pittsburgh and the Canadian Broadcasting Corporation, has just produced a one hour radio drama for National Public Radio entitled "Corpus Duende: Echoes of the Spanish Civil War, 1931-81." **Bill Howell** of the CBC was the producer/director with CBS engineer **John Jessop** and Audio Innovators engineers **John Brandy** and **Jim Abraham** at the board.

Recent activity at **Kingdom Sound**, Syosset, Long Island includes: **Glen Kolotkin** producing a new **B.T. Express** LP for Coast to Coast Records. **Ray Ovetsky** of R.L.O. Sound and Stage Concepts managing and producing new tracks for **Preview**, **Clay Hutchinson** engineering with an assist from **Paul Mandl**.

Recent digital activity at **Sound Ideas Studios** in New York finds jazz producer **Kiyoshi Itoh** booked for his 3rd 32 track digital production. Having recently completed bassist **Yoshio "Chin" Suzuki's** album for Trio Records, Kiyoshi returns with Trumpeter **Terumasa Hino** for his second digital album.

At **Spectrum Recorders**, Lanesborough, MA, **The Units** of Albany, N.Y., have just completed the second half of their soon to be released album. **Mass Communication** has just completed a three screen multi-media presentation. Other recently completed work includes three new tunes by **Ed Gyurasz** and a jingle for the Beba-Brotherhood clothing chain. All engineering by **Peter Seplov**.

At **Emmaus Sound**, Point Pleasant, N.J., work was just completed on two shows for PBS, **Macbeth** and **Richard II**. The project is being produced by Century Video Productions, Beverly Hills, CA. Music was written and arranged by **Gerard B. Cohen**. Engineering the project was **Joe Saint**.

At **Sound Wave Studios** in New York City, New World Records **Liz Ostrow** editing **Greg Fulker's** new album with engineer **Don Van Gorden**. Mustard Records producer **Paul Martotta** completed mastering on two 45's and one disco project.

At **Kajem Recording Studios** in Gladwyne, PA, recording commences on CBS's Portrait Label Artist, multi-instrumentalist/singer/songwriter **George Wallace**. Wallace starts his second album featuring **Jimmy Bralower** on drums. **Joe**

**Alexander** engineering, **Dave Conner** assisting. **The Workshope Recording Studios**, Douglaston, N.Y., is currently recording **The Capris** for CBS Records. Producer **Marty Pekar** has engineers **Rob Bengston** and **Kevin Kelly** researching original 50's recording techniques. Mr. Pekar and CBS have agreed to release 11 other "50's style" albums internationally this year, on a new associated label called "Ambient Sound." All are scheduled to be recorded at The Workshope.

## NORTH CENTRAL

At **Tantus Studio**, Detroit, MI, **Gino Washington** is back and working on his new single "Love Bandit." Also recorded and arranged at Tantus, **Cliff McClain's** new release "I Can't Fight It," now being played in the Windsor area. Both singles have been engineered by **David Schreiner**.

At **Studio A**, Dearborn Heights, MI, **Alliance**, newly signed to Handshake Records and Bernstein and Associates for management, recording new material in preparation for their debut album for the label. **The American Gems** laying down tracks for an upcoming single, **Bob Deladurantaye** producing. **Eric Morgeson** at the board for both projects.

**Ajax Recording Team**, in Fort Wayne, IN, has just completed **Fred Rother's** second self-produced album, **Time to Go**, on Owl Records. Also at Ajax, a demo tape for songwriter **Rick Curtis**. (Curtis penned "Blue Letter" for the **Fleetwood Mac Rumours** album.) **Craig Harding** recording and mixing.

Recent recording activity at **Solid Sound, Inc.** in Ann Arbor, MI, includes **Curtis Hyflash** doing a demo with producer **John Pace**; **Give Away** laying down tracks for their demo. **Larry Santos** has finished a single, and country artist **Marsha Dee** has just finished her new single. All sessions were engineered by **Will Spencer** and **Rob Martens**.

Recent sessions at **Chicago Recording** in Chicago, IL, include **Kitty & the Heywoods** working on an upcoming project, produced by veteran producer and songwriter **Gene "Daddy G" Barge**. Engineer was **Hank Neuberger**. R&B group **Amusement Park** recorded their debut LP for the Our Gang label at CRC. Producer was **Dunn Pearson**; engineer, **Phil Bonanno**; and assistant producer, **Michael Szarzynski**.

## SOUTHEAST

From Pompano Beach, FL, recent activity for the **Artisan Recorders' Mobile Unit** included mixing a live broadcast of **Peter Frampton** on the Agora Ballroom in Hallandale, FL, and mixing a live broadcast of **Al Jarreau** from the Sunrise Musical Theatre in Ft. Lauderdale, FL.

Studio activity at **Music City Music Hall** in Nashville, TN, includes: **Loretta Lynn** cutting a new LP for MCA with veteran producer **Owen Bradley**. **Bill Vandevort** engineer. **Eddy Arnold** recording next single for RCA with producer **Norro Wilson** and engineer **Bill Harris**.

Rhythm and blues vocalist **Willie Covington** has signed a production agreement with **Cotton Row Recording**, Memphis, TN, according to **Ward Archer, Jr.**, studio owner. Material for the album is being co-written by Covington and Cotton Row's producer **Nicos Lyras**. Six tracks have been cut and overdubs are scheduled to be completed in November.

At **Sound Emporium Studios** in Nashville, TN, soul singer **Al Green**, who turned to gospel music some time ago, was in to record his third album for Word Records. The project, a collection of traditional and contemporary gospel classics in a modern setting, was produced by **Tony Brown** and executive producer **Ken Harding**. **Billy Sherrill** engineered the sessions in Sound Emporium's Studio A.

Recent sessions at Atlanta, GA's, **Master Sound Recording Studios**: New albums by gospel greats **The Florida Boys** and the **Rex Nelon Singers** for the Word Record Group. **Bette LaVette** mix for Motown with **Steve Buckingham** producing and **Joe Neil** engineering.

## NORTHWEST

At **Harbor Sound Recording** in Sausalito, CA, **Pete Sears**, of **The Jefferson Starship**, with guest artists such as **Steve Price** (Pablo Cruise), **Randy Jackson**, (Narada M. Walden), and **Norton Buffalo**, have joined hands on a new self-produced demo with **Nancy Evans**, **Paul Stubblebine** and **Dana Chappelle** engineering.

**Corasound** in San Rafael, CA, recently completed projects with **Bud Cockrell**, a "Live Jazz in S.F." series for French Nat'l. Radio and nearly complete, three singles for **Riverboat Records**.

Recent activity at **Different Fur** in San Francisco, includes, the **Sir Douglas Quintet** cutting an album for release in Europe by **Sonet Records**. Engineers on the project included **Stacy Baird** and **Roger Harris** assisted by **Howard Johnston**.

Action at **The Automatt** in San Francisco, CA, **Bobby McFerrin** is recording tracks for Elektra





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Asylum in Studio B with Linda Goldstein producing, Ken Kessie and Leslie Ann Jones engineering and Maureen Droney assisting.

At The Winery in Maui, HI, guitarist Bob Bangerter of Street Talk has been recording his newest tune with Tim Carroll producing. Violinist Steven Kindler has been laying down some tasty licks on both violin and guitar with some of his friends. Steve has toured with John McLaughlin and the Mahavishnu Orchestra, Jeff Beck, and Jan Hammer.

At Sound Smith Studios in Portland, OR, Pat O'Hearn, bassist for Frank Zappa band, is in for pre-production on album. Mark Isham (horns and keyboard arrangements on Pink Floyd's "The Wall") will co-produce with Terry Layne.

Projects in progress at The Nova Music Group in Seattle, WA, Daryl and Renee Redeker continue work on their fifth album. Rhythm tracks completed—now into vocals. Tall Timber, one of the Northwest's finest bluegrass and traditional bands, begins their latest album for Voyager Records. Vivian Williams, three-time national champion fiddler, is one of the group's featured members.

### SOTHERN CALIFORNIA

At The Sound Chamber in Pasadena, CA, songwriter Neil Gader has recently completed three more cuts for his upcoming album with session guitarist Eddie Arkin handling the arranging and production duties. Morris Albert of "Feelings" fame is presently laying tracks for his new project with Randy Farrar and Dick McIlvery

sharing engineering chores for both projects.

At Eldorado Studio, Los Angeles, producer Steve Verrocka cutting tracks for "Private Army,"; Tony Cahil producing L.A.'s "Little Itch" for Arista Records; Dave Jerden engineering both projects, Sarco assisting.

At Studio Sound Recorders in North Hollywood, CA, Lani Hall has been in doing pre-production on her next album for A&M Records. George Tobin is producing. Brian Holland and Harold Beatty are producing Sterling Harrison for Inviducts Records. Howard Lee Wolen is behind the board.

At Golden Age Recorders in Culver City, CA, Jae Jarrett is producing Stacye Branche's debut album for PPL Records. Engineering for this project is being done by Tom Herzer and Carl Lange.

## Studio News

Studio G Recording, Clayton, MO, proudly announces the addition of Gordon Rauss to its engineering staff. Now in its second year, Studio G is a full-service advertising, A/V, and film sound facility featuring an MCI JH-110B 8-track, Neotek Series II console, and 6-track 16mm film mixing. A new transfer/assembly room has also been added.

The Second Annual WOSU Broadcast Engineering Conference will be held at The Faw-

cett Center for Tomorrow, Ohio State University, Columbus, Ohio for three days, commencing July 21 and running through July 23, 1982. Papers are invited and full details can be obtained from John H. Battison, Director of Engineering, WOSU-AM-FM-TV, 2400 Olentangy River Road, Columbus, Ohio 43210.

Unique Recording in New York City, announces the addition of 24 channels of Dolby A in the Gotham TTM frame to complement their Otari MTR-90, and Dolby 361's for their ATR-100. Also new in the outboard racks: a Lexicon 224, Ursa Major Space Station, Cooper Time Tube, Marshall Time Modulator, and a pair of UREI LA-4A's.

At Kewall Recording Studio & Records in Bay Shore, N.Y., Keith Gutschwager, studio owner, is proud to announce that the studio will be upgrading its 4-track facility to 8-track by the end of the year. The new 8-track recorder will be the brand new model Otari 5050 Mark III/8. The mixing board will be a Tapco 24 in x 8 out. New effects will also be added to the studio, as well as a complete new line of mikes. Studio manager Walter Gutschwager adds, that the studio will also have in house producers, musicians, writers & arrangers for their clients if needed.

Spencer Proffer, president of The Pasha Music Organisation, has named Nadya Bell as studio manager for Pasha Music House in Hollywood, CA. Most recently, Ms. Bell served as traffic manager for the Wally Heider Studios, and prior to that she was the studio manager for the El Dorado Studio for over three years.



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# STUDIOSCOPE

## KEEPING INFORMED

by Dennis Buss and Chris Haseleu

In any industry, what sets the true professionals apart from the pack is the command of current information. If the decision makers keep abreast of current developments in techniques, policies and practices, their operation will always keep one step ahead of the competition. This is particularly true in the recording studio area, due to the fast paced, always changing, music business environment.

To assist the studio owner in finding the needed information, we have selected some textbooks that could be of interest. We are going to cover two separate subject matters: Technical Recording texts and Business/Management oriented books. The latter subject area will be reviewed this month, and the technical books will be covered next month.

Of late, studio owners have diversified their services into many new areas: video, recording classes, commercial work, publishing, production, etc. Accordingly, the books listed below reflect the diversity of types of information the progressive studio owner needs.

**This Business of Music**, by Sidney Shemel and M. William Krasilovsky, Billboard Publications, Inc., Fourth Edition (\$18.50). This well-respected work includes 38 chapters and is almost 600 pages in length. The volume is broken down into three separate parts:

Part 1 — "Recording Companies and Artists" — explains the intricacies of artist contracts, foreign record deals, independent producers, record clubs, cover and liner notes, labor agreements, agents and managers, permits for foreign artists, counterfeiting and pirating, payola, video player systems, and copyright aspects of sound recording.

Part 2 — "Music Publishers and Writers" — covers the new Copyright

Act, performing and mechanical rights problems, songwriter contracts, foreign publishing, arrangements and abridgements, joint administration of copyrights, infringement, show music, jingles, music and movies, loans to publishers, and demos.

Part 3 — "General Music Industry Aspects" — explains names and trademarks, protection of ideas and titles, privacy and publicity rights, contracts with minors, and taxation in the music business.

The book's appendix includes almost 200 additional pages of sample contract forms, laws and regulations, licenses, and other up-to-date examples. It is written for the serious professional and is available at most full-service bookstores.

**Music Business Handbook and Career Guide**, by David Baskerville, Ph.D., The Sherwood Company, Third Edition (\$16.95). Stan Cornyn, Senior Vice-President of WCI Record Group, states in the forward to the book: "In contrast to other businesses, some of whom have been in operation for hundreds of years, the record industry as recently as 30 years ago was by and large a back-room affair." Baskerville's book includes the information that is making the industry more professional.

Part one discusses the current state of the music business. Songwriting, publishing and the new Copyright Law are covered in part two. The studio owner is constantly involved with agents, managers, and music business attorneys. The roles and functions of these individuals are covered in part three, along with concert promotion and music merchandising. Part four's scope is geared toward record production topics: the size of the recording industry, record research methods, artists' contracts, production techniques,

studio operations/engineering, and wired music services. Music in radio broadcasting, TV, and film are discussed in part five. The last part (six) covers career planning and development within the music business.

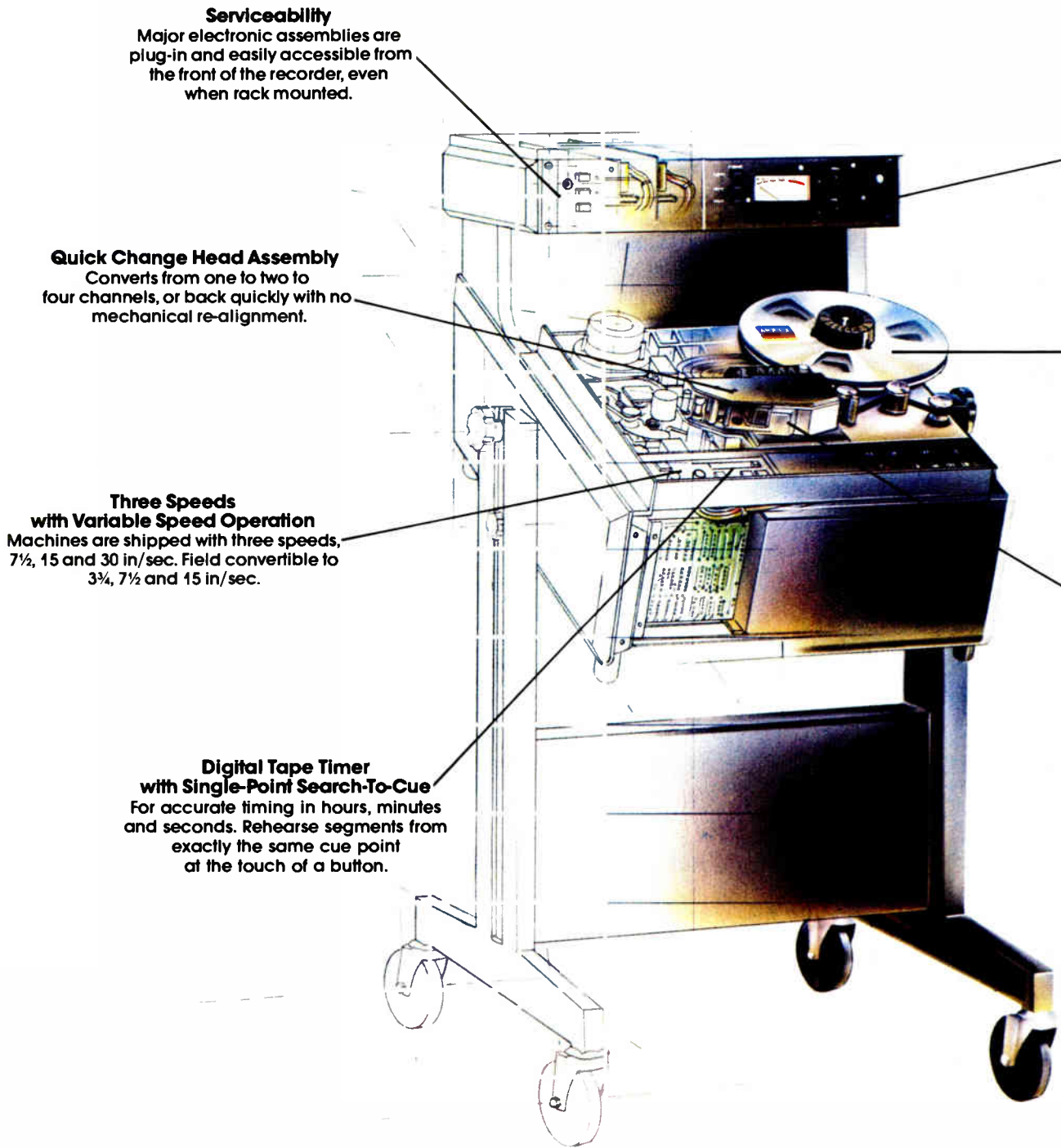
This text is written in more general terms that **This Business of Music**, but it also covers a broader list of topics. It could be very helpful to any studio owner wishing to have a good resource book on diverse subjects and is available at most full-service bookstores.

**How to Make And Sell Your Own Records**, by Diane Sward Rapaport, The Headlands Press, Inc., 1979 Edition (\$9.95). As the name suggests, this text involves a "do-it-yourself" approach to the music business. Emphasis is placed on two areas — Recording and Marketing. Types of recording equipment are covered as well as recording techniques. The marketing section will not make anyone into an advertising wiz; however, the basic tools of the trade are covered. One particularly helpful section deals with planning — time, business and financial.

**Succeeding In The Big World of Music**, by Jean Young and Jim Young, Little Brown and Company (\$6.95). This 300-page paperback covers the music business from a little different angle: It discusses the elements of various recording industry occupations. Examples: Producers, studio engineers, personal managers, A&R, session musicians, the publisher, etc. This book is useful in gaining an overall feel for the different jobs available in the music industry.

We have tried to cover a few of the popular informative texts available. As the recording industry grows, so does the need for more information. Next month's Studio Scope issue will discuss books of a more technical nature. ■

# BROADCAST



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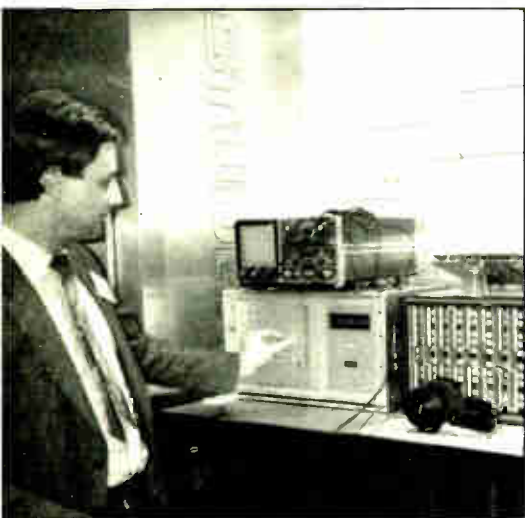
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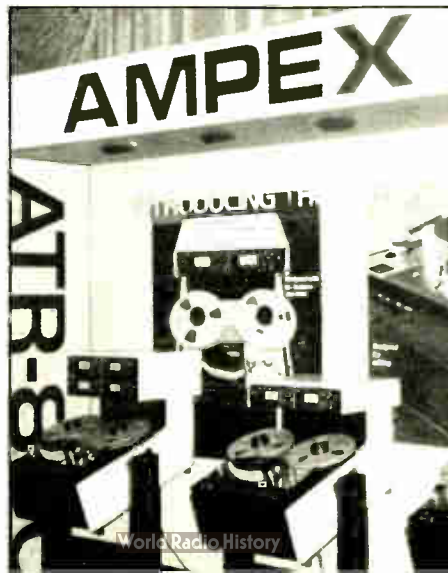
Head assembly is wide open for unequaled accessibility. Optional tape cutter and marker available. Dump edit and hands-on-reel editing modes included.

# That Was the AES That



## 70th AES Convention in New York, Oct. 30 - Nov. 2

(Counterclockwise) Rick Plushner demonstrates Sony's Compact Disc, disc player and 24 track digital recorder. Werner Schuler unveils Studer's digital sampling frequency converter for digital audio. Tape recorders introduced at the show included the Allen and Heath Syncon M 24 track, Ampex's ATR 800 series and the Soundcraft SCM382 24 track. Tommy Peterson shows the new remote control for Ursa Major's 8 x 32 digital reverb and Keith Worsley previews the Lexicon Super Prime Time as well as an updated 224-X reverb system.



# Was

by Larry Jaffe

Photos by David Schwartz

70 Audio Engineering Society Technical Meetings and Professional Exhibits have gone by. This reporter has participated in but one-sixth of them. The latest concluded November 2, 1981. It was an occasion fraught with anxiety and excitement. It was New York, and the AES will not be back in New York for two years—not until 1983, but not because people don't like New York. It's because what was once a bi-annual event has mysteriously (to the delight of the larger exhibitors) become an annual one. There was anxiety in New York not because of Koch's (the Mayor) politics, but because this was going to be it for U.S. AES shows for an entire year; and excitement because "we'd better make it a good one!" The big guns were out and lined up, new products hastily prototyped, sales forces briefed and engineers prepared to deliver newly scrawled papers.

And that's not to demean any of them. Our industry responds to the pressures put upon it; weathering storms of economic distress and technical advances and obsolescences. Matter of fact, whatever the post office is supposed to do we do it better... harnessing the technology and adapting it to our needs. We've taken recording and sound reinforcement from crude art to an elaborate science. And it all has happened and was perhaps made possible by the AES.

Demonstrating our versatility, this 70th AES show saw an increase in technical papers presented, by some 30%, to 74. Attendance was about the same as last year 6,645 (not counting an exhibitor attendance of about 2,000). But to all eyes the attendance appeared purer and of more quality. The normal proliferation wave of students never seemed to appear. And despite the non-commercial stance of the show—pro audio dealers, manufacturers and engineers seemed to walk away happy.

But was the Audio Engineering Society itself happy? It was a satisfying show, that's for sure. But the one-show concept might be problematical for the AES. Certainly the AES is there to serve its membership but, like all semi-beaucracies, the AES' has to be funded and that does not happen from just

memberships alone. Trade shows bringin big bucks. The U.S. shows are a major source of income for the AES. By eliminating an entire show, the reduction in gross income could be substantial. How the AES will survive in the single show experiment is up for grabs. And will the May sojourn be missed by the membership as well? This remains to be seen.

New York was deemed a success, by attendee and exhibitor. The technical sessions and workshops were well trafficked and there even appeared to be a breakthrough in digital standards. New products proliferated the arena with some destined to be the talk of the show. And despite it being the "only one", AES New York was like all other AES shows. Harry's bar was packed to it leopard skin/jungle motif right after closing each night and sometimes a little before. There was the usual round of parties when business was completed for the day. One of the dealers even had a boat ride around Manhattan.

It was an interesting show. In past years manufacturers, especially console makers, came to the AES armed to the teeth. Their latest technical advances were somehow packed together into multi-input/output boards. This year, as a reflection of the technical strides that will be accomplished, I saw many a manufacturer and engineer huddled over blueprints of proposed technology. The AES is becoming such a show of the future—forget about prototypes, let's take a look at next year's designs. We'll never have to worry about planned obsolescence that way.

But new products and new product talk did run rampant through the halls of the Waldorf, as usual. Did you see Sound Workshop's new Disk Mix that promised to automate automation? It worked with MCI, Allison and Sound Workshop automation systems. Lexicon unveiled its new Super Prime Time, that offers a programmable digital delay with 40 storage registers. And speaking of delay delay delay... Ursa Major showed off their Digital Reverb/Delay also fully equipped with programmability. dbx displayed their new 160X Compressor/Limiter, (Which I must admit made me feel good as it was one of the babies I had left unhatched upon my departure from Newton, MA to the Big Apple). According to the AES, Hazelcom's Clavier has been drawing many phone calls. UREI's demo room was fully equipped with CX decoder/encoder and, of course, their 813's. They took the time to recreate an LEDE type room for the demo. JBL, not to be outdone on the studio monitor side, has two new monster Bi-radial Studio Monitors. They sounded great but the demo was not as strong as it could have been had the room been more suited to such a dynamic sounding loudspeaker.

Beyer introduced a wireless microphone, Sansui presented four papers on everything from turntable ripple error to AM Stereo decoding. JVC showed a crude early model of their digital cassette deck. Sony had their Compact Disc, of course, plus an editing system and digital reverb, and Ampex showed their new ATR 800. One of the most exciting pieces of machinery was over at the Studer booth, where a new device held court—the Studer Digital Sampling Corrector, which promised to interface systems with different sampling rates.

And speaking of digital, there was an engineering concensus of opinion regarding sampling frequencies for professional equipment. In an all day session, 48 kHz and 44.1 kHz were chosen and recommended by the 60 members attending. The next step is for chairman Bart Locanthi to appoint a writing group to put together a draft proposal for the sampling frequencies. 48 kHz is somewhat of a compromise from the 50 kHz that is being used. The higher rate allows for a wider audio bandwidth. However, 48 kHz has the support of the broadcast industry and now it seems the recording industry as well, at least for now. 44.1 is the sampling rate for the Phillips-Sony Compact Disc expected to be introduced sometime in late 1982 (see feature article later in this issue.) Another writing group will be formed to recommend the input/output interfacing for digital equipment. Of course, this is all voluntary as no standards have been set as of yet. But it looks like its getting closer.

The AES Board of Governors met and decided upon a future show schedule. March 1982 will be in Montreal, Los Angeles October 23-26, Holland in March of 83 and back in New York for the fall of '83. According to strong and somewhat reliable rumours the L.A. AES show will take place at the Disneyland Convention Complex in Anaheim. No contracts have been actually signed as of this date. This is a far more superior facility than the L.A. Hilton (Who ever said our industry was a Mickey Mouse operation will now have a chance to meet him.)

It was also decided that there would be one or more regional shows with restricted exhibitors. These regional shows would be topical and/or technical with the only exhibits allowed pertaining to the relevant topics at hand. The first such show is planned for late May or early June on Digital Recording and it just might take place in Boston.

That's it on the 70th AES! According to Show Coordinator Pam Davis "the last piece of freight went out at 1:00 today (November 6, 1981)" from the 156 booths and 90 demo rooms. ■

# PROGRESSIONS

## New

### AUDIO·VIDEO·COMPUTER

# Applications

by Larry Blakely

On a recent visit to a major manufacturer, I was astounded by a demonstration of the lifestyle we seem to be approaching. It seems that a number of very large corporations are investigating the viability of maxi-purpose home computer terminals for the consumer. The idea is that ultimately the computer will be as common a household appliance as the television or telephone.

The device in the home employs a video or TV screen with audio (typical TV quality). The TV screen has a transparent touch sensitive mask over it to give the user the ability to utilize the screen as a sort of computer terminal keyboard. These systems are simple to operate and will most likely cost the consumer a small monthly fee.

Here is an illustration of what the average consumer can look forward to in the not-too-distant future: Jill America comes home from work, takes off her coat and retires to the living room. She walks to the home computer terminal and turns it "on." On the screen appears a menu such as this:

- \* News
- \* Weather
- \* Sports
- \* Stock Market
- \* Banking
- \* Home Accounting and Budgeting
- \* Shopping
- \* Travel
- \* Entertainment

\* Etc., Etc.

Jill says, "Lets see what the news is." She simply touches the dot or box which is shown on the screen to the left of "News" and a new menu comes up:

- \* World news
- \* Regional news
- \* Local news
- \* Main Menu

Now if she touches the dot or box on the screen which is to the left of "World News," she is connected via computer and maybe satellite to a video presentation of the major world news for that day. When the world news presentation is completed, the menu re-appears and she may select either regional or local news, or she may select the main menu to do something else.

Let's say that she selected "Banking." She can now look at her bank balance, dates and amounts of deposits and the checks that have been written recently. She has \$6,000.00 in the bank and has some vacation time coming, so she decides to investigate taking a vacation.

She touches the screen in the appropriate place and the main menu appears. Then she selects "Travel." A new menu comes up:

- \* Tours (International)
- \* Tours (United States)
- \* Airlines
- \* Bus
- \* Train
- \* Rental Car
- \* Etc.

Tours (United States) is selected

and yet another menu appears:

- \* Alaska
- \* Alabama
- \* Colorado
- \* New York
- \* Ski
- \* Scuba Diving
- \* Etc.

She selects "Alaska" and a video presentation (several minutes long) starts playing with narration, music and beautiful pictures of Alaska. This presentation would probably be prepared by the travel department of the state of Alaska and inserted in the consumer computer system, as would most likely be the case with the others that are listed.

At the end of the presentation Jill is informed of the cost of the tour. If she desires to purchase the package, she indicates so by touching the screen in the appropriate box. Now, this system is also connected to the computer at the bank. The cost of the Alaska tour is automatically removed from her checking account and deposited into the bank account of the tour travel company. If Jill were to go back to the main menu and select "Banking," she would see it indicated that money was transferred to the travel company (by name). The check number, the date, the amount and the new balance of her checking account would also have been computed and available for display at her command.

Well, everything is looking good, and she remembers that she needs a new camera; so she returns to the main



menu and selects "Shopping" and a new menu comes up:

- Personal articles
- Appliances
- Phonograph records
- Cameras
- Groceries
- Etc.

She selects "Cameras" and yet another menu comes up with the names of the various camera manufacturers and also their types of cameras. She selects the manufacturer and the type of camera that is desired and an audio/video sales presentation is played for this consumer. If she desires to purchase the camera, she indicates so on the appropriate place on the screen, the money is drawn from her account and transferred to the account and order desk of the local camera dealer who ships her the camera. All such sales would probably have a trial period with some sort of a money-back guarantee.

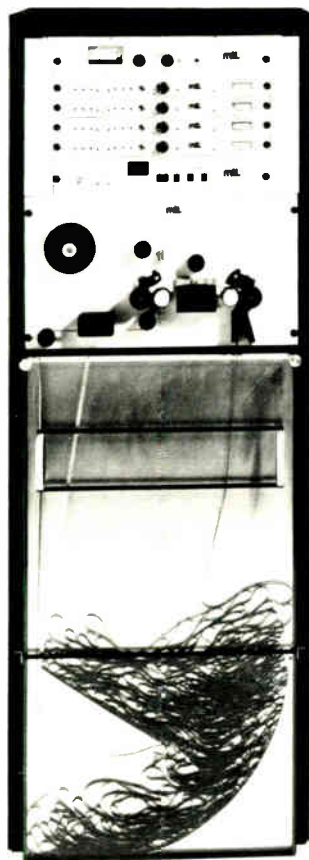
I think you can see by now the vast possibilities of such a consumer information and acquisition system. There will be a tremendous amount of information at your fingertips. For instance, you will have access to information on the Beach Boys' world concert tour and be able to purchase tickets for any performance that is available on the tour, complete with seating diagrams of the actual theaters or halls in which they will be performing. The system will give you the prices of all the seats and let you purchase the tickets instantly without ever leaving your home. You will be able to keep up with the stock market, buy and sell right from your living room armchair. All of your banking functions will be done automatically as you purchase. In addition, as each expenditure is made it will be entered in the Home Accounting and Budgeting ledgers. Easy and automatic!

With the increased costs of fuel and transportation, consumers will be able to do much of the shopping without ever leaving home. In addition, they will have far better sales information than they could obtain from a typical dealer salesperson.

When systems such as this are commercially available, you can bet that manufacturers of consumer products will be running madly to have audio/video presentations made for their products to be inserted into this monster shopping and purchasing system. The commercial possibilities for a system of this type will be tremendous, as very likely will be the demand for quality audio/video programming.

Well, anyway, it's a little food for thought, and maybe some of you enterprising recordists will do well with these new opportunities for recording services. ■

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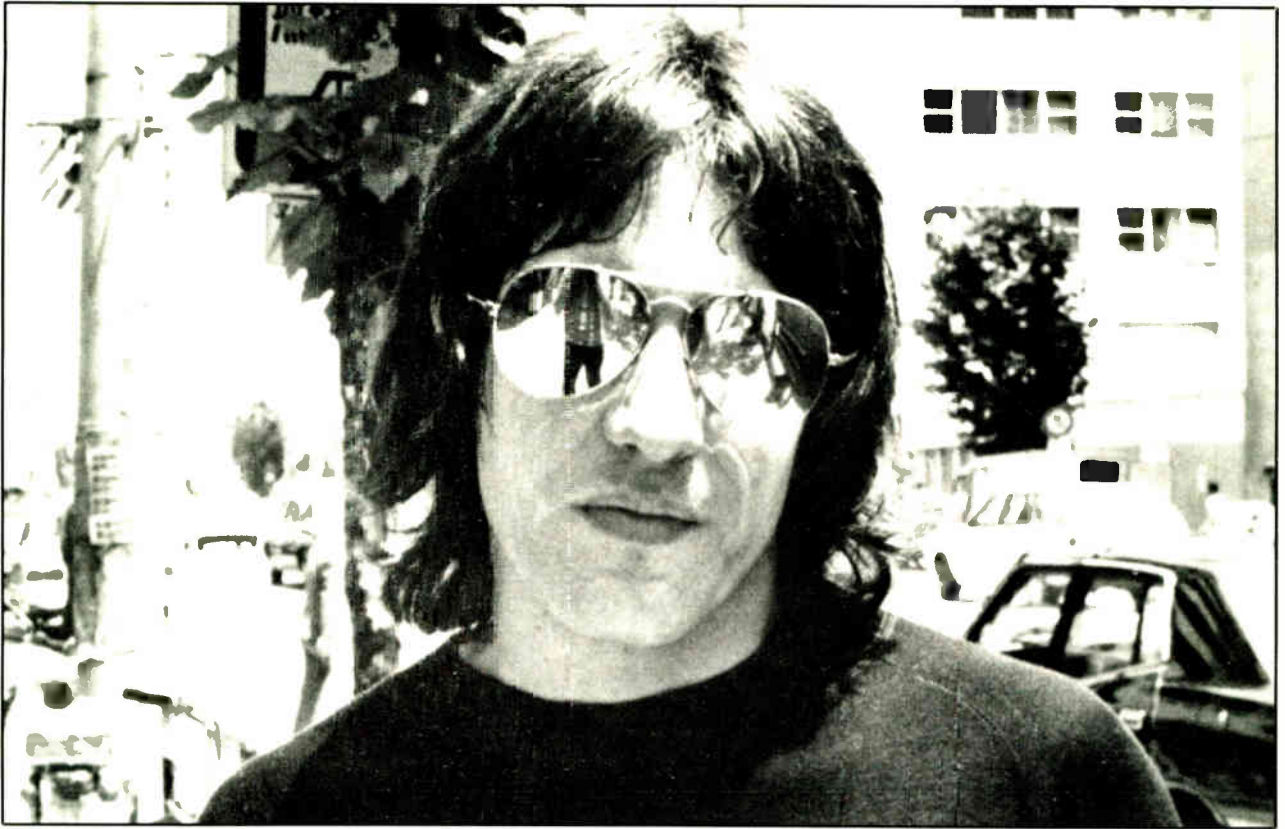


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# PRODUCERS DESK



## JOHN HUG

by James Riordan

Increasingly, record producers are emerging from the ranks of studio musicians. Such an evolution seems totally natural, considering the production skills top-flight studio musicians must master to rise to the peak of their trade. Guitarist John Hug exemplifies this new breed, having played on albums by such artists as Waylon Jennings, Gregg Allman, Anne Murray, Maria Muldaur, and Jermaine Jackson.

Hug got his start as a producer while playing on sessions for Jim Ed Norman. As John recounts it, Norman "was getting so busy that sometimes he'd just tell me to go in on my own and do the guitar parts" because he couldn't make it into the studio. When Norman was asked to produce an album for Commander Cody, with whom he had

worked previously, he felt that he couldn't fit it into his schedule and asked Hug to produce it. "I told him no because I considered myself a guitar player and not a producer, but a half hour later I called him back and decided I'd do it. It turned out I had an incredible time, the best I'd ever had on a record. My whole life changed after this, because I found out that producing was exactly what I should be doing."

Shortly thereafter, Hug was contacted by singer/songwriter Jesse Barish, who had written several Jefferson Starship hits and Marty Balin's recent "Hearts." After recording a couple of tunes with Barish, John was asked to do an album, but with the condition that he'd have to work with Balin on it. They worked well together on Barish's LP, and then decided to continue co-working on Balin's own album.

*Balin* [EMI-America] turned out

to be a major success, with "Hearts" becoming one of the biggest selling romantic songs of 1981. "Hearts" was the first song we did," Hug recalls. "It was the third take and we used the live vocal. Marty likes to sound live, with not too much extra stuff. We did the vocal at Studio D at the Village Recorder because it has this enormous isolation booth for singing which can give a great live feel."

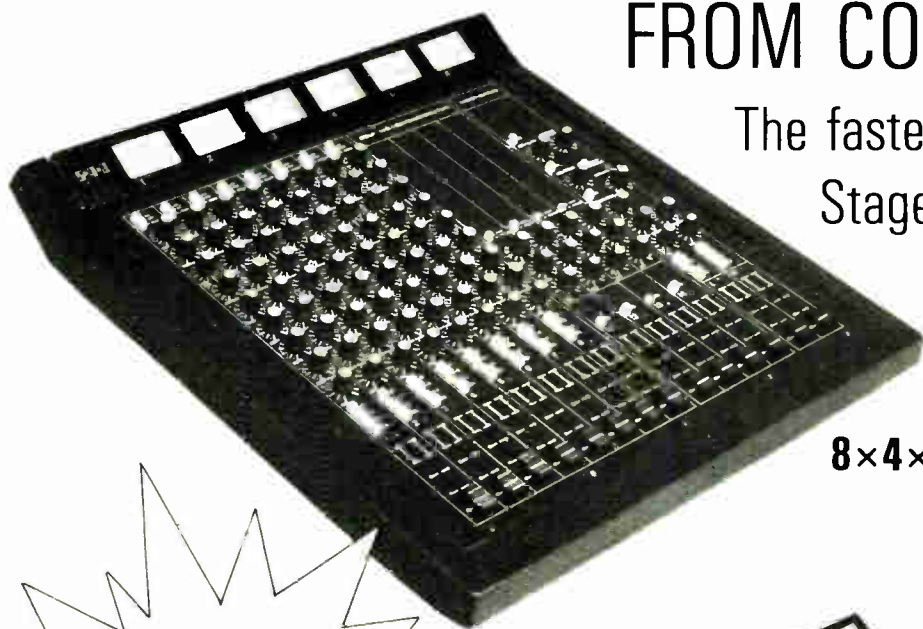
Hug is currently producing Lauren Wood, a singer whose work he has always liked. In addition to admiring Wood's talents, John says that the two really hit it off together, and this relates to one of his important criteria for working with an artist. "I like to produce people that I can work *with*, rather than brand like on the Ponderosa with a big "P" for producing. My favorite situation is where the artist and the producer are really stimulating each other. I usually have too many ideas, and I would rather let them out just as they are needed—like when an artist is at a loss or not feeling his best."

Although some producers have a formula which they apply to every project, Hug approaches each artist dif-

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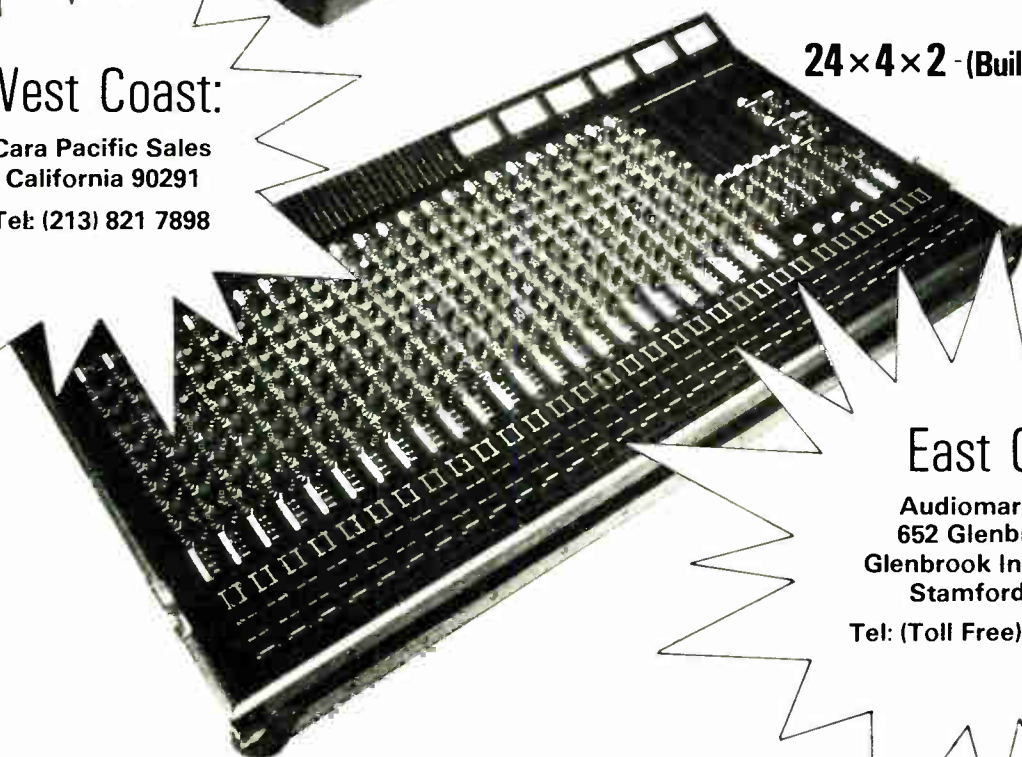
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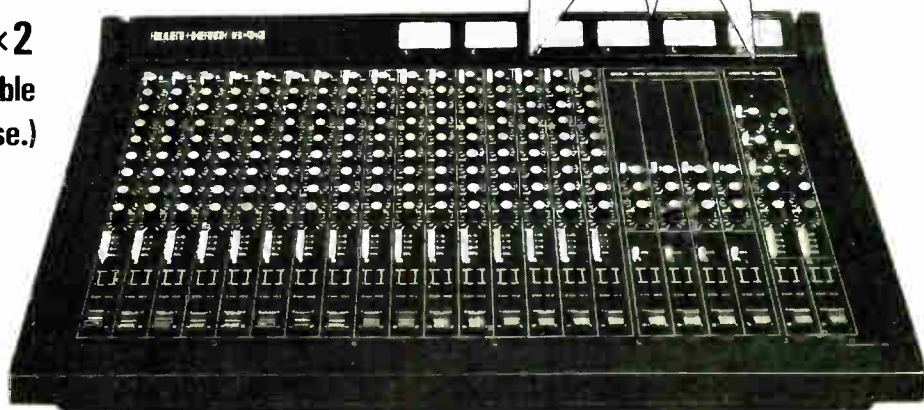
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ferently. "Some of them really need somebody to lean on and tell them what to do. I can do that very well, but I don't really want to work with anyone like that. Then again, there are people who need you there but they would rather have it seem that everything was their idea. There's a way to do that, and if that's what it takes to make it happen, that's what I do." John notes that special care must go into his working with sidemen, because "there is more of a potential ego conflict in most cases."

Hug believes strongly in experimentation. "I'm constantly experimenting and going through stages and phases. Consequently," he says, "I don't really want to have a 'John Hug sound'. However, one thing I always do is reduce everything to the lowest common denominator. I may not put it on tape that way, but I want to make sure that everybody involved realizes what that means. If they're playing some complicated pattern that changes every second, I try to make them understand that all of that only communicates in a simpler musical form to the listener."

John tries to prepare in advance for sessions, but he recognizes that sometimes that is impossible. Furthermore, he's found that some artists don't need it. "You walk in and they have these incredible songs, the format is pretty good, and the feel is there. I can just put together the players that make sense and go in. If you're using studio players, they'll get more inspired playing on the first few takes. With a band, you'll usually need more rehearsal, because they're almost always doing way too much. I don't know why that's a rule, and it sounds like a sweeping bullshit generalization, but it's true. I'm proud to say that Marty Balin's band calls working with me the 'John Hug School of Economics'."

Looking at the broad field of producing records, Hug believes that producing is "becoming an art form. It's not as nebulous as it once was, and there's not as much money to spend. The producer at minimum is a kind of safeguard for a record company's budget."

John also notes that "there seem to be more engineer/producers and musician/producers nowadays. The great engineer/producers seem to be most successful with people who are very together musically and who know what they want to do, but still need that objective ear to help them record it. Musician or arranger/producers are often very good with artists that need more help with songs or who just do better when they combine with someone who has similarly exciting musical ideas."

Lastly, Hug offers a word of advice to potential producers—patience. It does take time. ■

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# Artist Studios

## TOM T. HALL'S TOYBOX



PHOTO: SAM BORGERSON

Toybox engineer Chuck Haines beside Tom T.'s "starstool."

by Sam Borgerson

"A songwriter and recording artist without a studio is like a pilot without an airplane," says Tom T. Hall in his matter-of-fact Kentucky drawl. "And the cost is comparable to buying an airplane, too, by the way. And they're hard to fly. I don't really know a thing about it, even now. I couldn't even go up there and turn on a mike for you."

This lack of engineering expertise can easily be forgiven, since Hal' already has more than enough credits stacked under his name. He's a top country songwriter ("Harper Valley PTA," "Old Dogs, Children and Watermelon Wine," and dozens more), an RCA recording artist, a best-selling author (*The Storyteller's Nashville*, plus a novel on the way), and a TV host on *Pop! Goes the Country*.

With his talented fingers stuck in so many different pies, scheduling convenience and creative isolation are of utmost importance to Hall. When he moved out to Fox Hollow, his ranch 15 miles from Nashville, he found the constant commuting tiresome. "I don't like to drive to Nashville," Tom T. says. "If I get an idea, then drive down to Music Row, I've forgotten what it was by the time I get there." He first opted for a home studio, installing a 16-track facility in his barn. But after running afoul of zoning restrictions which prevented him from ever charging for outside bookings, he compromised by building the Toy Box in Brentwood, an upper crust and semi-rural suburb only about 5 miles away.

Built in 1976, the Toy Box was used predominantly for in-house projects until about a year ago. Currently, Hall uses about 15% of the total time for himself, with about 40%

devoted to his company projects—demos for publishing, radic promotions, TV soundtracks, and Psa jingles. The remaining time booked—enough to turn a fair profit—goes to a mix of country, gospel, rock and jingle session.

The Toy Box has a cozy, intimate feeling. The room is small, fairly dead, and the walls display funky photos, paintings, and memorabilia. "The fear of censure is the death of genius" adorns a plaque on one wall, while behind the keyboards a clean shaven Kris Kristofferson grins boyishly out of a blow-up of a fuzzy snapshot.

The control room is built around a basic MCI 16-track console and recorder package. Both Hall and Chief Engineer Chuck Haines see moving up to 24 tracks as inevitable—a realization that struck home this past year when, for the first time, Tom T. finally produced his own album.

What is Hall's attitude toward buying all the newest and latest gadgets? Humorous detachment.

"If we bought all the toys available now for studios," he says dryly, "we wouldn't be able to get in the control room. It's sort of like buying a toy train set—there's really no end to it. But Chuck is a great horse trader. He'll find some toy he has that doesn't work and he'll go trade it off with somebody for another one...that doesn't work. It's sort of like comic books. After you've read them, you just trade them off."

And would he recommend studio ownership to other artists?

"Sure, if they can afford it. I don't know if I could afford one today. Inflation has just pushed costs out of sight. That's the same reason I didn't buy an airplane." ■

# Creative Visions of New Technology

## MASTER DIGITAL

by David Goggin

Master Digital, Inc. is a new company in Venice, California, that provides a full array of state-of-the-art audio and visual techniques in its productions, cassette mastering and service operations. "The central concept

of the company is high technology combined with high creativity," states company President Roger Pryor, formerly head of Sony's digital audio division. Pryor, with an extensive background in video and film production, directs the complicated interface operations connecting film, video, and

digital audio.

Arne Frager, an audio engineer and studio owner with over 40 digital albums to his credit, is Vice President of the new company. "For years," states Frager, "the film and video people have not been concerned with sound. That is changing rapidly and the producers are becoming more involved with audio. There are so many cross-ties among records, films, TV shows, and the growing videodisc and videocassette markets that they have to take quality sound into serious consideration."

The scope of Master Digital's operations is impressive. The company provides everything from the total audio/visual package to the various high-tech production elements requested by outside producers, as well as the finest cassette mastering offered to date. The latest technologies in video, film, and audio are the emerging state-of-the-art; and Master Digital is completely geared to provide the successful interaction between the production community and these new technologies.

The cassette duplication wing of Master Digital provides super-fidelity tape copies recorded at real time from 16-bit digital audio masters. Because the digital format introduces no degeneration of signal, analog masters transferred to the digital system are reproduced exactly. The entire duplication studio was designed by a team of professional audio engineers headed by Arne Frager and all recording is done by engineers with extensive music backgrounds. "Anyone can make a cassette recorded at real time from a digital master that will knock your socks off," states Frager, "but if you do them in quantities of 20,000 you need a really fool-proof system."

Master Digital records cassettes from Sony PCM digital masters, or



Master Digital's Arne Frager and Roger Pryor (L to R).



T.M.

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from any other manufacturers digital format requested by the client. If the original tape is in analog form (Dolby A, B, C, or no noise reduction), the company makes a quality digital master, with acute attention paid to azimuth levels and other professional standards. The result is a digital master for the client that will never deteriorate and will serve any future uses of the product.

The cassette decks used for duplication are the new Sony TC-K777 high performance decks, to be introduced to the U.S. market later this

year. The new decks incorporate microprocessor controls, closed-loop dual-capstan, quartz-lock and completely transformerless components, rendering unprecedented dynamic range and wow and flutter specifications. A very high slew-rate, transformerless, low noise, low distortion line amplifier transmits digital source program audio (greater than 100 db) to each of the cassette recorders. Manual front-panel bias and record calibrations allow operators to optimize each cassette tape for every run. Daily maintenance of cassette recorders with performance monitors and early re-

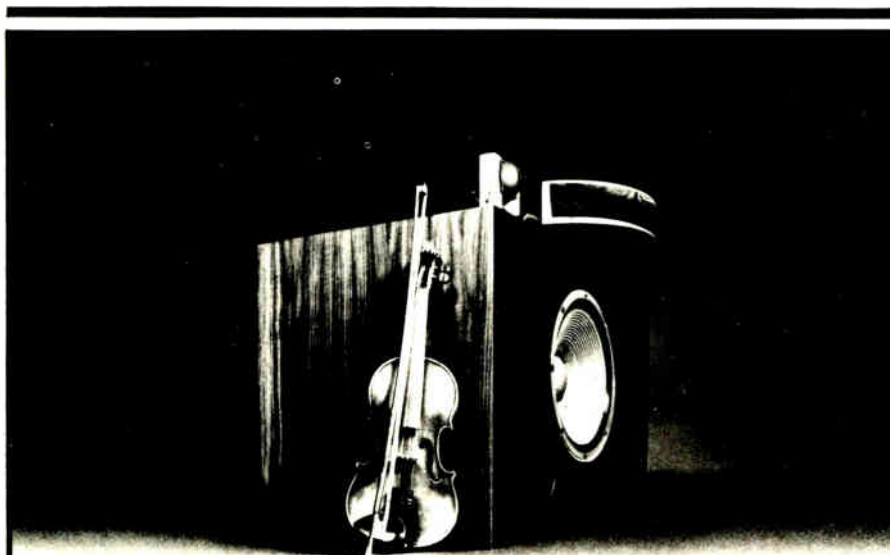
placement of heads maintains the highest quality. The Sound Technology 1500A analyzer is used to monitor and calibrate azimuth, tape path alignment, as well as verify quality. In runs of over 100, Master Digital provides a print-out of the exact sound specs for the client.

In audio cassette technology the quality of the recording is determined most significantly by the quality of the shell and the tape used. Master Digital conducted extensive testing in determining the tape which has the highest performance and consistency of batch manufacture. The particular tape chosen is based on the preference and the budget requirements of the client. All cassettes are monitored against the master as they are recorded, followed by two more stages of quality control before shipping.

The duplication service provides high quality cassettes for record companies requiring advance radio copies, internal production approvals, and pre-release copies for press reviews. Since the operation was begun in June, A&M, Columbia and EMI/America have used Master Digital to handle cassette duplication. A second area where quality cassettes are needed is for manufacturers wishing to demonstrate their equipment with the best recorded product. Master Digital's first project in this area involved Saab automobiles and the Sony Corporation. All Saabs sold in the U.S. with cassette decks now have Sony decks and demonstration cassettes produced by Master Digital, which also handled licensing of artists, artwork, scripting and production, as well as quantity duplication. Additionally, Master Digital provided cassette duplication for record labels as a high-end audiophile product sold through normal distribution channels.

A new recording concept to be introduced this year is Home Music Store, a company which will cable digital recordings to the home in the same way that pay TV operates. The subscribers will pay a fee and record their favorite albums at home with a significant reduction in cost. For Home Music Store's national press conference in October, Master Digital scripted, produced and recorded their digital demonstration tape and provided the press with demonstration cassettes.

"Our primary goal," states Roger Pryor, "is to produce the entire show — whether it is film, video, or digital audio recording. We provide the theme, create the storyboard, line up



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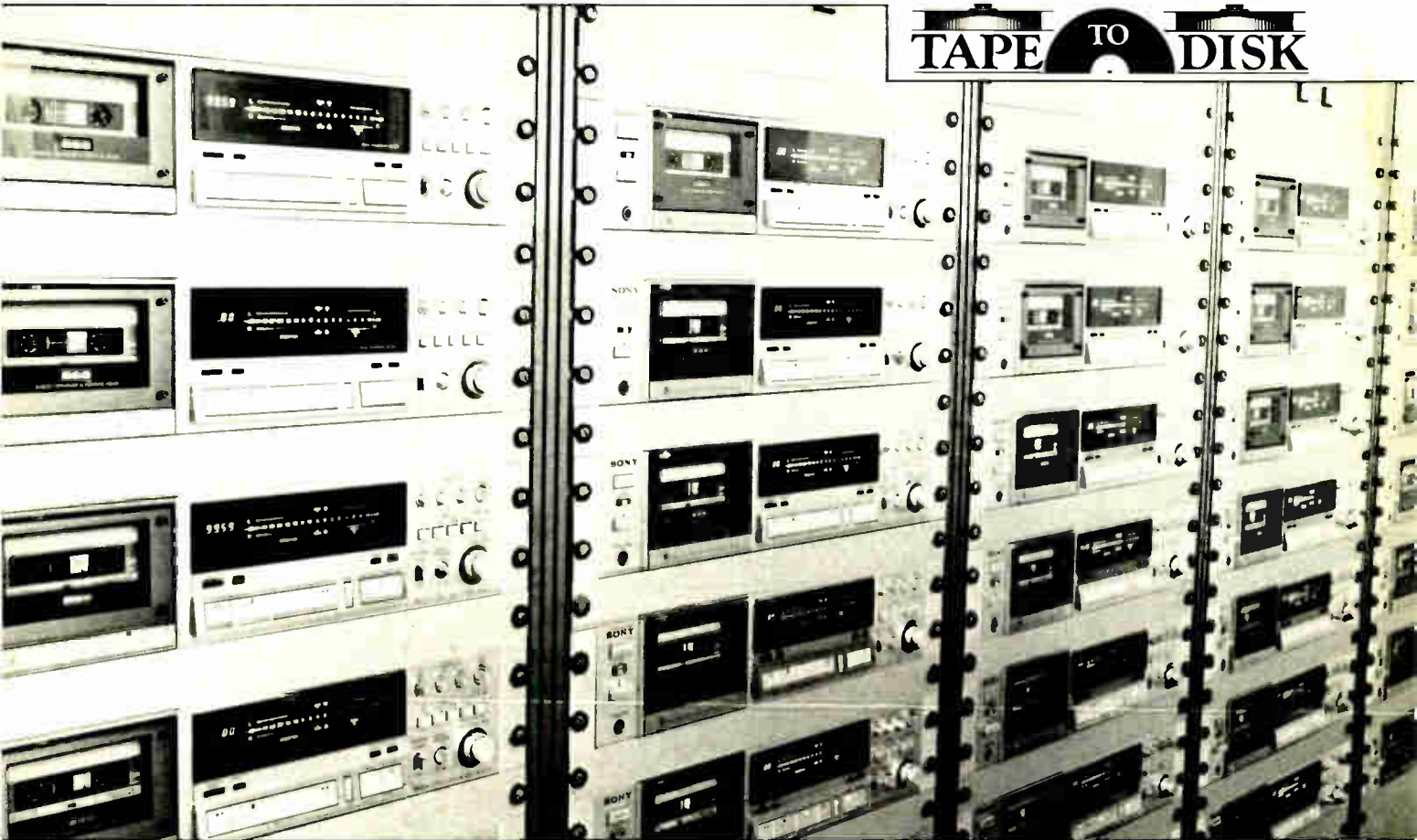
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the talent and handle negotiations with managers, get the backing, and set up the distribution network. Because we are centered in digital audio, we are naturally drawn to projects of a musical nature."

The '81 summer ad campaign for Chardon Jeans was a total Master Digital creation. The jingle was composed and recorded digitally; the visuals were filmed in 35mm and then transferred to one inch videotape for editing and special effects. Quad copies for TV had audio recorded from the digital masters, and all radio copies were likewise made directly from digital masters. The production involved digital video effects, and the entire high-tech combination proved to be a successful one.

"The beauty of the Sony PCM system is that it is essentially a video system," states Arne Frager. "When it comes to video post-production, it's a very straight-forward matter to marry the audio and the video. I think that Roger and I have pioneered work in this area — we've worked with the post-production houses and shown many how to interface digital audio with their CMS editing systems."

"The key to making all of this work effectively is thorough knowledge of the various digital, video, and film formats and experience with combining the most suitable elements for the specific project," adds Pryor.

In addition to providing the total production package, Master Digital also handles soundtracks and record projects for producers who wish digital audio. In film, TV, and record production, this is becoming a common request; but the new digital technology is frightening to those unfamiliar with the actual working conditions. The years of experience that Pryor and Frager have in this area, combined with the efforts of their National Sales Manager, Paul Addis, have made Master Digital much sought after for both remote and studio digital recording.

Operating on the threshold of the new technologies is a risky business, but for those who have the knowledge and the confidence it can be a very rewarding venture — both artistically and financially. The premise is that the public will recognize and demand the best final product. Creating such a product in the midst of a technically accelerated and constantly changing environment is the work of aggressively inventive companies like Master Digital. ■

# TAPE TIPS

by Warren Simmons

The seasonal transition toward cooler weather, often accompanied by wide swings in temperature and humidity, suggests that some precautions should be taken in the storage and handling of magnetic tape.

## ENVIRONMENT

To begin with, cold tape is less pliable than warm tape and therefore has more trouble conforming to the head surfaces of the recorder. Cold tape, immediately placed on the recorder in a warm, normal humidity atmosphere, can cause surface moisture condensation, and thus, large changes in frictional properties across heads and guides.

The binder system in cold tape is less pliable and edge shed may result. So bring your tape into the same atmosphere in which you plan to use it at least 24 hours beforehand.

Optimally, store your tape in an air conditioned atmosphere under "people" conditions: that is, 65° to 75°F and 50% to 60% relative humidity.

## CLEANLINESS

The binder system in magnetic tape is a designed compromise between pliability and hardness. Some shed will normally occur during the many mixdowns or overdub passes. So be sure to keep heads and guides clean.

Handle the oxide surface as little as possible. Fingerprints leave an oily residue which in turn picks up surface dust. This becomes supercritical in digital recording where surface dust. This becomes supercritical in digital recording where surface dust accumulation may cause

uncorrectable dropouts, with the result being clicks and pops. One equipment manufacturer even goes as far as recommending white gloves when handling digital tape.

Freedom from airborne dust is important. Tape should be stored in closed containers during periods of control room cleanup.

## STORAGE

The box supplied with the tape has been designed to protect both the tape and the reel. It's best to keep the reel in the box when not in use.

Wrinkled or creased ends of tape should be cut off before storing because, under severe conditions, a heavily creased or wrinkled section can impress its image on several adjacent layers and cause dropouts.

Here are three simple steps to take to maximize the performance of your tape and to extend its life:

- 1) Store tape tails out to minimize print-through signal.
- 2) To assist in investigating the unlikely possibility of tape problems, retain reel serial number appearing on bottom flanges of reels.
- 3) Store recorded tape in a temperature-humidity controlled area with boxes vertically positioned.

**\*Warren Simmons is an audio product manager for the Ampex Magnetic Tape Division with responsibility for the 406/407/456 series of analog audio tapes and for the 460/466 digital mastering tapes. He has been with Ampex since 1969, and previously was an electrical engineer with RCA. Mr. Simmons holds a degree in Electrical Engineering from Drexel Institute of Technology and has contributed several articles to the Mix.**

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# COMPACT DISC

## The Record Evolves One Giant Step

*Ed Note: One of the major attention getters at AES was the Compact Disc. We surveyed available information on the topic and are pleased to present this report.*

The Compact Disc audio system represents a breakthrough in recording technology that most likely will affect the entire music industry. Offering playing time twice as long as that of an LP, the Compact Disc (or CD) is also capable of a new level of quality that no analog LP can match. Besides being very convenient in size, the discs are extremely durable and resist abuse that would all but destroy a more conventional record. The Compact Disc promises a broad spectrum of applications, from broadcast and jukebox at the professional end, to home audio systems,

portable (Walkman type) stereo and auto sound systems at the consumer level.

### Beginnings

N.V. Philips, in the Netherlands, introduced the first Compact Disc recording system in the spring of 1979. As Sony, in Japan, had also been working on the optical readout system employed by Philips, they approached Philips with a joint research proposition in order to speed development and make headway toward a worldwide standard. As a result, a new format was developed; the major points including the use of a 12 cm (4<sup>3</sup>/<sub>4</sub>" ) diameter disc, which offers 60 minutes of 2-channel

recording capability on one side, and the adoption of an optical signal readout system.

Philips and Sony jointly submitted the CD format to the Digital Audio Disc Standardization Conference and, in April 1981, the final report of its study recommended the CD format as the standard for audio disc recording and reproduction. Since then, the following firms have adopted the CD format: Bang and Olufsen, CBS/Sony, Crown, Dual, Matsushita, Nakamichi, Nippon Columbia, Onkyo, Polygram, Sony, Studer/Revox, Thomson and Trio Kenwood. In 1982 CBS/Sony plans to release more than 100 Compact Disc titles in Japan simultaneously with the introduction of its CD players.

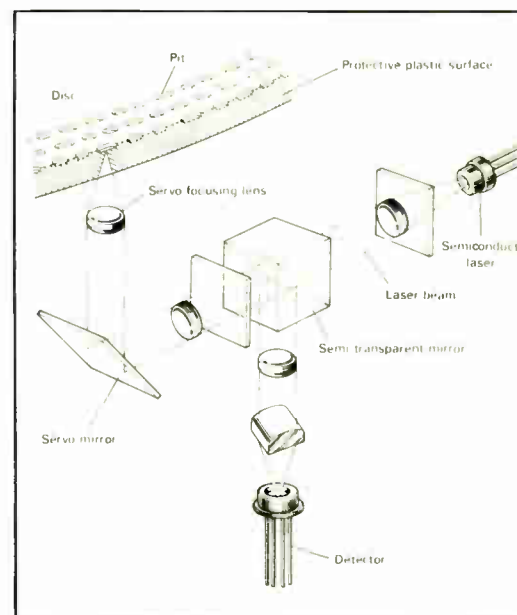


*Impervious to dust, dirt and wear, the Compact Disc contains up to one hour of music on one side of the 4.7 in. diameter disc. Market introduction is scheduled for Autumn 1982.*

World Radio History

### The Optical Signal Detection System

The hour-long CD recording is made up of six billion bits, linearly encoded along the helical track of pits (which are about 0.6 micron in width and about 0.2 micron deep) and flats.



These represent "ones" and "zeros" in binary computer language, and the extraordinarily high density of information assures an exact reproduction of the original sound.

The solid state laser pick-up scans this sequence of pits and flats from below in the form of a concentrated light spot several times thinner than a human hair. Scanning rate is approximately 4.3 million bits per second. Response is at the speed of light. With no contact between laser pick-up and disc, record wear is eliminated.

The data storage capacity of the disc is much greater than is needed to record an hour of music per side. This additional capacity allows the Compact Disc system to offer many hitherto unknown programming possibilities. Number, length, titles and even texts of songs could be encoded for print-out via luminescent display or on TV monitoring screens. It will be possible to play individual selections in any desired sequence, to skip certain songs, or repeat others at the touch of a button. The Compact Disc provides enormous latitude and flexibility for imaginative hifi designers in the future.

## Outline of the Compact Disc System

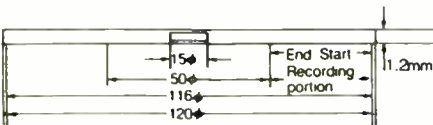
### DISC

**Playing time:** Approximately 60 minutes of 2-channel recording per side. Theoretically, this can be increased up to 80 minutes, which would mean that only a single side of this compact disc would be sufficient for Beethoven's entire 9th Symphony. With 4-channel recording, which has a speed twice as fast of that for 2-channel, the playing time is reduced by one-half to about 30 minutes.

**Scanning velocity:** Absolutely constant at any chosen line velocity between 1.2 m/s and 1.4 m/s. The turntable platter rotates at a speed of 200 rpm at the outer circumference of a 116 mm disc and at 500 rpm at the inner circumference (50 mm).

**Rotation:** Counter-clockwise when viewed from the disc surface.

**Disc dimensions:** insert graph



Track pitch: 1.6 $\mu$ m

Track pitch: 1.6 micrometer.

### SIGNAL FORMAT

**Number of channels:** 2 channels (standard); 4 channels (at two times normal speed).

**Quantization:** 16-bit linear per channel for encoding. Signal readout in playback is possible even with a 14-bit linear or 12-bit non-linear system.

**Sampling frequency:** 44.1 kHz. This theoretically allows recording and reproduction of frequencies of up to 22 kHz, with sufficient margin for the highest audible frequency, 20 kHz. (Shannon's theorem).

**Error correction:** CIRC (Cross Interleave Reed Solomon Code). A remarkably efficient correction code capable of correcting a burst error as large as 3,548 bits, or 2.38 mm. Errors greater than this, but less than 14,000 bits can be compensated for by means of linear interpolation.

## TAPE TO DISK

**Modulation system:** EFM (Eight to Fourteen Modulation). This technology was specially developed for use in digital disc systems, to achieve high density recording and maximize optical servo system performance.

**Recording density:** 43,218 bits/sec.

### OPTICAL STYLUS

**ALGaAs laser:** 780 nm wave length.

**Numerical Aperture:** 0.45 optimum ratio 1.75.

## Your Second Tape Duplicator Should Be Your First

Most people who buy an Otari DP-4050-C2 cassette duplicator are replacing their first compact unit. They choose Otari because they want better quality copies and a more reliable unit. The dependable DP-4050-C2 gives them both — and more.

This remarkable machine copies two tapes at a time in 8:1 speed. With the addition of three Z3 Slaves (which make three copies each), it can make up to 11 copies at a time. Some of the advanced features which help make the DP-4050-C2 so popular as a second machine are:

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- Automatic Master re-cue for faster operation
- Automatic ejection of finished copies
- Long lasting ferrite heads
- Easily removable Master and Slave transports for easier service and less down time
- 800 kHz bias for superior fidelity and less distortion

See your nearest Otari professional audio dealer to find out why the Otari DP-4050-C2 has earned the reputation as the New Workhorse of table-top cassette duplicators and should be your first.

# OTARI

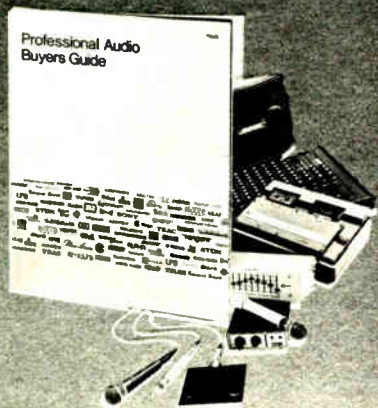
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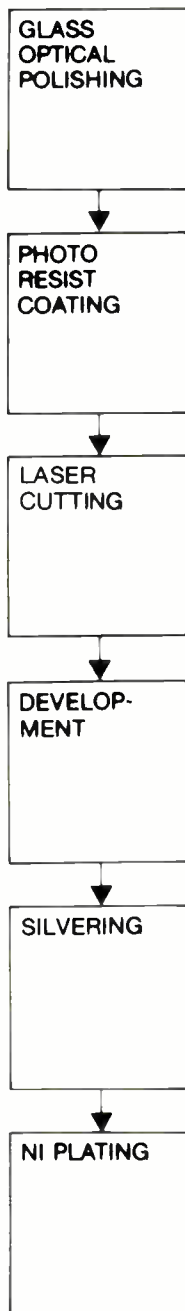
## TAPE TO DISK

Focal length: Approx. 2 um.

Beam diameter: Approx. 1 mm (measured at the surface of the disc).

### The Laser Cutting System

Mechanical cutting machines are impractical for digital disc production because the pits to be carved are too small to be handled mechanically. Instead, to produce digital discs, a glass plate coated with photo resistive material is first exposed to a laser beam, to be

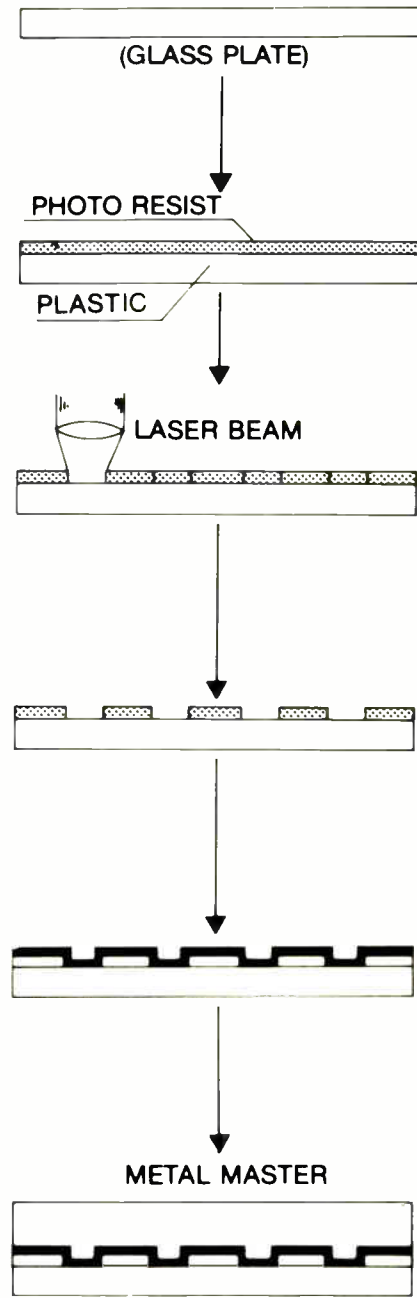


### AUDIO PERFORMANCE

**Frequency response:** Flat throughout the full range of 20-20,000 Hz.

**Dynamic range:** Better than 90 dB (97.5 dB in theory).

developed in the next step to form pits corresponding to the presence or absence of digital signals. After undergoing the silvering process, this becomes the glass master which is next pressed against a nickel plate to make a reversed copy of the photoetched depressions on the nickel plate. In this way, a digital metal master can be produced, which is used as the mother for the production stamper.



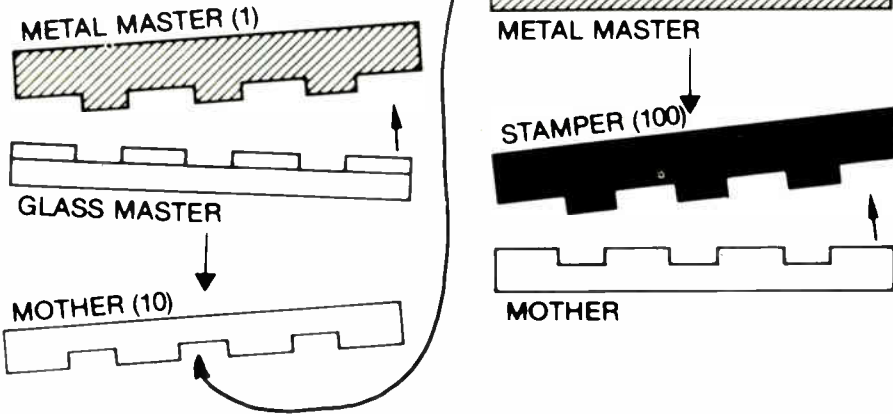
Signal-to-noise ratio: Better than 90 dB (97.5 dB in theory).

Harmonic distortion: 0.05% (0.03% in theory).

Channel separation: Better than 90 dB.

Wow and flutter: Immeasurable.

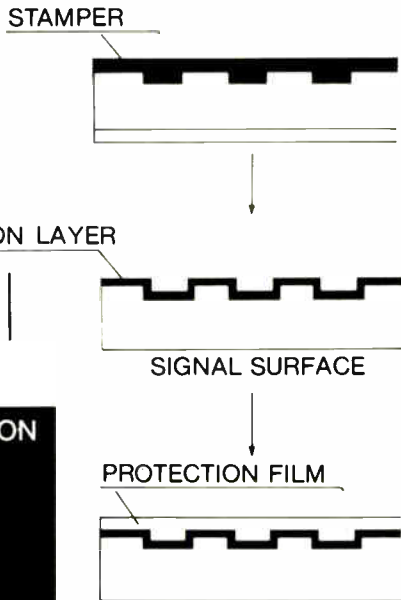
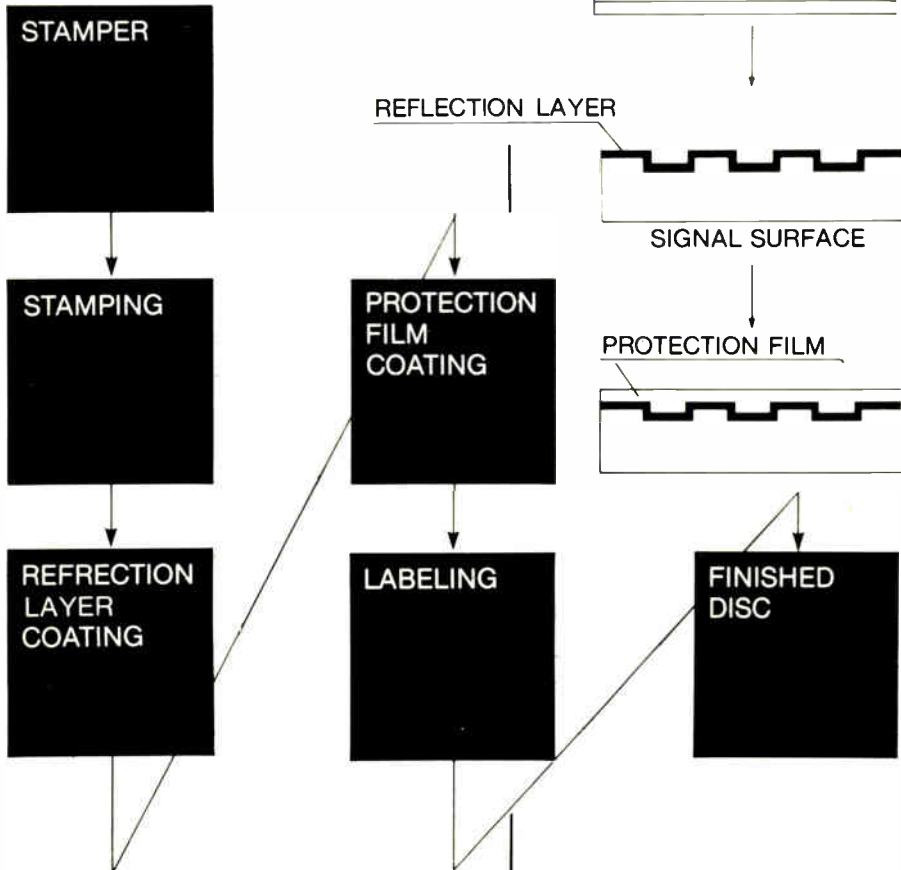
# TAPE TO DISK



## The Pressings System

Pressing is the final stage of disc production. Using the stamper, compact discs are produced in large numbers in the same manner as for conventional analog records. The signal surface of each stamped disc is then coated with reflective material, followed by a

coating of protective transparent plastic on top of that. This ends the production of a single-sided disc. With two-sided discs, the additional process of combining two single-sided discs together is necessary.



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# High Speed Tape Duplication

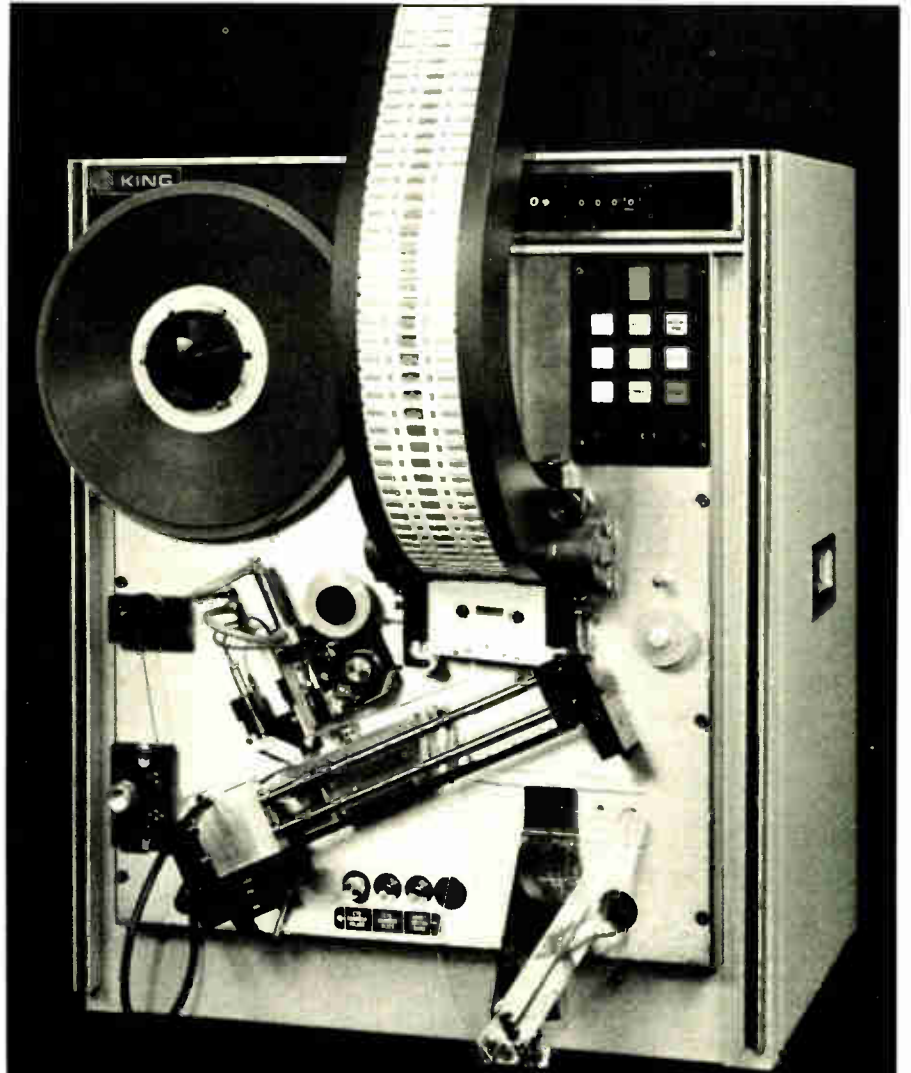
by Phil Markinson

Any discussion of high speed tape duplication today must focus on the audio compact cassette, as open reel and 8 track are rapidly becoming a thing of the past.

The audio compact cassette in its current form was invented by Philips of the Netherlands in the late 1960s, although RCA had developed a cartridge system about twice the size and double the speed of the Philips version earlier in that decade. Philips shared specification drawings on their cassette with 3M and other manufacturers up to October, 1968, when an A.E.S. paper was published by E.R. Hanson. The specifications were then turned over to the international standards organization, I.E.C. From that point other manufacturers got on the band wagon—Ampex, BASF, 3M, etc.

But the big push in cassettes can be attributed to Japan and TDK. Since then the state of the art has improved constantly, so that today's cassettes are

King Self Feed Cassette Tape Loader—Model 780.







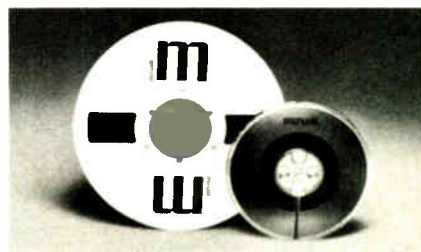
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## TAPE TO DISK

second only to, and sometimes surpass, disks. Improvement of the original Philips design, better materials, and tape manufacturers constantly improving the tape have brought us up to present standards. As the popularity of the cassette increased, methods of high speed duplication were needed. Two methods of high speed tape duplication were developed. We will discuss the pros and cons of each.

The first method of high speed tape duplication of cassettes is the "in cassette method of duplication." The duplication process of the "in cassette" method utilizes pre-loaded cassettes—C-30, C-45, C-60, etc. A master tape or a cassette master is placed in the master reproducer and run at high speed, usually eight times normal speed, and the audio information is then transferred to the blank cassette. One of the advantages of the "in cassette" method is that the initial cost of the duplicating is much lower than other methods. There is an ability to use the client's master, either open reel or cassette, which eliminates a remastering process and enables the duplicator to rapidly produce a short run of copies.

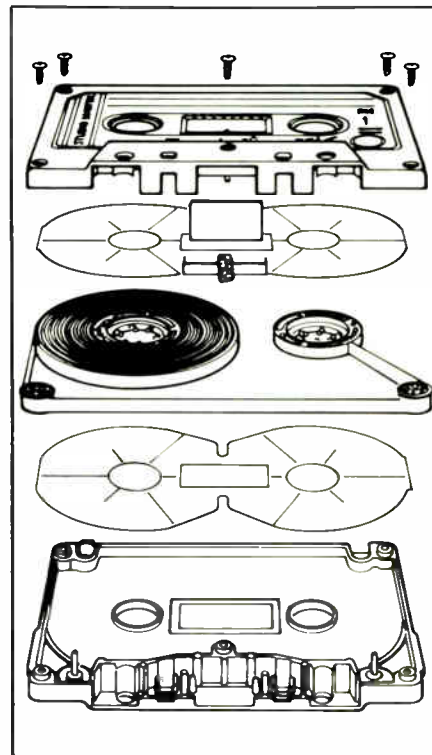
However, the plusses are greatly outnumbered by the negative points of "in cassette" duplication. Although engineered with proper equalizations for high speed duplication [remember that a 10k hertz tone will become an 80k hertz tone when tape is run 8 times normal speed], the frequency response is generally not as good as other methods. Where duplication is made from a cassette master, all the negative features and faults are transferred to the copies. For example, cassettes were not made to be run at high speed. High speed increases flutter and wow on your recording. Also, most audio tape will shed minute particles of oxide and leave deposits on the record head as well as the pinch roller and capstan. This can contribute to drop-outs and uneven movement of the tape in the shell. Obviously, after each recording the heads and capstan should be cleaned. In the mechanical operation of a typical "in cassette" duplicator, the cassette shell is held in place in a fixed position. When put into the record mode, the recording head moves into the cassette shell port and contact is made between the recording head, tape, and the pressure pad of the cassette. Proper pressure must be applied and maintained to assure good tape-to-head contact. "In cassette" duplication is usually quite adequate for speech or similar types of audio, but not really for music where good fidelity is a prerequisite.

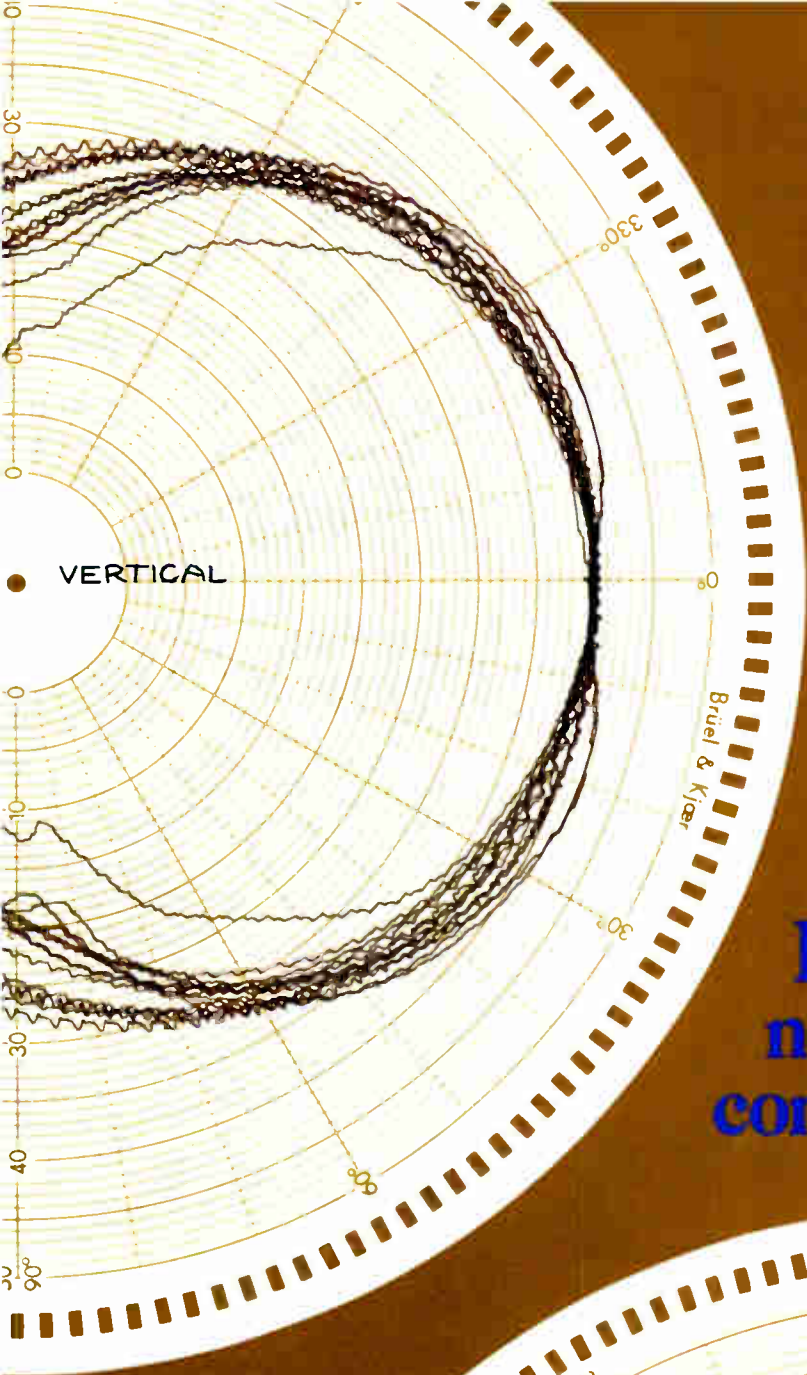
## Bin Loop

The alternative method of high speed duplication is the "bin loop" method, so called because the master tape forms a closed loop and the large amount of tape is contained within a cage or bin. The tape then travels through the reproduce head portion of the duplicator at various speeds ranging from 8 to 16 to 24, even 32 times normal speeds with proper EQ for various ratios. We will talk about the mastering process later. As the tape travels through the system, the master tape usually passes over a tape wipe material, which reduces the possibility of oxide transfer and shedding on the heads, thus reducing drop-outs which could be caused by these problems. The tape is guided through the system by a number of pinch rollers and guides which are usually air assisted, thus maintaining a true and accurate tape path over the heads. No flutter and wow will be caused by skewing of the tape. The head and tail of the bin master are tied together, forming the closed loop. Where the head and tail are tied together, a window is created by punching a hole in the tape, or adding some clear leader tape which when passed over a photo electric cell will trigger the reproducer to inject a low frequency tone onto the recorded tape on the slaves.

This tone usually serves a

**Exploded view of a recommended cassette assembly.**





Before you invest in  
new studio monitors,  
consider all the angles.



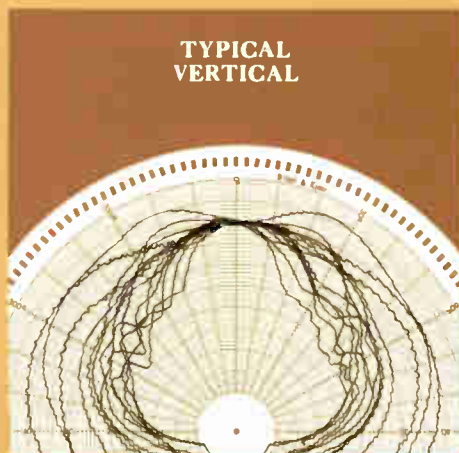
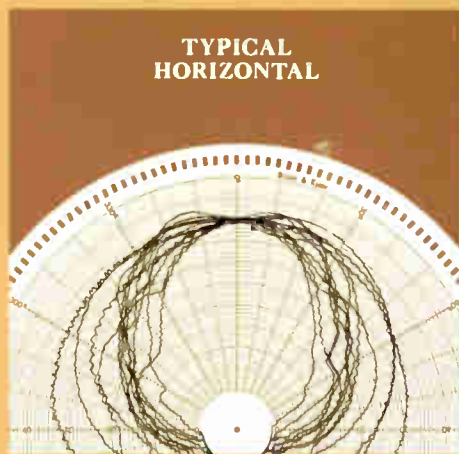
# Introducing the JBL Bi-Radial Studio Monitors.



No one has to tell you how important flat frequency response is in a studio monitor. But if you judge a monitor's performance by its on-axis response curve, you're only getting part of the story.

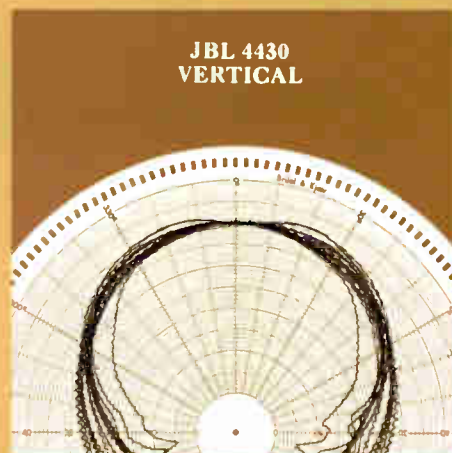
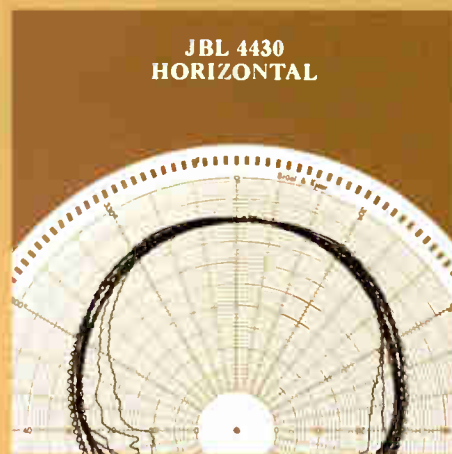
Most conventional monitors tend to narrow their dispersion as frequency increases. So while their on-axis response may be flat, their off-axis response can roll off dramatically, literally locking you into the on-axis "sweet spot." Even worse, drastic changes in the horn's directivity contribute significantly to horn colorations.

*Polar response of a typical two-way coaxial studio monitor:*



At JBL, we've been investigating the relationship between on and off axis frequency response for several years. The result is a new generation of studio monitors that provide flat response over an exceptionally wide range of horizontal and vertical angles. The sweet spot and its traditional restrictions are essentially eliminated.

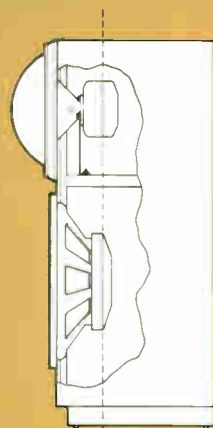
*Polar response of a 4430 studio monitor:*



## The Bi-Radial Horn

The key to this improved performance lies in the unique geometry of the monitors' Bi-Radial horn! Developed with the aid of the latest computer design and analysis techniques, the horn provides constant coverage from its crossover point of 1000 Hz to beyond 16 kHz. The Bi-Radial compound flare configuration maintains precise control of the horn's wide 100° x 100° coverage angle. Since this angle is identical to the coverage angle of the low frequency driver at crossover, the transition from driver to driver appears seamless and the monitors present a fully coherent sound source.

And the Bi-Radial horn's performance advantages aren't limited to just beamwidth control. The horn's rapid flare rate, for instance, dramatically reduces second harmonic distortion and its shallow depth allows for optimal acoustic alignment of the drivers. This alignment lets the monitors fall well below the Blauert and Laws criteria for minimum audible time delay discrepancies.



*Acoustic alignment of drivers (4430)*

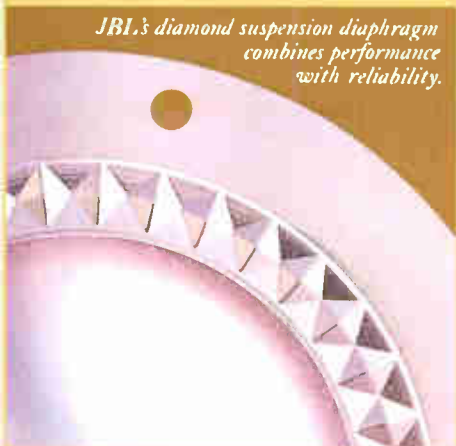
The practical benefits of the Bi-Radial horn design include flat frequency response and remarkably stable stereo imaging that remain valid over a wide range of listening positions. The design also allows considerable latitude in control room mounting. Finally, the flat on and off axis frequency response of the horn means that less high frequency equalization will be required to match typical house curves.

But while the Bi-Radial horn offers outstanding performance, it's only part of the new monitors' total package.

## Extended Response in a Two-Way Design

Coupled to the horn is a new compression driver that combines high reliability and power capacity with extended bandwidth and smooth, peak-free response. The driver features an aluminum diaphragm with a unique three-dimensional, diamond-pattern surround! Both stronger and more flexible than conventional designs, this surround provides outstanding high frequency response, uniform diaphragm control, and maximum unit-to-unit performance consistency.

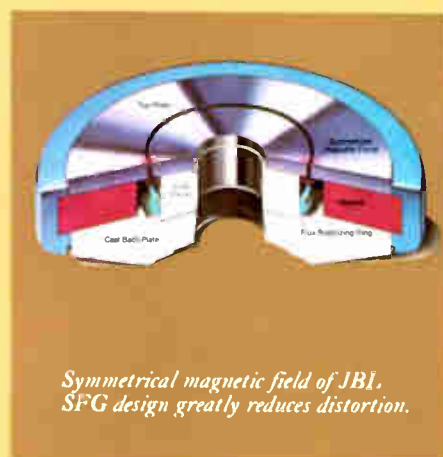
*JBL's diamond suspension diaphragm combines performance with reliability.*



To ensure smooth response to the lowest octaves, controlled midband sensitivity, extremely low distortion, and tight transient response, the Bi-Radial monitors also incorporate the latest in low frequency technology. The loudspeakers' magnetic structures feature JBL's unique Symmetrical Field Geometry (SFG) design to reduce second harmonic distortion to inconsequential levels. Additionally, the speakers utilize exceptionally long voice coils and carefully engineered suspension elements for maximum excursion linearity, and complete freedom from dynamic instabilities for tight, controlled transient response.

## Blending the Elements — The Dividing Network Challenge

Tailored to the acoustical characteristics of the Bi-Radial monitors' high and low frequency drivers, the dividing network provides the smoothest possible response over the widest bandwidth while restricting any anomalies to an extremely narrow band. During the network's development, JBL engineers paid considerable attention to on-axis, off-axis, and total power response. As a result, the electrical characteristics of the network are optimized for flat response



*Symmetrical magnetic field of JBL SFG design greatly reduces distortion.*

over the monitors' full coverage angle.

The network also provides equalization of the compression driver for flat power response output. This equalization is in two stages with separate adjustments for midrange and high frequencies.

## Judge For Yourself

Of course, the only way to really judge a studio monitor is to listen for yourself. So before you invest in new monitors, ask your local JBL professional products dealer for a Bi-Radial monitor demonstration. And consider all the angles.

1. Patent applied for.



4430

4435

<b>Specifications</b>	<b>4430</b>	<b>4435</b>
Frequency response ( $\pm 3$ dB)	35 - 16,000 Hz	30 - 16,000 Hz
Power Capacity (Continuous Program)	300 W	375 W
Sensitivity (1 W, 1 m)	93 dB	96 dB
Nominal Impedance	8 Ohms	8 Ohms
Dispersion Angle ( $-6$ dB)	$100^\circ \times 100^\circ$	$100^\circ \times 100^\circ$
Crossover Frequency	1 kHz	1 kHz
Network Controls	Mid Frequency Level High Frequency Level Switchable Bi-Amplification	

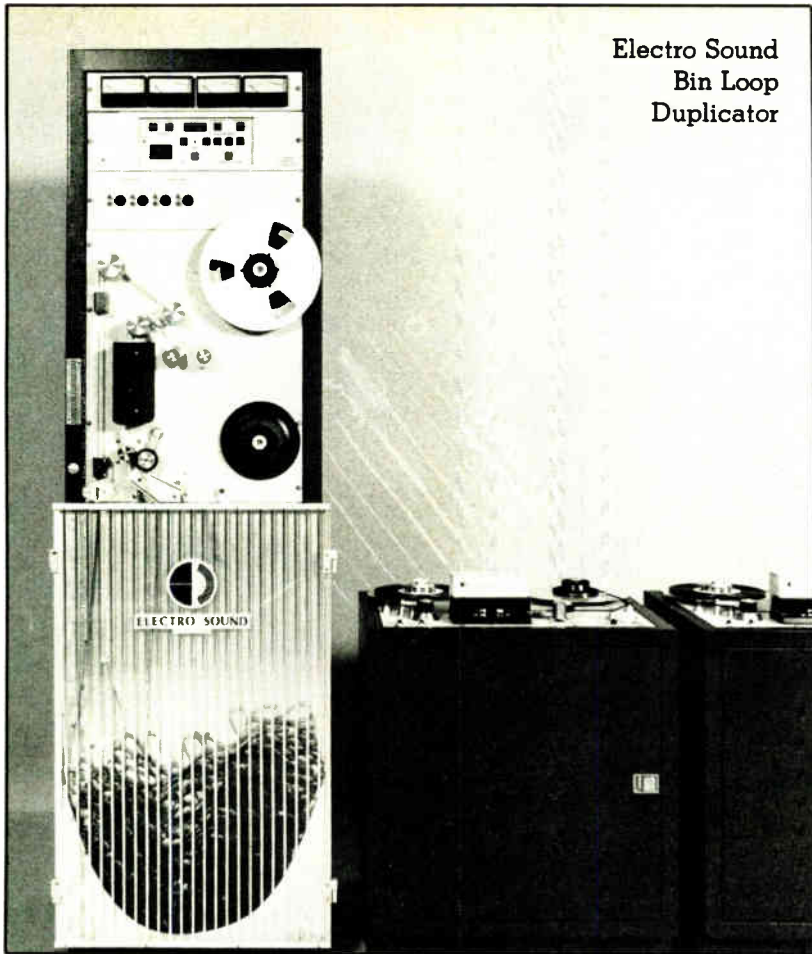


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Electro Sound  
Bin Loop  
Duplicator

## TAPE TO DISK

number of purposes. It separates the various programs on the slaves and, as a cutting tone, it is used as a sensing tone for the loaders to cut, to load into the shells. The information on the bin master is transmitted to the slaves, which in reality are nothing more than special high speed reel to reel recorders. With special guides, capstans, and pinch rollers to assure a smooth and accurate movement of the tape across the record heads, skew, flutter and wow are eliminated. Before passing over the record head, the tape is also passed over the tape wipe material, eliminating shedding and oxide collection on the heads which cause drop-outs.

The usual hi-speed system, called a chain, consists of a master reproducer and 10 slaves. As in any tape reproducing process, every time the tape passes over the reproducer heads (especially traveling at high speed) there will be some wearing and loss, however miniscule. So the more slaves, the better the end product will be. Depending on the size of the run (the number of copies required,) a duplicator might create more than one bin master and, using more than one chain, could run the same program and make 30 or more copies in one time for each high speed pass.

## The Mastering Process

**A**t this time it is appropriate to discuss the mastering process. At the recording session, the final mix down will be the master tape, usually at 15 or 30 ips. This is the tape you will supply to the duplicator who will, in turn, create the bin master(s) from it. Depending on the system, it might utilize 2" - 1" - 1/2" or 1/4" tape. He will make a mirror image of your master, called the bin master, format it (side A, B, etc.) and adjust the EQ so that the copies will be faithful to your master. Since this bin master will of necessity be a second generation copy, it is absolutely essential for him to work from the final mix down. An admonition at this point: **do not** give your client a mix down onto a cassette. Invariably, a client will bring in a master on cassette and we have to create a reel to reel master from it before we can make a bin master. Thus, the bin master in this case will be a third generation. Also, it can increase the flutter and wow while transferring from a cassette.

The tape the duplicator uses in his duplicating process is certainly very important in the mastering process. There are a number of choices and also

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**TAPE TO DISK**



A typical in cassette duplicator.

a large variety of types to select for copies. You should know the material that your duplicator uses. The quality of the tape is the essence of good hi-speed duplication. Another key portion of the duplicating process is the cassette shell. It should be a 5 screw shell with flanged rollers for steadying the tape path with steel pins to reduce friction, an RF shield, hard window and phosfer bronze spring on the pressure pad to insure maximum head to tape contact. Top brands include Mag-Media and El-Mar, to name two.

The duplicated tape is removed from the slave (usually referred to as a "pancake"). This pancake now contains a number of duplicated programs. The number is determined by the length of the program. The pancake is then placed on the loader, either automatic or semi automatic, such as King or Electro-Sound. After cueing up the first program, the machine will take an empty cassette (called a c-o, as all it contains is a piece of leader going from one hub to another). The machine pulls out the leader, cuts it, splices it to the program at this point, splices it to the other leader, and pulls it all into the shell. You now have a completed, high speed duplicated cassette. But we are not finished yet.

The final process is "quality control." Your duplicator should have some definite method of quality control, such as visual check of the finished cassette for obvious cosmetic defects and, of course, an audio check using top quality monitoring equipment. This should not be limited to a sparse checking, but must be a continuing procedure throughout the whole duplicating process. An excellent procedure is A/B ing the master against one of the copies to make sure of a good copy. The important point is not to take shortcuts around quality control. After all, doing it right the first time will cost less than having to do it over. ■

**Phillip C. Markinson is Owner of Cory Sound Company in San Francisco.**

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# TAPE TO DISK

## Listings of Mastering, Pressing and Tape Duplication Facilities Throughout the United States.

As the quality of record production becomes of increasingly greater concern to engineers, producers, artists and the eventual record buyers; the mastering, pressing and tape duplication operations have also gained a new level of importance.

The following listings of record mastering and pressing facilities throughout the United States were compiled from questionnaires

returned to Mix by the various businesses. Mix claims no responsibility for inaccurate information supplied to us. We suggest that readers contact those listed to verify any essential factors.

The next issue of Tape to Disk listings will be in December of 1982. We urge all mastering, pressing and tape duplication operations who we may have missed in this survey to get in touch with us for the next listings.

### Eastern

**ANGEL SOUND  
TAPE DUPLICATION**  
1576 Broadway, New York, NY 10036  
(212) 765-7460  
Contact: Sandy Sandoval, Owner

**AUDIO DUPLICATING SERVICE  
TAPE DUPLICATION**  
915 N.E. 3rd Ave., Ft. Lauderdale, FL 33304  
(305) 764-0333  
Contact: Mark Auld

**BESTWAY GROUP (Fearless Audiophile Div.)  
MASTERING & PRESSING**  
1105 Globe Ave., Mountaintop, N.J. 07092  
(201) 232-8383  
Contact: Paul Stevens

**CENTRAL AUDIO VISUAL, INC.  
TAPE DUPLICATION**  
1212 South Andrews Ave., Ft. Lauderdale, FL 33316  
(305) 522-3796  
Contact: M. Lever, V P

**THE CUTTING EDGE  
MASTERING, PRESSING & TAPE DUPLICATION**  
Old Rte. 17, Box 217, Ferndale, N.Y. 12734  
(914) 292-5965  
Contact: Paul Gerry, Owner

**MASTERING**  
Cutting lathes: Presto mono lathe with Gramplan cutterhead; video groove inspection, Scully stereo lathe with Westrex 3D11 cutterhead  
Console: Custom-built disk mastering console and control rack  
Tape machines: Custom-modified Ampex 351 stereo transfer deck w/h preview head  
Monitor speakers: JBL 4311's, Auratones and Altec

**Signal processing:** Fairchild 670 limiter compressor, UREI 1176N limiter, Ashly parametric, Pultec EQ, Graphic EQ's, dbx and Dolby  
**Engineers:** Paul Gerry  
**Rates:** All prices per side: 12" \$70.00, 7" \$40.00; studio time \$50/hr, editing \$35/hr, we offer many more services, please send for free brochure  
**Other services:** 1/2 speed cutting, reference acetates, complete album production, jacket design, photography, pressing, fabrication, labels, metal

**DISC COMMUNICATIONS LTD.  
MASTERING, PRESSING & TAPE DUPLICATION**  
743 Fifth Avenue, New York, N.Y. 10022  
(212) 371-0390 or (212) 966-3185  
Contact: Joe Graham, Sales Manager

**DISKMAKERS INC.  
PRESSING & TAPE DUPLICATION**  
925 N. 3rd St., Philadelphia, PA 19123  
(215) 627-2277  
Contact: Paul Deny, General Mgr.

**ERH PRODUCTIONS  
MASTERING, PRESSING & TAPE DUPLICATION**  
40 West 27th St., New York, N.Y. 10001  
(212) 696-1550  
Contact: Bob Shavelson, V P National Sales

**EUROPADISK, LTD.  
PRESSING**  
75 Varick Street, New York, N.Y. 10013  
(212) 226-4401  
Contact: Ms. Pat Rosiello, Production Mgr.  
**PRESSING**  
Presses (Mfg. and quantity): Modified Hamilton automates.  
Capacity: 10,000 per week  
Vinyl used: Teldec, Keycor KC-600 virgin materials only.  
**Rates:** By inquiry  
**Other services:** Audiophile quality pressing and plating exclusively.

**EVA-TONE SOUNDSHEETS  
PRESSING (flexible discs only)**  
4801 Ulmerton Road, Clearwater, FL 33520  
(813) 577-7000  
Contact: Jack Miller, Sales Mgr

**EXECUTIVE RECORDING LTD.  
MASTERING**  
300 W. 55th St., New York, N.Y. 10019  
(212) 247-7434  
Contact: Gene Sayet, Chief Engineer.

**THE EXXEL COMPANY  
TAPE DUPLICATION**  
1907 Apple St., Oceanside, CA 92054  
250 West 34th St., Suite 2131, New York N.Y. 10119  
Oceanside: (213) 439-3020; New York: (212) 695-0006  
Contact: Bill Kottcamp in Oceanside, Manager, Richard Burke in New York, Account Mgr

**FRANKFORD/WAYNE MASTERING LABS, INC.  
MASTERING & PRESSING**  
1697 Broadway, Suite 1404, New York, N.Y. 10019  
(212) 582-5473

Contact: Norvell Miller (Ms.), General Mgr  
**MASTERING**  
Cutting lathes: Ranstele, Scully, Capps, Block-Sontec "CompuDisk" (total of 7 lathes)  
Console: Ransteel Custom  
Tape machines: MCI JH-110M, Scully, Ampex ATR  
Monitor speakers: JBL 4350 (6), JBL 4343 (2), JBL 4330 (6), JBL 4311 (6); Big Reds (2), Auratone (4); ROR (4)  
**Signal processing:** Ranstele, Sontec, UREI, Orban  
**Engineers:** Dom Romeo, Tom Coyne, Herb Powers, Jr., Tom Steele, Sally Hughes, Charlene Singleton, Dave Crawford, plus 3 freelance engineers.  
**Rates:** Client Attendance: \$90 to \$160/hr; LP Masters: \$95/side; 45 Masters: \$40/side; Disco Masters: \$75/side; LP Refs: \$95; 45 Refs: \$40; Disco Refs: \$50  
**Credits:** Kool and The Gang, Melba Moore, Michael Henderson, Rupert Holmes, Fatback Band, Patti Labelle, George Thorogood, Grover Washington Jr., plus approximately 1/2 the weekly Billboard Disco Chart singles.  
**Other services:** Digital to analog transfers (any format), 1/2" 2 track, direct to disc, package pressings.

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**FRANKFORD/WAYNE MASTERING LABS, INC.**  
**MASTERING & PRESSING**  
134 N. 12th St., Philadelphia, PA 19107  
(215) 961-1794

Contact: Lynn Steele, General Mgr  
**MASTERING (3 rooms)**

**Cutting lathes:** (3) Scully lathes-computer controlled with Westrex/Ranstele cutting systems  
**Console:** Ranstele Audio with full equalization and limiter facilities by UREI and Sontec  
**Tape machines:** MCI, Ampex, 3M, Technics (all 2 track), MCI 1/2" 2 track

**Monitor speakers:** JBL 4330, Altec-Mastering Lab "Big Reds"  
**Signal processing:** Ampex ADD-1, UREI graphic and parametric EQ, Sontec limiters and EQ  
**Engineers:** Nimit Sarkananda, Tom Steele  
**Rates:** LP Masters \$95/side, 45 Masters \$40/side, LP Reels D/F \$95, 45 Reels D/F \$40, Disco Masters \$75/side, Disco D/F Reels \$50 All services including client attendance at \$90/hr  
**Credits:** "The Sound Of Philadelphia" Teddy Pendergrass, Path Labelle, Lou Rawls, Temptations, Stylistics, Harold Melvin, etc.  
**Other services:** Complete package pressing service-LPs and singles. Digital transfers-any format, 1/2" 2 track, direct to disc

**MASTER CUTTING ROOM**  
**MASTERING**

321 W. 44th St., New York, N.Y. 10036  
(212) 581-6505

Contact: Randi Greenstein, Traffic Mgr

**MASTERDISK CORPORATION**  
**MASTERING**

16 West 61st St., New York, N.Y. 10023  
(212) 541-5022

Contact: Douglas Levine, General Mgr

**MASTERING**

**Cutting lathes:** Neumann VMS 70's w/SX74 heads  
**Console:** (3) Neumann consoles  
**Tape machines:** (4) Studer A80's  
**Monitor speakers:** Mark Levinson System UREI Time-Aligns, Altec 904's, JBL's  
**Signal processing:** EMT/NTP compressors, Sontec/Neumann equalizers

**Engineers:** Robert Ludwig (chief), Howie Weinberg, Bill Kipper, Alan Moy  
**Credits:** Rolling Stones, Meatloaf, Hall & Oats, Journey, Rush, Kinks, Spyro Gyra, Ian Hunter, ZZ Top, Def Leppard, ARS, Triumph, Fleetwood Mac  
**Other services:** Digital 1/2", 1/2 speed mastering and tandem mastering

**PETER PAN INDUSTRIES**  
**PRESSING**

88 St. Francis St., Newark, N.J. 07105  
(201) 344-4214

Contact: Vincent Fusco, Custom Sales Mgr

**PRC RECORDING COMPANY**  
**PRESSING & TAPE DUPLICATION**

1185 Avenue of the Americas, New York, N.Y. 10036  
(212) 997-1250

Contact: David Grant, V.P. & Sales Director

**QUIK CASSETTE CORPORATION**  
**TAPE DUPLICATION**

250 West 57 St., New York, N.Y. 10019  
(212) 977-4511

Contact: Mark Milchman, V.P./Engineer

**RECORDED PUBLICATIONS LABORATORIES**  
**MASTERING & TAPE DUPLICATION**

1100 State St., Camden, N.J. 08105  
(609) 963-3000

Contact: Pat Landon, Sales Mgr

**RGH RECORD MANUFACTURING CORP.**  
**MASTERING & PRESSING**

750 Eighth Ave., New York, N.Y. 10036  
(212) 354-4336

Contact: George Srolovits, President

**SOUND-ARTS COMPANY, INC.**  
**TAPE DUPLICATION**

5 Cindy Lane, Oakhurst, N.J. 07755  
(201) 493-8666

Contact: Frank Gspann, V.P.

**SPECTRUM FIDELITY MAGNETICS**  
**TAPE DUPLICATION**

49 Glenwood Ave., Lancaster, PA 17602  
(717) 295-9275

Contact: John Yoder, General Mgr

# TAPE TO DISK

## LISTINGS OF MASTERING, PRESSING AND TAPE DUPLICATION FACILITIES THROUGHOUT THE UNITED STATES.

### TAPE DUPLICATION

**Duplicator:** (6) Audiotek duplicators  
**Capacity:** 30,000/wk  
**Method of duplication:** 1" bin loop  
**Mastering equipment:** Inovonics/Ampex 1" 8 track, can handle any noise reduction  
**Tape used:** BASF  
**Shell used:** Trans-Am and Loranger  
**Duplicating speed:** 32:1 64:1  
**Type of loading:** Electrosound  
**Packaging availability/etc. Yes**  
**Rates:** Call for prices  
**Other services:** Drop-shipping and custom order fulfillment, on-site production

### STERLING SOUND INC

**MASTERING**  
1790 Broadway, New York, N.Y. 10019  
(212) 757-8519

Contact: John Kubick, Studio Mgr

### SUNSHINE SOUND

**MASTERING**  
1650 Broadway, New York, N.Y. 10019  
(212) 582-6227

Contact: Frank J. Trunarro, President

**TRUTONE RECORDS**  
**MASTERING & PRESSING**

163 Terrace St., Haworth, N.J. 07641  
(201) 385-0940

Contact: Adrienne Rowatt, Production Coordinator

**VIRTUE RECORDING**  
**MASTERING & PRESSING**

1618 N. Broad St., Philadelphia, PA 19121  
(215) 763-2825

Contact: Frank Virtue, President

# Central

### AMERICAN SOUND CORPORATION

**TAPE DUPLICATION**  
25133 Thomas Drive, Warren, MI 48091  
(313) 539-2900

Contact: Don Armstrong, Sales Mgr.

### TAPE DUPLICATION

**Duplicator:** Gauss & Electro Sound.  
**Capacity:** 70,000/per day (cassettes) 3 locations American Sound Detroit, MI, Atlanta, GA, West American Sound, N. Hollywood, CA  
**Method of duplication:** Bin loop  
**Mastering equipment:** 3M & Scully  
**Tape used:** Capitol  
**Shell used:** Lenco  
**Duplicating speed:** 16:1, 32:1, 64:1  
**Type of loading:** Automatic King Winder  
**Packaging availability/etc. All configurations**  
**Rates:** Quoted per job  
**Other services:** Reel to reel, 8 track, drop shipment, editing, pulsing and print on cassette.

**A&R RECORD & TAPE MANUFACTURING**  
**MASTERING, PRESSING & TAPE DUPLICATION**

902 No. Industrial Blvd., Dallas, TX 75207  
(214) 741-2027

Contact: Vera McGrew, V.P.

### MASTERING

**Cutting lathes:** Neumann VMS-70.  
**Console:** Automated Processes w/EMT & Gotham parametric EQ, Sontec parametric EQ  
**Tape machines:** Studer A-80 (3)  
**Monitor speakers:** JBL  
**Signal processing:** EMT 930ST, Pulse duration com-

pressor/limiter.

**Engineers:** Dick McGrew

**Rates:** Call for rates

**Credits:** Broadcast, ad agencies, syndicated productions

**Other services:** Pressing, tape duplicating (cassette and 8 track)

### PRESSING

**Presses:** (7) Lened fully automated for 7" & 12" production.

**Capacity:** High quality runs up to 10,000 pieces

**Vinyl used:** Keycor Century, Teldec on request (optional).

**Rates:** Call for rates. Rate card and samples will be mailed

**Credits:** US Air Force, Bonneville Productions, So Baptist radio & TV Comm., Jam Productions, TM Productions

**Other services:** Mastering & tape duplication for cassette and 8 track, album cover printing and assembly.

### TAPE DUPLICATION

**Duplicator:** Otan DP6000 w/10 slaves  
**Capacity:** 600 C-60 tapes per hour  
**Method of duplication:** Bin loop  
**Mastering equipment:** (Same equipment as mastering), w/additional Dolby  
**Tape used:** AGFA  
**Shell used:** 5 screw import shell  
**Duplicating speed:** 240 inches per second bin Slaves at 60 per sec.  
**Type of loading:** King loaders  
**Packaging availability/etc. Boxes, inserts, shrink film**  
**Rates:** Call for rates & samples.  
**Other services:** Blank cassette available as well as mastering, pressing, album cover printing and assembly.

### AUDIO MIXERS RECORDING COMPANY, INC.

**TAPE DUPLICATION**  
740 N. Rush St., Chicago, IL 60611  
(312) 943-4274

Contact: B. Berg, Production Mgr

### CENTURY SOUND & SLIDE

**TAPE DUPLICATION**  
1018 Busse Highway, Park Ridge, IL 60068  
(312) 696-0675

Contact: Allen J. Tallman, Owner

**CUSTOM TAPE DUPLICATORS, INC.**  
**TAPE DUPLICATION**

341 Hill Ave., Nashville, TN 37210  
(615) 256-1728

Contact: Cliff Tant, President

**ELEPHANT RECORDING STUDIOS**  
**MASTERING & TAPE DUPLICATION**

21206 Gratiot Ave., East Detroit, MI 48021  
(313) 773-9386

Contact: John Gaier, Al Abood, Owners

### GENESIS RECORDING, INC.

**TAPE DUPLICATION**  
645 N. St. Clair, Chicago, IL 60611  
(312) 649-5711

Contact: Larry Root, President, Casey Kurylo, Production Mgr

### INDEPENDENT PRODUCERS CORP.

**TAPE DUPLICATION**  
1609 McGavock St., Nashville, TN 37203  
(615) 244-4236

Contact: Jerry Moore, General Mgr.

**INDUSTRIAL AUDIO/FILM SERVICES**  
**TAPE DUPLICATION**

6228 Oakton, Morton Grove, IL 60053  
(312) 965-8400

Contact: Lauren Leifer, Exec. V.P.

**JEWEL RECORDING/IRC ALBUM PROD.**  
**MASTERING & PRESSING**

1594 Kinney Ave., Cincinnati, OH 45231  
(513) 522-9336

Contact: Rusty York, Owner.

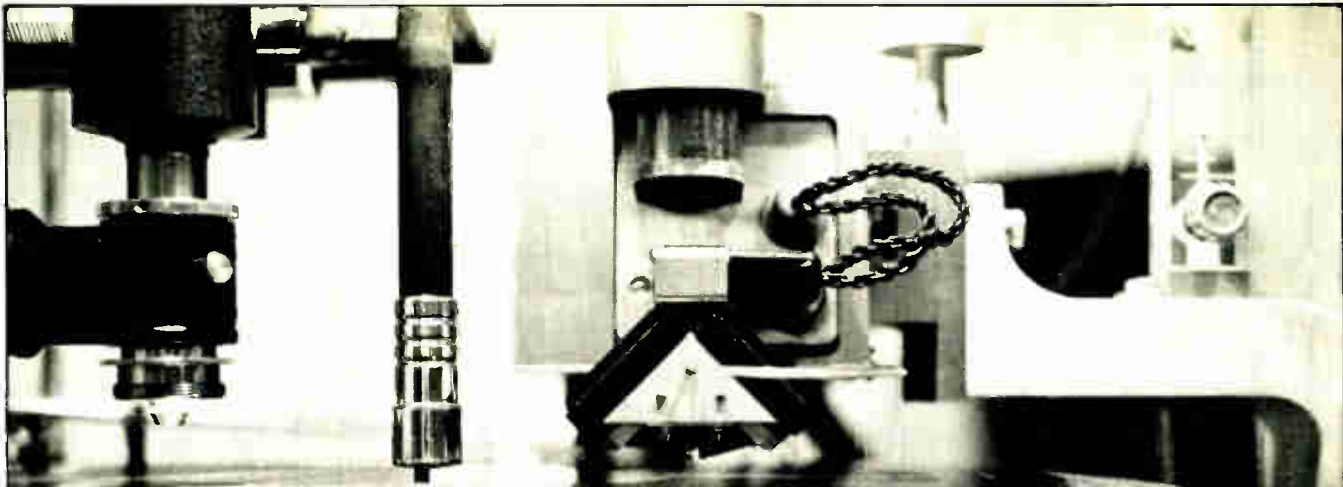
### PRESSING

**Presses:** SMT, Lened  
**Capacity:** 6,000 per day  
**Vinyl used:** 100% pure Keycor Century  
**Rates:** Available on request  
**Credits:** P.R.C. Recording and others  
**Other services:** Recording & mastering facilities. We pride ourselves in quality with fast delivery (25 working days)

### JOEY RECORDS INC.

**MASTERING, PRESSING & TAPE DUPLICATION**  
6703 W. Commerce, San Antonio, TX 78227  
(512) 432-7893

Contact: Joey Lopez, President



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RUSH  
IAN HUNTER  
Z.Z.TOP  
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masterdisk 16 West 61st Street N.Y., N.Y. 10023 (212) 541-5022



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As Northern California's largest independent tape duplicator with latest state-of-the-art equipment, experienced service representatives and a convenient South Bay location, we are qualified to handle any cassette production job... quickly, accurately, and cost-effectively.

Let Westape help you develop a complete cassette program including recording studio services, graphic-arts production of labels, duplication and final custom packaging. Premium blank-loaded cassettes are available from Westape, too.

Call us at (408) 379-0870 for a brochure and price schedule. You just may find that Westape is precisely the audio cassette duplication service you've been looking for.

# Westape

Audio Production / Tape Duplication

503-C Vandell Way / Campbell, CA 95008  
(408) 379-0870

**K&R RECORDING**  
**TAPE DUPLICATION**  
29111 Greenfield, Southfield, MI 48076  
(313) 557-8276 or 574-2080  
Contact: Pat

**MASTERCRAFT RECORDING CORP.**  
**MASTERING**  
437 N. Cleveland St., Memphis, TN 38104  
(901) 274-2100  
Contact: James Craft, Mgr

**MASTERFONICS**  
**PRESSING**  
28 Music Square East, Nashville, TN 37203  
(615) 327-4533  
Contact: Ruth Proffer, Studio Mgr  
**MASTERING**  
Cutting lathes: Room 1: (2) Neumann VMS-70 operated by Zuma computer, SAL74 amplifiers, SX74 cutter heads. Room 2 Scully lathes w/Capps computer, Westrex 3DIIAH cutter head, Westrex RA1700B amplifiers  
Console: Room 1 Neumann SP75 Room 2 Neumann SP72.  
Tape machines: Room 1 Studer A80 preview machine; Studer A80R and B67 copy machines (2 track).  
Monitor speakers: Room 1 Modified Westlake TM-1's w/TAD drivers Room 2 John Gardner cabinets w/JBL woofers and TAD high-frequency drivers  
Signal processing: Custom-built EQ by Bill Isenburg; Sontec parametric EQ, Audionics 4-band EQ; API 550A EQ; Neve stereo compressor/limiters  
Engineers: Glenn Meadows, Jim Loyd, Brian Burr, Al Smith  
Rates: Please call for rates  
Other services: Ampex ATR-102 1/2" 2 track for rent. Master Technologies offers JVC Series 90 digital 2 rack rental, editing and mastering. Call Masterfonics for details

**MOTHER DUBBERS INC.**  
**TAPE DUPLICATION**  
13626 Gamma, Dallas, TX 75234  
(214) 980-4840  
Contact: Arnett Peel, President  
**MASTERING**  
Console: Tapco EV 12 x 4 x 2 x 1  
Tape machines: Ampex 440, Crown Pro 800 2-track, Revox A77, TEAC A-7300.  
Monitor speakers: ADS 810's  
Signal processing: UREI LA-3A, Crown EQII, dbx 157, UREI 565  
Engineers: Russell Smith, Rebecca Ratliff, Paul Jolly, Arnett Peel  
Rates: \$40/hr studio mastering, \$25/hr editing  
**TAPE DUPLICATION**  
Duplicator (Mfg. and quantity): Infonics .2 C 60 on a pass (3 minutes), Magnafax bin loop  
Capacity: How many would you like? We'll meet your deadline!  
Method of duplication: In cassette & bin loop  
Mastering equipment: Ampex, Crown, Revox, UREI, dbx  
Tape used: Agfa PE 611, 811 for music and Mag Media for voice  
Shell used: Magnetic Media  
Duplicating speed: In cassette, 10 1, bin loop, 45:1.  
Type of loading: Automatic King model 770's  
Packaging availability/etc. Labeling, cassette binders, Poly & Norelco boxes, shrink wrapping—full packaging service available  
Rates: Call (214) 980-4840 and ask for A. PEEL

**NASHVILLE RECORD PRODUCTIONS, INC.**  
**MASTERING, PRESSING & TAPE DUPLICATION**  
469 Chestnut St., Nashville, TN 37203  
(615) 259-4200  
Contact: George Ingram, Co owner  
**MASTERING**  
Cutting lathes: Neumann & Capps computer two  
Console: Sphere & Neve  
Tape machines: Studer & MCI  
Monitor speakers: Super Reds & Electro-Voice Sentry 3's  
Signal processing: Parametric & graphic EQ, reverb, limiting/compressor  
Engineers: Glen Bullard, Chief Engineer, John Eberle, Studio Mgr., Doug Lawrence, Engineer  
Rates: \$80/per side, 12", \$30/per side, 7"  
Credits: Sha na na, Tupperware, American Airlines, U.S. Govt., PSA, Sperry New Holland, Drivers, Bill Anderson  
Other services: Editing, reference acetate, 1/2 speed cutting, tape duplication, album packaging  
**PRESSING**  
Presses: (24) Southern Machine & Tool automatics, LP's and 45's  
Capacity: 1,000,000 per month  
Vinyl used: Lenahan  
Rates: 57 LP's, 26 45's, large runs per quote  
Credits: Same as mastering.  
Other services: Same as listed above, printing record labels.

# TAPE TO DISK

## LISTINGS OF MASTERING, PRESSING AND TAPE DUPLICATION FACILITIES THROUGHOUT THE UNITED STATES.

**PRC RECORDING COMPANY**  
**PRESSING & TAPE DUPLICATION**  
Richmond, IN, New York, N.Y.; Compton, CA.  
(212) 997-1250  
Contact: David Grant, V.P. Sales.  
**PRESSING**  
Presses: Hamilton, SMT, Lened  
Capacity: 12" - 200,000 per day; 7" - 225,000 per day  
Vinyl used: Keycor, Borden, Vitec  
Other services: Special packaging, picture discs, R/A's, mail order fulfillment  
**TAPE DUPLICATION**  
Duplicator: Gauss, ElectroSound  
Capacity: 45,000 units per day.  
Method of duplication: Bin loop  
Mastering equipment: MCI, Ampex, Scully  
Tape used: BASF, AGFA, Capitol  
Duplicating speed: 32 1, 64 1  
Type of loading: King  
Packaging availability/etc. Full cassette or 8 track  
Other services: Imprinted and paper labels, special packaging.

**PROGRAMMING TECHNOLOGIES, INC.**  
**TAPE DUPLICATION**  
6666 N. Lincoln Ave., Lincolnwood, IL 60645  
(312) 676-9400  
Contact: Steve Sorokin, Sales Mgr.

**Q.C.A. CUSTOM PRESSING**  
**MASTERING, PRESSING & TAPE DUPLICATION**  
2832 Spring Grove Ave., Cincinnati, OH 45225  
(513) 681-8400  
Contact: Keith Myers, Sales Mgr

**RAINBOW RECORD PRESSING**  
**MASTERING, PRESSING & TAPE DUPLICATION**  
2721 Irving Blvd., Dallas, TX 75207  
(214) 630-6401  
Contact: Phil Kalan, General Mgr

**RANDY'S ROOST**  
**MASTERING & PRESSING**  
30 Music Square W., Nashville, TN 37203  
1 (615) 254-8825  
Contact: Randy Kling, Owner  
**MASTERING**  
Cutting lathes: Neumann VMS 70/SX-74  
Console: Rack is custom built by RCA  
Tape machines: Studer A-80 MKII, Studer B-67 & B-77  
Monitor speakers: Lockwood Universal Majors, Auratones  
Signal processing: Neve 2087 EQ, Neve limiter/compressor, EMT 156, PDM compressor, Pultec HLF-3C, Pultec EQP-1A  
Engineers: Randy Kling  
Rates: Available upon request  
Credits: John Denver, Elvis Presley, Roger Whittaker, Chet Atkins, Les Paul, Waylon Jennings  
Other services: Studer 1/2" mastering  
**PRESSING**  
Presses: Swedish Alphas, British EMI's  
Capacity: 450,000/wk on 7", 850,000/wk on LP's  
Vinyl used: Special compound  
Rates: Available upon request  
**TAPE DUPLICATION**  
Info available upon request

**RITE RECORD PRODUCTIONS, INC.**  
**MASTERING, PRESSING & TAPE DUPLICATION**  
9745 Mangham Drive, Cincinnati, OH 45215  
(513) 733-5533  
Contact: Phil Burkhardt, President

**RON ROSE PRODUCTIONS/RECORDING STUDIO**  
**TAPE DUPLICATION**  
29277 Southfield, Southfield, MI 48076  
(313) 424-8400  
Contact: Duplication Dept.  
**TAPE DUPLICATION**  
Duplicator: Telex, Magnafax

Capacity: 3,000 C-60 per day, 2,500 reel to reels per day (3 min)  
Method of duplication: In cassette, bin loop and reel to reel  
Mastering equipment: MCI  
Tape used: Ampex 456,  
Method of duplication: In cassette, bin loop and reel to reel  
Mastering equipment: MCI  
Tape used: Ampex 456, AGFA 526, Scotch 226 & 176  
Shell used: Mag Media, Kync  
Type of loading: Two King loaders  
Packaging availability/etc. Labeling, boxing, expeditly  
Rates: Call  
Other services: Computerized expediting

**SOUND OF NASHVILLE, INC.**  
**MASTERING, PRESSING & TAPE DUPLICATION**  
305-11th Ave. S., Nashville, TN 37203-4086  
(615) 244-1124  
Contact: John Ivanits, President.

**SOUND STUDIOS**  
(SilverWind™ Division)  
**MASTERING, PRESSING & TAPE DUPLICATION**  
230 N. Michigan Ave., Chicago, IL 60601  
(312) 853-0550  
Contact: Art Meiselman, V.P. & Exec Producer  
**MASTERING**  
Cutting lathes: Neumann  
Console: Neumann  
Tape machines: Ampex/Scully  
Monitor speakers: Century II  
Signal processing: Westrex  
Engineers: Verner Ruvalds; Doug Brand, Chief  
Rates: Call for rate guide  
Credits: Chico Hamilton, Milli Torme  
**PRESSING**  
Presses: Lenahan (4)  
Vinyl used: Teldak  
Rates: Call for rate guide.  
Credits: Chico Hamilton, Milli Torme  
Other services: Album printing & fabrication New music Label:  
SilverWind™ Records & Tapes  
**TAPE DUPLICATION (Quantitape™ Division)**  
Duplicator: MTI System III & Otari  
Method of duplication: In cassette and bin loop  
Mastering equipment: Neve, Ampex, Scully, dbx  
Tape used: AGFA  
Shell used: Lenco and Data Pack  
Duplicating speed: 64 1, 32 1 (music)  
Type of loading: King automated  
Packaging availability/etc. Complete services available  
Rates: Call for rate guide.  
Other services: 24 hour rush, premium services

**SOUTHERN AMERICAN RECORD PRESSING CO., INC.**  
**MASTERING, PRESSING & TAPE DUPLICATION**  
305-11th Ave. S., Nashville, TN 37203-4086  
(615) 256-2521  
Contact: John Ivanits, President

**SPECIAL RECORDINGS, INC.**  
**TAPE DUPLICATION**  
3020-26 East Grand Blvd., Detroit, MI 48202  
(313) 873-4655  
Contact: Anthony Cammita, V.P. & General Mgr

**SUMA RECORDING STUDIO**  
**MASTERING & TAPE DUPLICATION**  
5706 Vrooman Road, Cleveland, OH 44077  
(216) 951-3955  
Contact: Michael Bishop, Mastering Engineer.

**WOODLAND MASTERING**  
**MASTERING**  
1011 Woodland St., Nashville, TN 37206  
(615) 227-5027  
Contact: Glenn Snoddy, President

# Western

**ALSHIRE INTERNATIONAL**  
**MASTERING & PRESSING**  
1015 Isabel Street, Burbank, CA 91506  
(213) 849-4671  
Contact: Dick Ceya, Bill Riley

**AUDIO ENGINEERING ASSOCIATES**  
MASTERING, PRESSING & TAPE DUPLICATION  
1029 N. Allen Ave., Pasadena, CA 91104  
(213) 798-9127  
Contact: Ron Streicher, Sara Beebe, General Mgr

**AUDIO-VIDEO CRAFT, INC.**  
TAPE DUPLICATION  
7710 Melrose Ave., Los Angeles, CA 90046  
(213) 655-3511  
Contact: Marti Hamstn, Engineer

**THE AUTOMATT**  
MASTERING  
829 Folsom Street, San Francisco, CA 94107  
(415) 777-4111  
Contact: Paul Stubblebine & Michelle Meisner, Mastering Engineers

**MASTERING**  
Cutting lathes: Scully/Westrex  
Console: CBS  
Tape machines: MCI  
Monitor speakers: UREI 813, JBL 4311, Auratone, John Meyer, Rogers LS3/5A  
Signal processing: All types available  
Engineers: Paul Stubblebine, Michelle Meisner  
Rates: Available upon request  
Credits: Herbie Hancock, Blue Oyster Cult, Con Funk Shun, James Brown, Peter Rowen, Carlos Santana, Romeo Void, Humans  
Other services: Direct to disc from any of our three state-of-the-art studios

**AWARD RECORD MFG., INC.**  
MASTERING & PRESSING  
11016 La Cienga Blvd., Inglewood, CA 90304  
(213) 645-2281  
Contact: Marty Amsoorian  
PRESSING  
Presses (Mfg. and quantity): (4) Lined automatic presses  
Capacity: 14,000 per day  
Vinyl used: Pure virgin vinyl  
Rates: Call for rates  
Credits: Concord Jazz, New Life, Sonic Arts, Creative World, Manna Music, Mark 56 and others  
Other services: Mastering and matrix, printing and packaging

**BONNEVILLE PRODUCTIONS**  
TAPE DUPLICATION  
130 Social Hall Ave., Salt Lake City, UT 84111  
(801) 237-2400  
Contact: Dave Jenkins

**BRANDT'S RECORDING STUDIOS**  
TAPE DUPLICATION  
1030-48th Street, Sacramento, CA 95819  
(916) 451-3400 or 451-7794  
Contact: Charles M. Brandt, Recording Engineer & Owner

**BUZZY'S RECORDING SERVICES**  
TAPE DUPLICATION  
6900 Melrose Ave., Los Angeles, CA 90038  
(213) 931-1867  
Contact: Traffic Mgr.

**CAPITOL RECORDS INC.**  
MASTERING  
1750 No. Vine St., Hollywood, CA 90028  
(213) 462-6252  
Contact: Barbara Hein, Office Mgr  
MASTERING  
Cutting lathes: (2) Neumann VMS 70/SAL74 with Zuma computer; (2) Scully w/Westrex heads  
Console: Modified Neve w/Jensen 990 electronics and Sontec EQ  
Tape machines: Studer A-80 mastering machines with 990 electronics.  
Monitor speakers: Custom JBL  
Signal processing: Haeco CSG, choice of eight echo chambers, outboard gear.  
Engineers: Ken Perry, Wally Travogott, Gene Thompson, John Lemay  
Credits: Fleetwood Mac "Rumours," "Tusk"; Smokey Robinson "Beign With You"; Bob Seger "Nine Tonight"  
Other services: 1/2" Studer program and preview mastering head, digital mastering, direct to disc available, butterfly head.

**CHATEAU EAST SOUND PRODUCTIONS MFG.**  
PRESSING  
1040 N. Grove St., Suite R, Anaheim, CA 92806  
(714) 630-0145  
Contact: Wally Younger, Owner

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Low Noise with Harmonic Transparency.

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**Phoenix, Arizona 85002**

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Philadelphia, Pa. 19123  
212-966-3185  
and  
215-627-2277



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### SONIK ARTS CORP. MASTERING ROOM

665 Harrison San Francisco, CA 94107  
Call Penny for Apt. at  
**415-781-6306**

## TAPE TO DISK

LISTINGS OF MASTERING,  
PRESSING AND TAPE  
DUPLICATION FACILITIES  
THROUGHOUT THE  
UNITED STATES.

**THE CREATIVE WORD**  
TAPE DUPLICATION  
17885 B-2 Sky Park Circle, Irvine, CA 92714  
(714) 549-0138  
Contact: Bryan Hill, President

**DAVKORE COMPANY**  
TAPE DUPLICATION  
510 S. Murphy Ave., Sunnyvale, CA 94086  
(408) 739-7265  
Contact: Chris Webber, Operations Mgr

**DCT RECORDERS**  
TAPE DUPLICATION  
6414 Sunset Blvd., Hollywood, CA 90028  
(213) 461-2841  
Contact: John Taglieri, Studio Mgr

**FANTASY STUDIOS MASTERING**  
MASTERING  
10th and Parker, Berkeley, CA 90028  
(415) 549-2500  
Contact: Andrea Salter, George Horn

**MASTERING**  
Cutting lathes: Neumann mastering system utilizing the Zuma audio computer  
Rates: LP lacquers \$105/side, 45 lacquers: \$35/side, mastering room run down and EQ: \$85/hr.  
Other services: Mastering from Mitsubishi digital master tapes

**FIFTY FOUR EAST SOUND RECORDERS**  
TAPE DUPLICATION  
54 East Colorado Blvd., Pasadena, CA 91105  
(213) 356-9308 or 681-5903  
Contact: Russ, Manager

**GOLD STAR RECORDING STUDIOS, INC.**  
MASTERING, PRESSING & TAPE DUPLICATION  
6252 Santa Monica Blvd., Hollywood, CA 90038  
(213) 469-1173

**MASTERING**  
Cutting lathes: Neumann.  
Console: Custom Gold Star console.  
Tape machines: Ampex ATR-100, Scully 280B.  
Monitor speakers: Altec 604E.  
Signal processing: Vanous EQ, limiters, compressors, etc  
Engineers: Dave Gold, Stan Ross, Ed Epstein  
Rates: Call for rates  
Other services: Cassette duplication, 45 and LP pressing and packaging

**GRD REAL TIME DUPLICATION**  
TAPE DUPLICATION  
P.O. Box 13054, Phoenix, AZ 85002  
(602) 252-0077  
Contact: Lav Singh, Manager

**TAPE DUPLICATION**  
Duplicator (Mfg. and quantity): Aiwa Models 3600 dual capstan, three head  
Capacity: Orders from 10 to 10,000, super high quality cassettes  
Method of duplication: Real Time, 2 track 15 ips or 7 1/2 ips master  
Mastering equipment: Otari MX5050B, dbx, Dolby, AKG reverb, UREI limiter  
Tape used: Agfa 611, 619 & high bias chrome 613, TDK Metal MA C-60  
Shell used: Mag Media, screw type with silicone liners.  
Duplicating speed: Real Time 1 1/4" per second.  
Type of loading: Custom lengths made with Audico 751  
Packaging availability/etc. 5 color inserts, labels, shrink, full assembly  
Rates: (1,000 or more) C-15 \$0.93, C-30 \$1.01; C-45 \$1.07, C-60 \$1.15 Three test tapes supplied at no extra cost. Mastering \$40.00  
Other services: Now available Dolby B, Dolby C, Dolby HX, dbx encoded tapes, drop shipping, cassette displays. High-speed duplicating for voice. We specialize in audiophile quality at a reasonable price.

**GREAT TAPES NORTHWEST**  
TAPE DUPLICATION  
5722 Swan Creek Dr. E., Tacoma, WA 98404  
(206) 472-2740  
Contact: Dean K Hart, Manager

**HI SPEED TAPE DUPLICATING & SUPPLY CO.**  
TAPE DUPLICATION  
940 Howard St., San Francisco, CA 94103  
(415) 543-7393  
Contact: Michael Baird, Production Mgr

**H.R. PRODUCTIONS**  
MASTERING & PRESSING  
3099 Diablo View Rd., Lafayette, CA 94549  
(415) 930-7573  
Contact: Hillel Resner  
**PRESSING**  
Credits: Steve Seskin, Andrew Stern, Clareon, Starr, Glenda Roberts, Rowdy Bob Howdy, James Thornbury, Keith Smith, others.  
Other services: Complete album design, printing and packaging

**INTERNATIONAL AUTOMATED MEDIA (IAM)**  
MASTERING  
17422 Murphy Ave., Irvine, CA 92714  
(714) 751-2015  
Contact: Sue Roseharian, Traffic  
**MASTERING**  
Cutting lathes: Modified Neumann w/Technics quartz drive  
Console: Custom built (high speed/minimum elec.)  
Tape machines: Studer A-80 (modified)  
Monitor speakers: UREI 813, Auratones, JBL 4311 (avail.)  
Signal processing: Simitri Tech EQ/PSE limiter/expander/phase gate, Dolby b & dbx decoding, dbx-CX encoding (avail.), Sound Tech lathe computer  
Engineers: Richard Donaldson, Bruce Leek, Jerma Snyder  
Rates: We specialize in full and half speed audiophile cutting. Please call for rates  
Credits: Nautilus, Telarc, Shalfont, Varese Sarabande, Sefel, Warner Bros, CBS  
Other services: Recording, video, production facilities

**JVC CUTTING CENTER, INC.**  
MASTERING & PRESSING  
6363 Sunset Blvd., Suite 500, Hollywood, CA 90028  
(213) 467-1166  
Contact: Larry Boden, Chief Engineer

**KENDUN RECORDERS**  
MASTERING  
619-721 S. Glenwood Place, Burbank, CA 91506  
(213) 843-8096

**KENNETH BACON ASSOC., INC.**  
TAPE DUPLICATION  
216 Montego Key, Novato, CA 94947  
(415) 883-5041  
Contact: Ken Bacon, President/owner.  
**TAPE DUPLICATION**  
Duplicator: Otari C2-in cassette, Alpha 21 and 41-in cassette, Accurate Sound bin loop, 1/2" 4-track staggered head, 5 slaves  
Capacity: 1,500 C-60 per shift  
Method of duplication: In cassette & bin loop  
Mastering equipment: Otari MK 2-4 1/2"; (2) Otari MX 5050B; Aiwa cassette deck  
Tape used: AGFA PEM 468, PE 611, PE 619—as required by job  
Shell used: Kyrac  
Duplicating speed: 15 ips, 30 ips; 60 ips—as required by job  
Type of loading: King, Otari, Audico  
Packaging availability/etc. Yes.  
Rates: Very competitive—depending on job requirements  
Other services: Custom computer and flat sheet labels; computer feed labels for 5" and 7" reels and reel boxes; blank label stocks; blank pre-loaded cassettes, boxes; inserts, shrink wrap, mailers; equipment and supplies division sells most equipment and supplies used by professional duplications.

**KDISC MASTERING**  
MASTERING & PRESSING  
6550 Sunset Blvd., Hollywood, CA 90028  
(213) 466-1323 or 466-4455  
Contact: John Golden, Manager.

**MASTERING**  
Other services: Kdisc has 1/2 speed mastering capability

**KM RECORDS, INC.**  
MASTERING & PRESSING  
2980 N. Ontario St., Burbank, CA 91504  
(213) 841-3400  
Contact: Jim Auchterlone, Sales; Mike Malan, V.P.



# TAPE TO DISK

## LISTINGS OF MASTERING, PRESSING AND TAPE DUPLICATION FACILITIES THROUGHOUT THE UNITED STATES.

### MASTERING

Cutting lathes: Neumann VMS-70.  
 Console: Quad-Eight, custom built.  
 Tape machines: Ampex and 3M.  
 Monitor speakers: Custom built system.  
 Engineers: Dave Ellsworth, Ms. Michele Stone.  
 Rates: \$85/LP side; \$30/7" 45 side; studio time at \$70/hr.  
 Other services: Half-speed mastering, digital transfer, and direct to disk available on request.

### PRESSING

Presses (Mfg. and quantity): Toolex-Alpha (6).  
 Capacity: 75,000 per week.  
 Vinyl used: Keycor KC 600 and Teldec.  
 Rates: Upon request.  
 Other services: Full service LP record manufacturing of audiophile quality, Matrix (metal processing), typesetting, printing of labels, jacket covers, liners and jacket fabrication.

### LIGHTNING CORPORATION

TAPE DUPLICATION  
 2802 Walker Drive, San Diego, CA 92123  
 (714) 565-6494

Contact: Mike Larsen, President.

### TAPE DUPLICATION

Duplicator (Mfg. and quantity): Wollensak masters (2), slaves (9) (3 cass. ea.)  
 Capacity: 10,000 per day (C-60).  
 Method of duplication: In cassette.  
 Mastering equipment: Otari 1/2" 4 track, Ampex 2 track, BIC.  
 Superscope, Wollensak, Aiwa cass.  
 Tape used: Agfa, BASF, TM100  
 Shell used: Magnetic Media, white or black  
 Duplicating speed: 16:1 (30 ips).  
 Type of loading: King  
 Packaging availability/etc.: Boxes, albums, binders, labels, inserts, shrink wrapping.  
 Rates: C-60 \$1.30 to \$1.00, C-90 \$1.55 to \$1.25  
 Other services: Multi Media slide shows (up to 15 projectors), studio and location recording.

### MCA WHITNEY RECORDING STUDIO

MASTERING & TAPE DUPLICATION  
 1516 W. Glenoaks Blvd., Glendale, CA 91201  
 (213) 245-6801  
 Contact: Lynn R. Davids, Studio Co-ordinator.

### ML TAPE DUPLICATING

TAPE DUPLICATION  
 P.O. Box 2442, Sepulveda, CA 91343  
 (213) 988-2737  
 Contact: Bill Ball, Owner.

### PROJECT ONE A/V

MASTERING & TAPE DUPLICATION  
 1560 No. La Brea, Hollywood, CA 90028  
 (213) 464-2285  
 Contact: Dalton Priddy, Owner.

### MASTERING

Cutting lathes: Not Available.  
 Console: Modified Sound Workshop.  
 Tape machines: Ampex ATR-102 1/4" or 1/2" 2 track.  
 Monitor speakers: JBL 4313 and Auratone 5C.  
 Signal processing: Dolby A, dbx, full EQ.  
 Engineers: Dalton Priddy, Sam Holcombe.  
 Rates: Please call.  
 Credits: Polygram Record (Nick Gilder, Lionel Richie), CBS, Casablanca, Ambrosia, various advertising agencies, songwriters, artists.

Other services: Complete line of recording supplies, authorized Ampex and Agfa tape distributor, editing supplies, blank and custom length cassettes, reels & boxes, labels, index cards, etc.

### TAPE DUPLICATION

Duplicator (Mfg. and quantity): High-speed: Alpha 41 stereo, 3M Wallensak 2772 AV stereo; Otari 5 Slave stereo. Real time: Technics 1520 2 track; (20) TEAC C-1 cassette decks; (2) TEAC 3300SX 2 track, 1/4" track; Ampex 350 2 track; Ampex ATR-102.  
 Capacity: 1,000 High-speed per day; 300-800 Real time copies per day.  
 Mastering equipment: Ampex ATR-102 1/4" or 1/2" 2 track, Technics, TEAC, (20) TEAC C1 cassette decks.  
 Tape used: Agfa 611-468, Ampex 400 Series, TDK, Maxell.  
 Shell used: Ampex, TDK, Maxell, Agfa loaded into Mag Media shell.  
 Duplicating speed: High-speed: 16:1. Real time: 1 1/4 ips aud 3 1/2 ips.  
 Type of loading: King automatic.  
 Packaging availability/etc.: Custom printed cassette labels and index cards.  
 Rates: High-speed as low as \$1.00 including tape box & label. Real time as low as \$1.35 including tape box & label.  
 Other services: The most complete audio supply store in Hollywood: Agfa, Ampex, 3M-Scotch tape all widths & sizes; editing supplies; reels & boxes (blue, brown, black); cassette tape, short or custom lengths, Agfa, Ampex, TDK, Maxell.

### RAINBO RECORD MFG. CORP. AKA RAINBO RECORDS

PRESSING  
 1738 Berkeley St., Santa Monica, CA 90038  
 (213) 829-3476 or 870-5608  
 Contact: Steve Sheldon, Production Supervisor, Jack G Brown, President

### MASTERING

Work closely with all reputable mastering studios  
 Rates: 12" \$70/side, 7" 45 rpm \$37.50/side, add \$10.00 EP.  
 PRESSING

Presses (Mfg. and quantity): (20) automatic Leneds/all purchased within 3 years  
 Capacity: 50 to 75 000 per day depending on/or 7" · 10" or 12"  
 Vinyl used: Keycor KC 600, Quix 11 Vitec  
 Rates: From 100 to 10,000 7" @ 32" to 22 1/2", 12" .60" to 50"; test pressings @ \$20.00 Under 500 \$15.00 setup charge; labels 2/C \$52.00 per M 1/2 sides including type  
 Credits: Since 1939 have pressed for virtually each and every large and small label. All our services are in house colored and picture records-any shape any size.  
 Other services: Drop shipping; complete processing and printing departments

### BILL RASE PRODUCTIONS, INC.

MASTERING, PRESSING & TAPE DUPLICATION  
 955 Venture Ct., Sacramento, CA 95825  
 (916) 929-9181  
 Contact: Bill Rase, Owner.

### REAL TO REEL RECORDING & DUPLICATION

TAPE DUPLICATION  
 3064 D 1/2 Road, Grand Junction, CO 81501  
 (303) 434-3102  
 Contact: Bill Yorty, Owner/engineer.

### RECORTEC, INC.

TAPE DUPLICATION  
 475 Ellis St., Mountain View, CA 94043  
 (415) 962-0220  
 Contact: Ed Wong, Operations Mgr.  
 TAPE DUPLICATION  
 Duplicator (Mfg. and quantity): Recortec duplicator, 4 lines & 20 slaves.  
 Capacity: 20,000 day.  
 Method of duplication: Out of cassette.  
 Mastering equipment: Ampex.  
 Tape used: Various.  
 Shell used: Various  
 Duplicating speed: 32:1, 64:1.  
 Type of loading: Recortec.  
 Packaging availability/etc.: Labeling, insert and handling.  
 Other services on large projects.  
 Rates: Call for rates.  
 Other services: Computer program duplication for personal computer; manufacturer of Recortec duplicators; blank cassettes available; loading services; video tape cleaning and evaluating; 1/4" video tape loading.

### REEL TIME DUPLICATING

TAPE DUPLICATION  
 2563 S. El Camino Real, San Mateo, CA 94403  
 (415) 345-7335  
 Contact: John Wiget or Japji Singh.

### TAPE DUPLICATION

Utilizing a real time (one-to-one) format, we specialize in high-fidelity, high quality, cassette duplication. With an emphasis on cassette "pressings" of albums, singles, EP's, or musician demos, our custom designed system can process up to 10,000 copies in less than 10 days. In addition to high quality and fast turnaround, our prices are highly competitive. Also, our art department can provide complete service on printed labels and inserts. We care about your project and are committed to providing the best in service and the highest in fidelity. Please call or write for brochure and price sheet: (415) 345-REEL.



AWARD  
 RECORD MFG., INC.  
 11016 La Cienega Blvd.  
 Inglewood, CA 90304

Phone:  
 (213) 645-2281

Specializing in high  
 quality  
 production  
 and custom  
 record album  
 manufacturing

PRESSING — PROCESSING  
 PRINTING — PACKAGING

Please send me information regarding:

Record Production & Prices \_\_\_\_\_

Contract Pressing Prices \_\_\_\_\_

Our estimated  
 yearly pressing quantity is: \_\_\_\_\_

COMPANY NAME \_\_\_\_\_ PHONE \_\_\_\_\_  
 STREET \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

Send To:

AWARD RECORD MFG., INC.  
 11016 S. La Cienega Blvd., Inglewood, California 90304



## RAINBO RECORDS

1738 Berkeley Street  
Santa Monica, California 90404  
(213) 829-3476 TWX 910-343-7420

Our 42nd Year

Custom Pressing  
Completely Automated

1<sup>⊕</sup> Any Size

1<sup>⊕</sup> Any Shape

1<sup>⊕</sup> Any Quantity

1<sup>⊕</sup> Any Color

Printing

Pressing

Processing

Pricing

Phone  
(213) 829-3476

**THE REFERENCE POINT**  
MASTERING & PRESSING  
4020 W. Magnolia Blvd., Burbank, CA 91505  
(213) 845-5184  
Contact: Richard Simpson, Owner

**ROCKY MOUNTAIN RECORDING**  
MASTERING & PRESSING  
8305 Christensen Rd., Cheyenne, WY 82001  
(307) 638-8733  
Contact: Georgia Alexander, Sales

**SEACOAST RECORDING**  
TAPE DUPLICATION  
926 Turquoise St., San Diego, CA 92109  
(714) 270-7664  
Contact: Jack Elliott, Owner

**SHUR-SOUND & SIGHT, INC.**  
TAPE DUPLICATION  
3350 Scott Blvd., Bldg. 5, Santa Clara, CA 95051  
(408) 727-7620  
Contact: Glenn L. Cardon, V P  
TAPE DUPLICATION  
Duplicator (Mfg. and quantity): Electro-Sound bin loop, In-fonics  
Capacity: 70,000 units per mon  
Method of duplication: In cassette & bin loop  
Mastering equipment: Ampex AG-440, Revox A-700, Pioneer 707  
Tape used: Agfa, Ampex, BASF, 3M  
Shell used: Magnetic Media, others used upon request  
Duplicating speed: 32 l  
Type of loading: Electro-Sound automatic  
Packaging availability/etc.: Labeling, insert cards, shrink wrap, delivery  
Rates: Call for quotes  
Other services: Location recording, seminars, etc. Piece mailing real time tape duplication

**SONIC ARTS CORPORATION (The Mastering Room)**  
MASTERING, PRESSING & TAPE DUPLICATION  
665 Harrison St., San Francisco, CA 94107  
(415) 781-6306  
Contact: Leo de Gar Kulka, President  
MASTERING  
Cutting lathes: Neumann, fully automated and computerized VG66 amp w/Neumann SX cutting head  
Console: Custom  
Tape machines: Neumann, Telefunken, 3M, Inovonics  
Monitor speakers: Modified Altec 604's w/BL woofers, Stass power amplifiers  
Signal processing: Parametric and graphic EQ, Inovonics, Dolby A, and dbx noise reduction, UREI and Inovonics limiters, AKG echo chamber  
Engineers: Leo de Gar Kulka  
Rates: Call for rates  
Credits: Audiophile Digital Records, Ralph Records, DDG and Phillips, others  
Other services: Record pressing, packaging and tape duplication European pressings available

**SOUND IMPRESSIONS BY THE DAYSPRING CO.**  
TAPE DUPLICATION  
115 N. 85th, Seattle, WA 98103  
1-206-783-1844  
Contact: Tom Rhodes, Sales Mgr., Jan Allen Lind, Owner

**STANISLAUS AUDIO VISUAL**  
TAPE DUPLICATION  
1431 Kansas Ave., Modesto, CA 95351  
(209) 529-2700  
Contact: Emma Willis, Office Mgr

**STUDIO MASTERS**  
MASTERING  
8312 Beverly Blvd., Los Angeles, CA 90048  
(213) 653-1988  
Contact: Larry Wood, Exec V P

**TAI BLUE RECORD MANUFACTURING SERVICES**  
MASTERING & PRESSING  
420 So. Beverly, Suite 270, Beverly Hills, CA 90212  
(213) 277-8086  
Contact: Tai Blue, Engineer

**MASTERING**  
Cutting lathes: Scully lathe, w/modified Westrex 3D, stereo cutter head, Haeco GW120, stereo cutting amplifiers, customized Scully computerized variable pitch & depth control amplifier utilizing a new optics bucket brigade analog delay system, a Crown

## TAPE TO DISK

LISTINGS OF MASTERING,  
PRESSING AND TAPE  
DUPLICATION FACILITIES  
THROUGHOUT THE  
UNITED STATES.

DC-300 feedback monitor amplifier, and Altec monitor speakers  
Console: Custom by Scully  
Tape machines: Ampex, Sony and Akai  
Monitor speakers: Altec 604E AR14  
Signal processing: Dolby, dbx, Soundcraftsman, Toltec, UREI, Mattes pre-amp, CM Labs power amplifier, Marantz & Technics reference turntables  
Engineers: Tai Blue  
Rates: Complete manufacturing packages only From mastering to finished records 7" 45's, 7" 33's, 10" 33's, 12" 45's, 12" 33's, 10" 78's Call or write for current prices  
Credits: With 15 years of engineering trade experience, Tai Blue's clientele of major record labels include A&M, Atlantic, Bell, Buddha, Caytronics, CBS, CTI, DATE, EPIC, Harmony, Motown, RCA & Warner Bros  
Other services: Promotion and distribution of finished products to the major record labels (for artist contracts, record distribution sales, and/or song placement), top 40 (local) radio stations (direct to program directors, DJs and executives) Booking agencies for management contracts and record distributors for placement of product w/one-stops, rack jobbers and top record retail chain stores

**TAKEDA RECORD SERVICE**  
MASTERING, PRESSING & TAPE DUPLICATION  
5611 W. Washington Blvd., Los Angeles, CA 90016  
(213) 937-2347  
Contact: James Takeda, Sales & Service Consultant  
Rates: Prices available for any phase or complete packages Write or call for quotation  
Credits: We specialize in a complete packaging and pressing service We are a service oriented, quality conscious company serving you as a broker for complete mastering, processing, label printing, album front and backliner artwork, layout and composition, camera work, color separation, printing and fabrication of jackets We are your record producer's one stop service center for all your needs  
Other services: Cassette and 8 track packaging service

**THE TALKING MACHINE**  
MASTERING  
4150 West Gelding Dr., Phoenix, AZ 85023  
(602) 938-8347  
Contact: Copper or John Bittner, Engineers

**TAPE SERVICE UNLIMITED**  
TAPE DUPLICATION  
3249 Grand Ave., Oakland, CA 94610  
(415) 834-6912  
Contact: Walt Lee, Owner

**WESTAPE**  
TAPE DUPLICATION  
503-C Vandell Way, Campbell, CA 95008  
(408) 379-0870  
Contact: Bob Kratt, Owner  
TAPE DUPLICATION  
Duplicator (Mfg. and quantity): AudioTek, 9 slaves  
Capacity: 10,000 per day  
Method of duplication: 1/2" bin loop  
Mastering equipment: Soundcraft, Ampex, Nakamichi  
Tape used: Mastering Ampex, production Agfa or Ampex  
Shell used: Magnetic Media  
Duplicating speed: 32 l  
Type of loading: King 780's automatic loading  
Packaging availability/etc.: Full packaging available  
Rates: Call for rates

**ALLEN ZENTZ RECORDING**  
MASTERING  
1020 North Sycamore Ave., Hollywood, CA 90038  
(213) 851-8300  
Contact: Richie Kurse, Studio Coordinator

# Look to Lake for Pro Audio

## Consoles

Ampro/Scully  
Broadcast Electronics  
Fostex  
LPB  
Neolek  
Neve  
Panasonic/Ramsa  
Shure  
Soundcraft  
Spectra Sonics  
Tapco  
UMC  
UREI  
Yamaha

## Mixers

Industrial Research  
Products  
JBL  
RTS  
Shure  
Spectra Sonics  
Tapco  
TOA  
Yamaha

## Loudspeakers

Auratone  
BGW/Emilar  
Electro-Voice  
JBL  
Soundolier  
Tannoy  
UREI Time-Align  
Yamaha

## Reverberation & Delay Equipment

AKG  
Fostex  
Industrial Research  
Products  
Lexicon  
MXR  
Orban  
Tapco  
UREI  
Yamaha

## Tape Recorders

Ampeg  
Ampro/Scully  
Broadcast Electronics/  
Spotmaster  
Denon  
Fostex  
Otari  
Sony  
Soundcraft  
Studer/Revox  
Technics  
UMC/Beaucart

## Tape Duplicators

Otari  
Sony

## Equalizers/ Compressors/ Limiters

Audio & Design  
(Recording)  
dbx  
Eventide  
Fostex  
MXR  
Orban  
Scamp (ADR)  
Spectra Sonics  
Tapco  
Thomson/CSF  
UREI  
White  
Yamaha

## Power Amplifiers

BGW  
Crown  
JBL  
McMartin  
RTS  
Spectra Sonics  
TOA  
UREI  
Yamaha

## Microphones & Accessories

AKG  
Atlas  
Audio-Technica  
Beyer  
Crown PZM  
Electro-Voice  
HME wireless  
Luxe mike arms  
Milab  
Sennheiser  
Shure  
Sony  
Wireworks cables  
and snakes

## Headphones

AKG  
Audio-Technica  
Beyer  
Sennheiser  
Sony  
Telex

## Distribution Amplifiers

Audio & Design  
(Recording)  
Modular Audio Products  
Neve  
RTS  
Spectra Sonics  
Thomson/CSF

## Phonograph Equipment

Audio-Technica  
Denon  
Discwasher  
QRK  
Russco  
Stanton  
Technics

## Intercom- munications

Aiphone  
Bogen  
Ericsson Centrum  
Faraday/Teletalk  
Necomm  
Neve  
RTS  
Sennheiser infra-red  
TOA

## Tape (Cassette, 1/4", thru 2")

Ampeg  
Fidelipac broadcast  
cartridges  
3M/Scotch  
Sony videotape

## Test Tapes

Ampeg  
Fidelipac test cartridges  
MRL (Magnetic  
Reference Laboratory)  
STL (Standard Tape  
Laboratory)

## Tape Accessories

Ampeg head cleaner  
Annis head  
demagnetizers  
Audiolab bulk erasers  
BTX SMPTE  
synchronization  
Empty reels and boxes  
Fidelipac cartridge  
adjustment tools  
Lexicon I200  
Time Compressor  
Ruslang consoles  
VIF reel holders  
Xedit/Editall  
splicing blocks

## Audio Accessories

ADC patching  
equipment  
ESE digital clocks  
Ivie  
LSC Wired Patch Panel  
Switchcraft  
Trompeter

## Commercial & School Sound

Bogen/Tech-craft  
Soundolier  
TOA

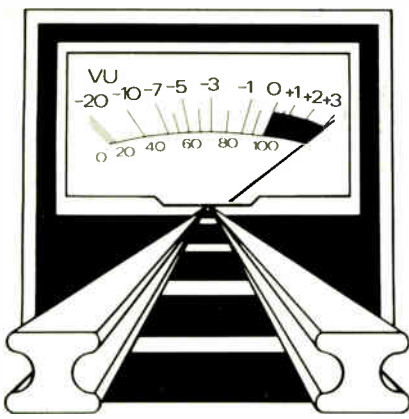
## Installation Hardware

Racks	Cable
& Cabinets	Andrew
Amco	Belden
Anvil	Columbia
ATS	Mohawk
Bud	West Penn
Emcor	
Home	
Soundolier	

**LAKE**  
LAKE SYSTEMS  
CORPORATION

55 Chapel Street  
Newton, MA 02160  
Tel: (617) 244-6881  
TWX: 710 335-1639

127 Washington Ave.  
North Haven, CT 06473  
Tel: (203) 239-4991



# Other Side of the Tracks

THE BEST OF BONZAI

An Encore Performance

# Hats Off To Layla

by Mr. Bonzai

"I love the sound of a tube limiter... it's so soft on the attack and so quick on the recovery," remarked Layla, our studio receptionist.

"I've always felt that tubes were here to stay. They give a warm feeling, like the sound is bathed in amber hues," added Smilin' Deaf Eddie, our elderly maintenance man.

Layla cooed, "You know, Eddie, nothing comforts me like a tube amp and a bottle of Lone Star."

This oddly sensual electronic patter continued for a few more moments until Eddie escorted Layla into his tech workshop and shut the door with a quick, "We've got work to do."

Recording studios are such secretive environments. There are few windows, rooms are literally isolated, and the inhabitants are separated from the rest of humanity. Eddie and Layla had been spending a lot of time together lately and I was beginning to wonder what was up. Eddie had explained to me that Layla was becoming quite a good engineer, but that she needed some special instruction in preventative maintenance. Layla had confided that she was curious about some of Eddie's old circuit designs.

It was an odd coupling, but as long as Eddie took care of the equipment and Layla ordered the tape on time, I had nothing to complain about.

As manager, I had plenty to keep me occupied. We had accounts receivable to account for, outboard gear to order, final mixes to finalize, and a new rate card to design. With the annual Audio Society of Engineers convention coming to Los Angeles, things at Ryan Recording were getting hectic.

Suddenly, Eddie and Layla burst out of the tech shed and beamed like a couple of prom queens. The truth came out of hiding.

"Mr. Bonzai, we've done it! We

can tell you all about it now," Layla exclaimed. "We've built a full-frequency, totally pro-audio monitor that's only *three inches high*."

"This little lady has challenged George Augsmeister and the entire theory of advanced transducers," testified Eddie.

Eddie and Layla explained what they really had been up to. Layla had suggested to Eddie that perhaps a speaker core could be made using an inexpensive combination of mercury, iron particles, and cubic zirconium, the diamond substitute available at leading department stores. Eddie was astounded with the simplicity of the formula and had merely added a microprocessor circuit to the novel design. By outboard programming, even the tiniest speaker could reproduce all audible frequencies and drive them to the pain threshold. The new invention was smaller than a car speaker and more powerful than a wall of Marshalls.

We began packing up our gear for the trek to the ASE convention at the LA Bilton Hotel. We looked forward to the close of the show when amateurs could present their wacky inventions and new audio devices. Layla's new speaker was sure to cause a stir at the "science fair."

When we got to the show we browsed around for a while drooling over the equipment and listening to technical barking from the sideshow salesmen.

5-X Corporation had a new delay device they called the "Slap Master." It was a component which strapped

onto the tape recorder and utilized a small, fleshy pad to actually "slap" the tape between the record and play heads, giving a tunable flutter to tape echo effects.

Eyeball Audio presented their "Technical Specs," a pair of bifocals which allowed engineers to simultaneously view the VU meters on the mixing console and the musicians in the studio. It was a nice idea, but engineers already look weird enough without giving them glasses that look like psychedelic goggles.

The most impressive new item unveiled at the show was the "De-Flatter" from Abba Dabba Labs. The "De-Flatter" was a microprocessor-based pitch controller which analyzed any singer's proclivity to flat vocalizing and continuously adjusted any variations so that the performer always sang in perfect pitch. Abba Dabba boasted of the success of their processor in the recording of the new album from Chugalug Heinz, "I Got Round." It was an awful album, but he **was** in tune.

As we were preparing for Layla's speaker demo in the listening hall a smidgeon of panic broke loose. Layla's technical papers and system diagrams were missing.

I didn't really suspect any foul play, but recording espionage is something to be wary of in these economically crunched days. The recording industry is growing faster than the automotive and fast-food industries, and as the competition gets fierce and the formats get expensive, the tactics may get nasty.

We assembled in the hall and listened to the finish of a demonstration of a new voice synthesizer invented by some students from Cal Tech. The device could make a small child sound like David Clayton Thomas. As a youngster from the audience belted out "Spinning Wheel," a large person with a strange bulbous hat sat down in front of me. The acoustics abruptly changed. I have had this happen before in clubs and concerts, but never so dramatically. I looked around and noticed that similar hulks were joining the audience, all of them wearing gigantic party hats.

Layla and Eddie went to the podium to announce their demonstration. The crowd waited patiently as she popped a cassette into her recorder and switched on her new speakers. For about thirty

seconds the volume slowly rose and just as we began to enjoy the amazing presence of these tiny wonders, all of the guys in the funny hats started twisting their heads in unison. As they nodded and bobbed, the sound from Layla's speakers went totally haywire.

There was phase cancellation, low rumbling distortion, and agonizing buildup of irritating frequencies. The crowd was grumbling and holding their ears as Layla and Eddie frantically searched for the problem. A couple of spikes went through the speakers and people began to hit the deck, wincing in pain.

I knew the guys in funny hats had something to do with the problem. I ran up to the stage and pulled the plug. I yelled for everyone to protect their ears and get ready for the real thing. Everyone obeyed and I put the plug back in. I asked Layla to go for

optimum volume.

She cranked up the knob and a tidal wave of sound pressure hit the audience. Toupees flew off, papers blew away, and the men in the bulbous party hats lost their headgear. Then the sound began to distort and the volume faded as the speakers actually melted down to little puddles of wire and metal. The invention was destroyed, the plans were missing, and we would have to wait an entire year for another convention. It was depressing, but even though the source was gone, the echo of success remained. ■

*The situations and characterizations in this column are purely fictional and do not reflect anything relating even vaguely to reality, living or dead.*

## Best Wishes for a Great '82 from the staff of Mix Publications



L to R standing: Tim Gleason, Hillel Resner, David Gans, Bruce Dancis, Mike Stevens. L to R seated: Gale Rosenberg, Debbi Russell, David Schwartz, Penny Jacob, Susan George. L to R kneeling: Mary Holland, Ellen Goldstein, Bogart.

# LEE RITENOUR

## CAPTAIN FINGERS MAKES A NAME FOR HIMSELF

by David Gans

His name may be brand-new to the pop charts, but the sound of Lee Ritenour's guitar has probably been heard more times by more people in more places than any "name" player from Les Paul to Lindsey Buckingham. At the peak of his career as a studio guitarist, Ritenour played on as many as 25 dates a week. He has been involved in movie soundtracks including *Saturday Night Fever*, *Taxi Driver*, and *The Idol Maker*; television themes and soundtracks including *Roots*, *Baretta*, and others; and albums by a tremendous variety of artists representing every kind of music you can imagine—Herbie Hancock, Barbra Streisand, Aretha Franklin, John Denver, Sonny Rollins, Peggy Lee, B.B. King, Seals and Crofts, Glen Campbell, and Debby Boone, to name just a few.

*Rit*, his third album for Elektra/Asylum (he has recorded several albums in Japan for JVC and made a couple for Epic before joining E/A), has put Ritenour into the public ear under his own name in a big way. "Is It You?", which he co-wrote with Eric Tagg (who sings it on the record) and Bill Champlin, is Ritenour's first Top Ten

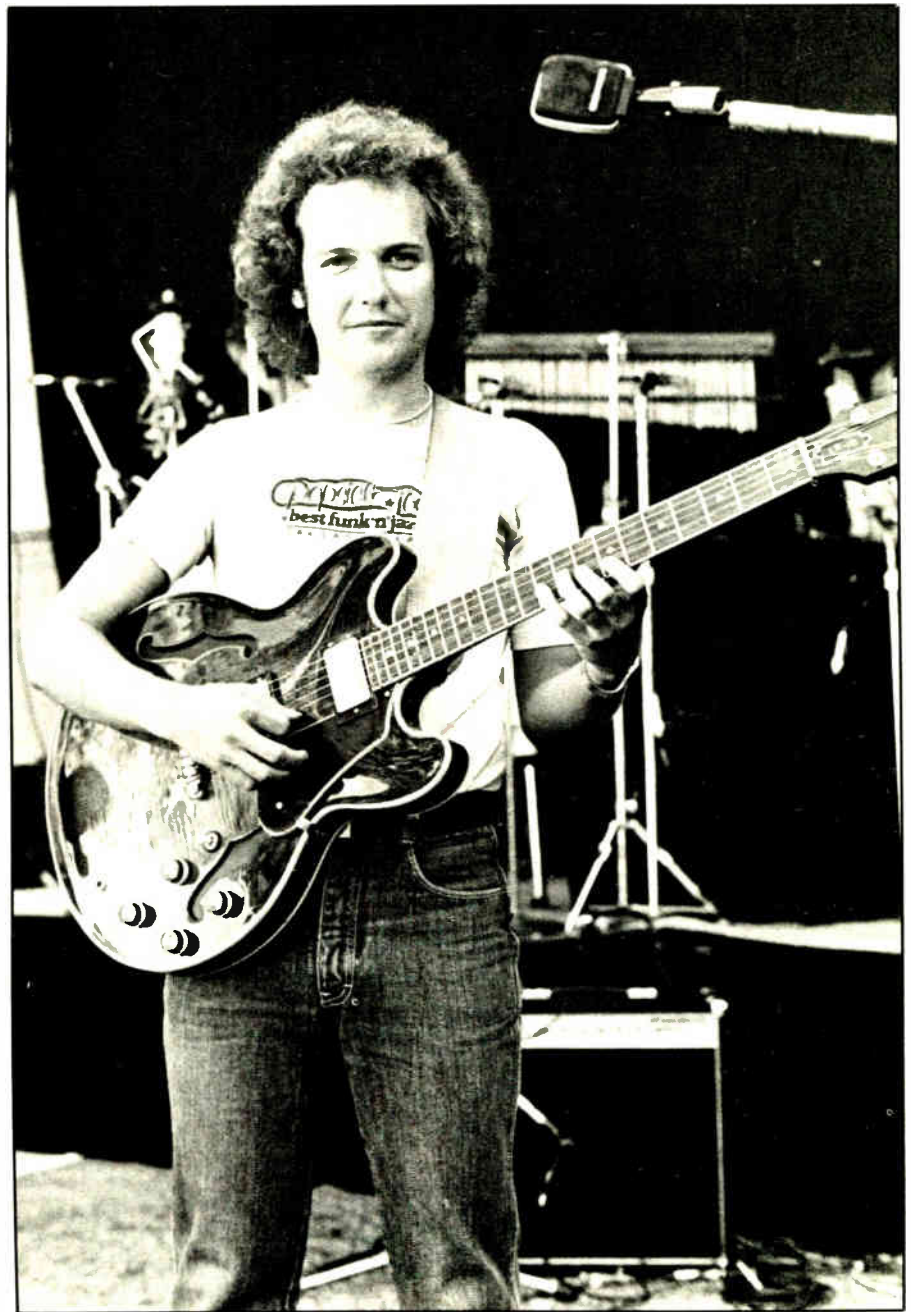


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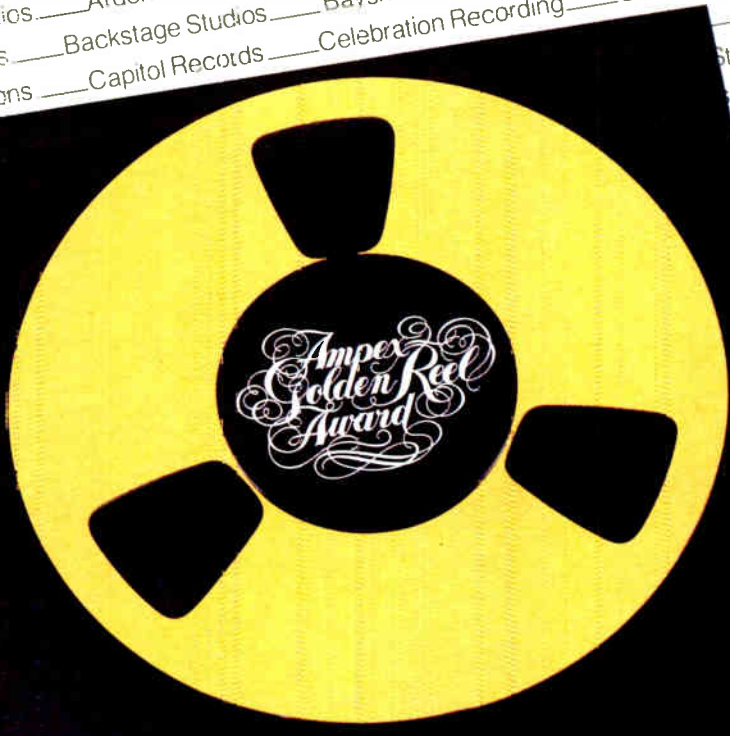
single after a decade of recording.

"When you realize the circumstances under which hit records happen—which are kind of peculiar—then I am surprised it happened to me," he says. "Since my records are mostly instrumental, they have always been classified by programmers as jazz. It doesn't matter whether it is or isn't, because the radio only thinks in big terms—if it's instrumental, it's jazz. Her-

bie Hancock, Jeff Beck and Herb Alpert are all classified as jazz.

"Of course, top hits are usually not jazz," he continues. "Once in a while an instrumental will hit, but it's usually an MOR tune like Chuck Mangione's 'Feels So Good.' I found out that I have a lot of fans in the radio stations, because they said, 'I'm so glad you finally turned up with a good Top 40 vocal tune, because I've got all your rec-

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ords—but you knew we couldn't play them on the radio."

A lot of people thought *Rit* was Lee's first record because of the success of "Is It You?". "I've found it all quite amusing, because it's opened up a lot of avenues to me," he observes. Ritenour spent the summer on tour, playing dates with Al Jarreau and headlining some dates which, he says, "never would have happened without this record." He faced 100,000 people when he opened for Chicago in that band's home town.

The success of *Rit* has also opened up other doors in the industry. Lee is interested in producing other artists, and he has been approached to do some film scoring. "I think artists like myself can write good scores that could lend

an interesting slant to some movies," he says. "I won't approach it from a traditional orchestral point of view—I'll do what I do."

Lee Ritenour, who will turn 30 in January of 1982, grew up in the Los Angeles suburb of Palos Verdes. "I think that had a lot to do with my success as a studio player, because all through my early years—even as early as when I was 12 or 13—everything was directed toward being a studio musician, whether it was arranging, playing, or producing," he says. But his teachers encouraged him to maintain a balance between study and performance, and he has always interacted with other musicians in addition to cloistering himself with his books and guitar.

"The best kind of training is two

kinds," he declares. "One, you've got to have it from the street, which means you jam with your friends, play in high-school bands, pick songs up off the radio—things that almost every musician does.

"The second thing is to learn as much about music as you can. The farther you go into the music field, the more you're tested, and the more you realize how limited your musical knowledge is.

"I was taking lessons and reading music when I was nine years old," Ritenour continues, "but I also knew it was necessary to jam. A lot of people do one or the other, and today it's pretty-sophisticated: you can go to guitar school, bass school and so forth. But it's sort of a copout, because while you're learning all that theory and logical stuff—chord changes, rock and classical and jazz and Indian music—you're missing out on some fundamental things like developing your ear.

"The best musicians have a healthy balance of both street and formal training," he concludes.

The variety of music available in a metropolis the size of Los Angeles contributed to Ritenour's musical growth. "There was a club on Hollywood Boulevard called Pandora's Box, and my dad would drive me past that place every Thursday on the way to my lesson in North Hollywood," he recalls. "Sometimes on the way back home we'd stop in and hear a couple of rock and roll bands. I heard Canned Heat, the Lovin' Spoonful, Buffalo Springfield, the Turtles—and on the other hand, my teachers were introducing me to Howard Roberts, Joe Pass, and Miles Davis."

The range of styles he heard became part of Ritenour's musical tool kit. "One of the things that made me successful as a studio musician was that I could sound like any guitar player in any style," he says. "My goal as a teenager was to be able to play like any good guitar player I heard. The first time I heard Jimi Hendrix on the radio I thought, 'Wow! How does he do that?!' When I heard a fuzztone on a Ventures record, I went out and bought a little Maestro fuzz.

"Now, concentrating on my own records, I've learned to let 'me' come out more," he says. "But it's a fine line in the studios, and I noticed it almost immediately. On the one hand, they want you to be invisible as a person and as a player—in other words, don't be threatening to anybody and play what they want to hear.

"Then, as you gain more respect, they'll want to know what your ideas are, and what kind of sound you think should be on the record. They want a little personality on the record—if it's the right personality."

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Lee Ritenour's Pedal Board

PHOTO: DAVID GANE

But, he adds, "the more you let your style stick out, the more you get pigeonholed as to what kind of dates you do. Steve Lukather only gets called for rock and roll dates, even though he plays really good R&B rhythm guitar. David 'T' Walker and Ray Parker are black, so right away people think they're R&B. And I get called for a lot of ballad dates, because I'm thought of as

a really pop kind of player."

He's not doing much session work any more, but Ritenour prefers dates that take him out of his normal grooves. "I did an album with Sparks a couple of years ago [*Introducing Sparks*, on CBS], and I played a couple of things on Pink Floyd's *The Wall*. Yeah, there are a few ringers on that album," he says.

(The Floyd dates didn't turn out to be very many minutes on the record, "but it was a lot of work—about three days of long hours—because they really choose their music carefully," Ritenour says. He played some classical guitar, an acoustic passage with guitarist David Gilmour, and "one song where David does one lead part and then I finish it. For some reason, his sound wasn't working for the end of the song.")

Perhaps the most critical attribute of a successful studio player, Ritenour says, is a sense of what people want to hear. "The more successful ones subconsciously learn to know what the producer and artist want," he says. "When you're first starting out, you might get rubbed the wrong way because an arranger or producer says, 'I don't really like that. Could you play this?' And you're not sure why they asked you.

"The more you do it, the more you know before they ask it that you shouldn't be playing that, you should be playing this. The faster you become at anticipating, the less they have to ask you.

"Finally, you ask them, 'Do you like what I'm playing? Is there anything I should change?' And they say, 'We love it! Don't change a thing.'

"If you hear that every day, then you're a great studio musician." ■

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# MUSIC NOTES

by David Gans

## AWARD-WINNING NEW BASS

There's a strange and wonderful new bass guitar attracting the attention of musicians around the country. Born in Brooklyn, the Steinberger Bass has found its way into the hands of some very famous players, including Leland Sklar, Tony Levin, the Dregs', Andy West, and others.

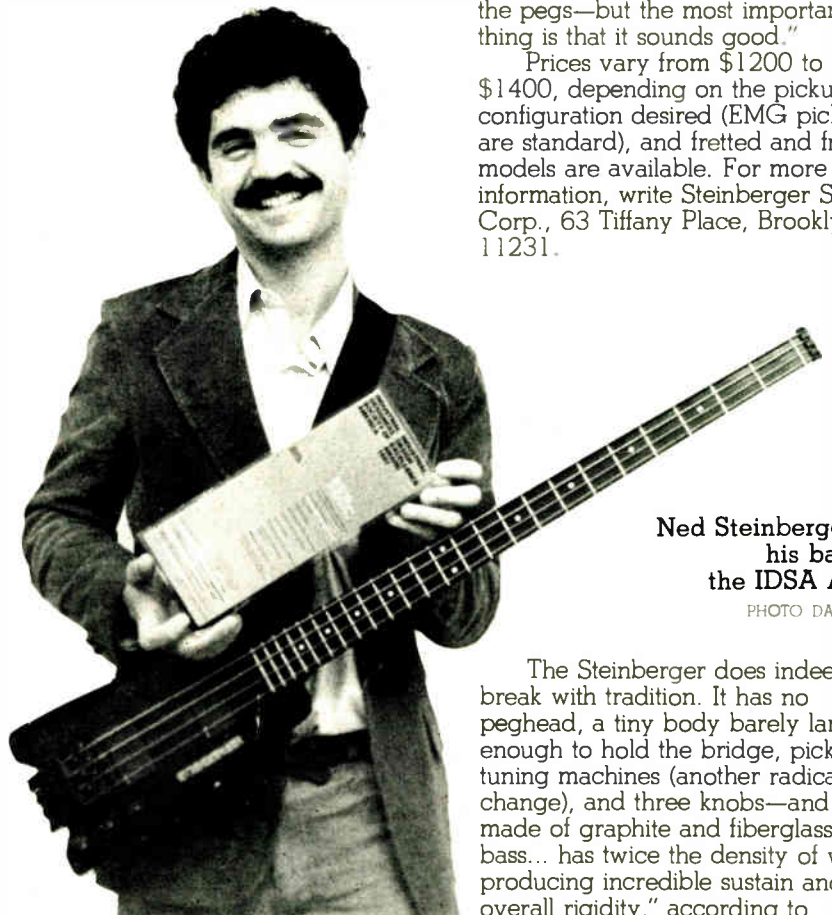
Designer Ned Steinberger was given the 1981 Industrial Design Excellence Award in the category of Consumer Products (up against toasters and hair-dryers as well as other electronic and musical items). The announcement of the Award stated, "... the Bass breaks with the traditional assumption that an electric stringed instrument must imitate the look, feel and sound of its acoustic parent."

Marketing Manager Hap Kuffner. Though at eight pounds it is only slightly lighter than a Fender Precision bass, the feel of the instrument and its exquisite balance make it the most comfortable bass guitar around.

Andy West points out that not the least of the Steinberger's attractions is its portability. "My Alembic in its Anvil case weighs over 50 pounds, and it won't fit in any car," he says. "I can put the Steinberger in the overhead rack of any plane I've ever been on and I've never gotten any hassle.

"It's not just a gimmicky thing," he adds, "although I could talk forever about the aspects of it that don't have anything to do with playing, such as its unbreakability. It's much easier to tune than a wooden bass, and it never goes out. You don't have to reach for the pegs—but the most important thing is that it sounds good."

Prices vary from \$1200 to \$1400, depending on the pickup configuration desired (EMG pickups are standard), and fretted and fretless models are available. For more information, write Steinberger Sound Corp., 63 Tiffany Place, Brooklyn, NY 11231.



Ned Steinberger with  
his bass and  
the IDSA Award.

PHOTO DAVID GANS

The Steinberger does indeed break with tradition. It has no peghead, a tiny body barely large enough to hold the bridge, pickups, tuning machines (another radical change), and three knobs—and it is made of graphite and fiberglass. "Our bass... has twice the density of wood, producing incredible sustain and overall rigidity," according to

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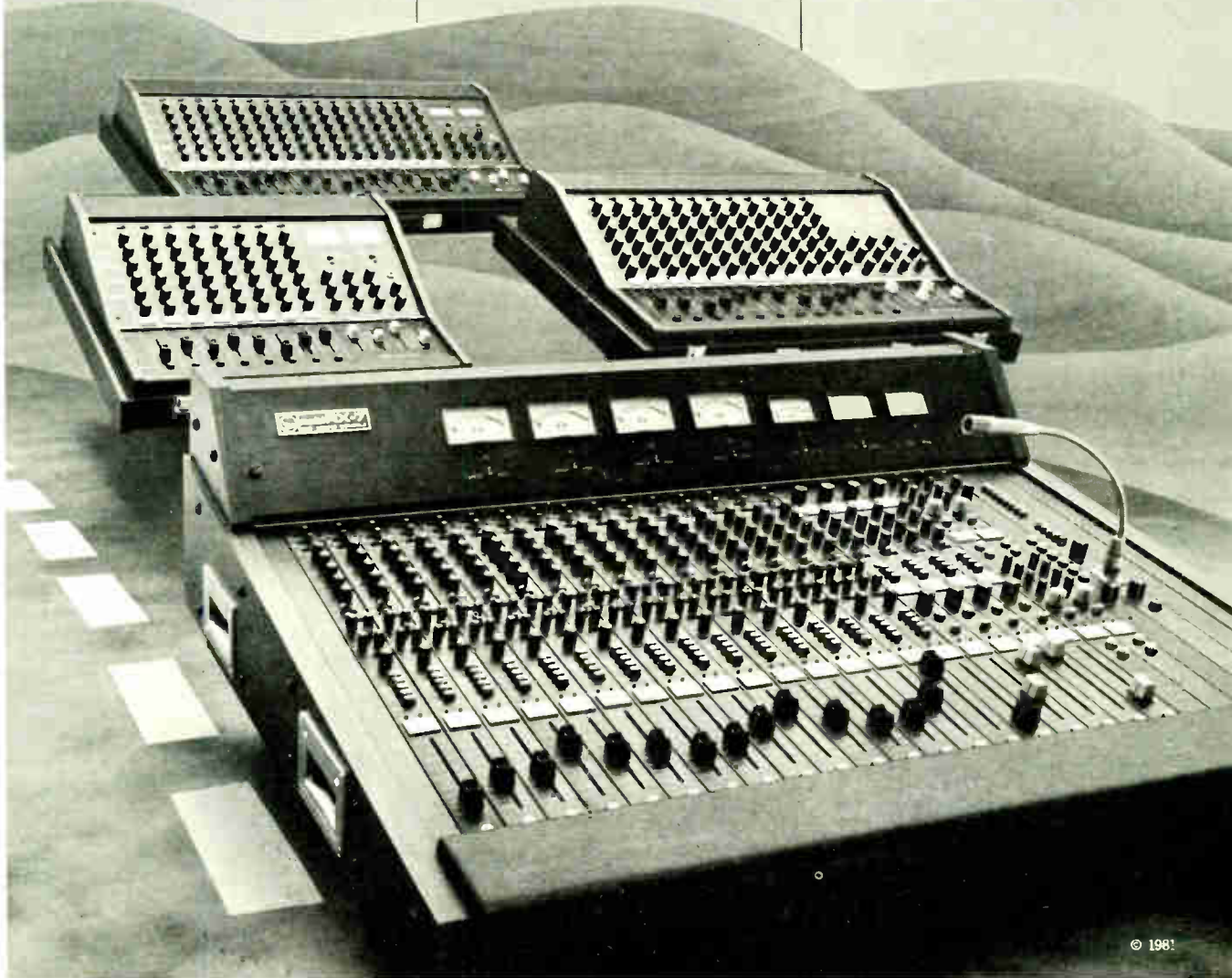
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# MUSIC NOTES

## VERSATILE DELAY SYSTEM

A/DA Signal Processors has introduced the STD-1 Stereo Tapped Delay. From the published specifications, it appears to be one of the quietest and most versatile delays available, especially in the under-\$1000 price bracket. Delay times of this analog device vary from 1.3 to 55.5 milliseconds, variable over a 1 to 5x range. The delay line is tapped at six harmonically-unrelated points, and each tap can be assigned to one of two output busses—not the usual “dry” and “wet” separation that

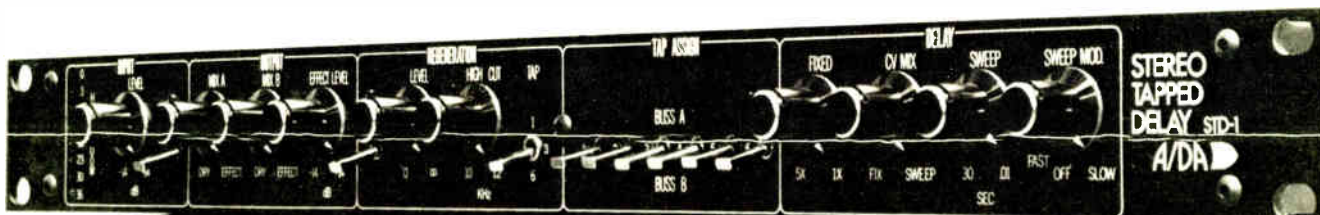
passes for stereo in less sophisticated units. Regeneration and Modulation sections augment the STD-1's delay functions, enabling effects including stereo flanging, “clouded” and “highly resonant” flanging, doubling, chorusing, slapback echo, reverb, multiple doppler effects, vibrato, and spatial placement of sound forward and backward in the stereo field—not just left-right panning.

As important as the STD-1's advertised features is the silent performance it promises. Dynamic range is listed as 93 dB unweighted (equivalent input noise -112 dBV); dry bandwidth is 10 Hz-20 KHz, wet bandwidth 10 Hz-13.5 KHz. Two models are available: one with unbalanced inputs and outputs (inputs switchable for high or low-impedance

instruments), and one with unbalanced high-impedance and balanced low-impedance inputs and outputs. There is an LED headroom indicator on the front panel, and effect and regeneration in/out are remotely switchable.

Devices such as the STD-1 are ideal for multi-purpose applications. I have several items in my guitar rack which are also useful for home recording, and the STD-1 promises to serve admirably in both situations. I can see using it for guitar effects and to enhance vocal overdubs, in addition to more bizarre experimental sounds.

Suggested list price (instrument model): \$799.95 Analog/Digital Associates, 2316 Fourth Street, Berkeley, CA 94710.



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Mike Varney is looking for a few loud men—er, persons. The energetic young Marin Country guitarist, who first came to fame as co-author and performer in Marty Balin's *Rock Justice* (and who produced the soundtrack album for EMI America), has launched a record label of his own. Shrapnel Records' first release is *U.S. Metal*, which features ten heavy-metal acts from across the country.

“My mission in life is to discover the next American guitar hero,” says Varney in a voice that needs no exclamation points. He planted notices in *Guitar Player* and *BAM* magazines, and got over 250 tapes

from all over the country. How he narrowed down the field of heavy headbangers is Mike's little secret, but he's not through yet. In fact, *U.S. Metal* is only the first installment. “I'm a guitar fanatic!” he shouts in his press releases. “I got fed up waiting for the major labels to put out any good Heavy Metal guitar albums and I decided to take matters into my own hands.”

Interested parties should send tapes to Varney at Shrapnel Records, P.O. Box P, Novato, CA 94948. For a copy of *U.S. Metal*, send \$8.00 plus 75¢ postage to the same address.

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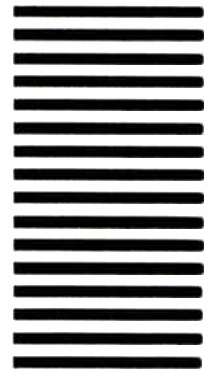
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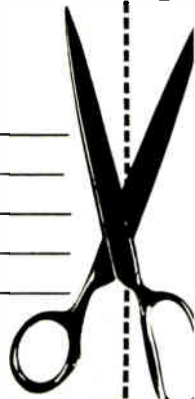


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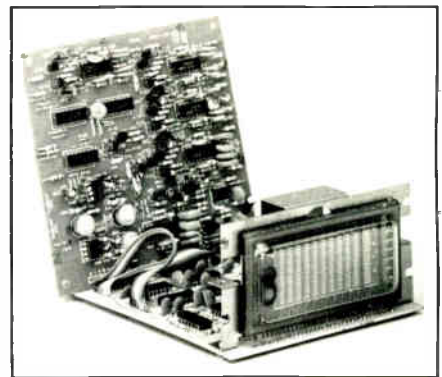
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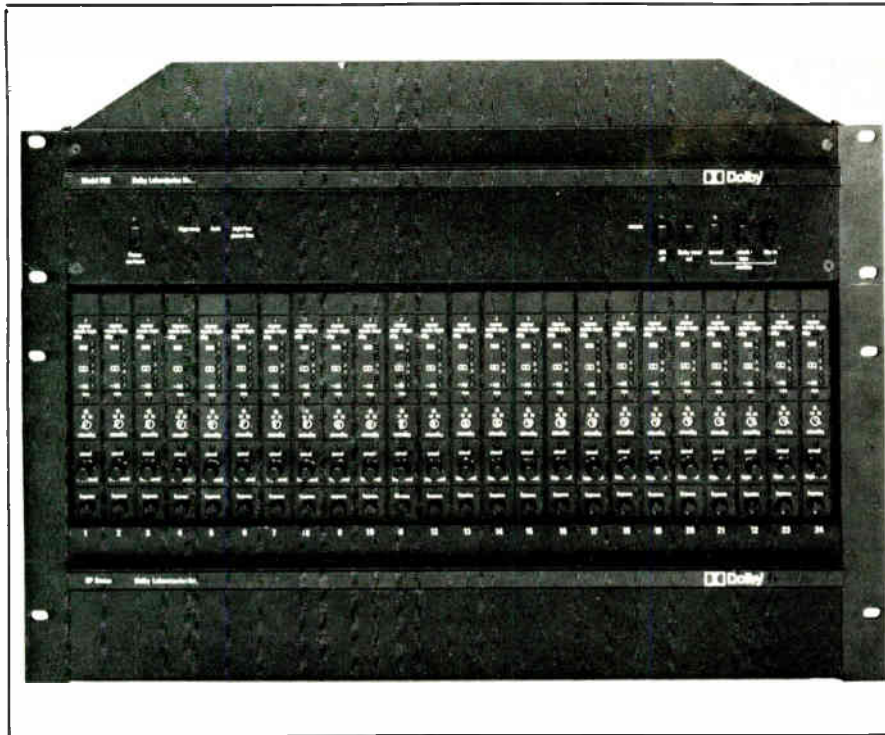
## V.F. SPECTRUM DISPLAY

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A typical display for HD-20B is 10 octaves of left or right channels plus one additive (L + R) display channel. The vacuum fluorescent display uses 1/10th the power of the LED display and gives a clear luminescent effect due to field luminosity, whereas the LED gives a spot luminosity.

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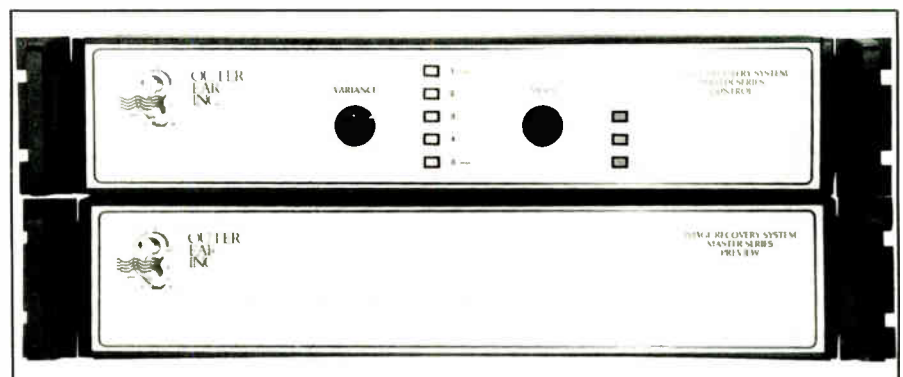


## NEW MULTI-TRACK NOISE REDUCTION UNIT

Dolby Laboratories has introduced the SP series new professional multi-track noise reduction unit, providing up to 24 tracks of Dolby A-type noise reduction in only 12-1/4" of rack space, including separate power supply. In addition to being more compact, the SP series has a number of control and performance refinements over the well-known Dolby MH series, which the new SP series supercedes.

The new SP series provides the Dolby A-type noise reduction characteristic through the use of standard Dolby Cat. No. 22 modules. However, the SP series is otherwise an all-new design which can contain as many as 24 noise reduction tracks across its standard 19" rack width. It features a separate regulated power supply with electronically-controlled output protection and twin, low-noise fans to assure cool, reliable operation of the entire unit. Functionally, one of its new features is an LED display for each track which permits accurate Dolby level calibration (within  $\pm 0.1$  dB if desired) by matching the intensity of LED pairs. Additional LEDs indicate the presence of signals and clipping, and assist alignment with high-level reference tapes.

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The Outer Ear image recovery system master series is a new stereo signal processor that "opens up" and spreads the stereo image, creating greater width and depth perception. In disk mastering applications the master series subjectively increases high

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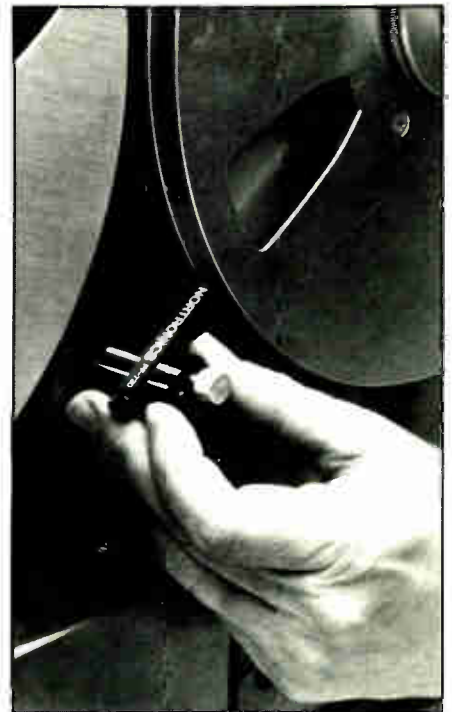


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can be encoded on disk and requires no decoding to be appreciated on any stereo playback system.

The image recovery system is based on extensive hearing research into human localization capabilities and how they are affected by the outer ear.

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## RECORDER CARE PRODUCTS

Nortronics has announced two additions to its Proformance line of recorder care products—the PF-710 and PF-720 alignment gauges.

The PF-710 provides three critical adjustments for any broadcast cartridge player, a multiplicity of functions performed by no other single gauge. The zenith adjustment is  $90^\circ \pm 5$  minutes (compares to NAB standards of  $\pm 15$  minutes). The PF-710 also checks tape guide and track height to  $\pm .001$ ".

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# VIDEO NEWS

by Mia Amato

## VCR/Disk: Hardware Update

The VCR industry takes a step forward this winter with the introduction of the first stereo videocassette recorder by Akai. With a list price of \$1,700, model VP-7350US is decidedly not a mass market item. It can record in Dolby stereo via two optional microphones. Dolby noise reduction is also built in for playback through a home stereo setup.

In the disk arena, the third format VHD, developed by JVC and backed by General Electric and Thorne EMI, will not make its American debut until late next summer. Among other things, this means that several musical programs created for VHD, such as the Tubes' *"Completion Backwards Principle"* and 1981 concerts by April Wine and America, will be released far, far after the concurrent record albums find their way into the cut-out bins.

The stereo laserdisc systems manufactured by Pioneer and Magnavox appear to be holding their own, thanks to a surge of interest by industrial television users. RCA is expected to go on a spending splurge this month in a last-ditch attempt to woo consumers to its low-cost, monaural CED format disk player. The stylus-based system reportedly did not sell as well as expected this year, and RCA has already moved some key executives in its disk division to other projects. According to one industry expert, the CED and VHD formats are considered "not in the running."

Also "not in the running" are two new tape formats. Technicolor's 7-pound minicassette portable recorder is designed to compete with home movie cameras and will probably not affect the pre-recorded programming market at all. A Philips/Grundig format similar to VHS is expected to be aimed mostly at the European market.

## Cable: That "Other" Music Channel

Cable television's largest role in the video music field today is that of

an outlet for promotional tapes created to help sell records. While the lion's share of publicity has fallen to Warner's 24-hour MTV channel, a rival service called the Video Music Channel has been growing slowly but steadily.

The service is programmed in Indianapolis by Bob Mertzman who distributes it nationally not by glamorous satellite but via U-Matic videocassettes. In cable terminology this is known as "standalone" programming; the shows are made available in individual hour-long segments and most often used on a cable system's local channel. Mertzman claims a modest viewership—two million homes.

"We have focused on getting into the urban systems—like New York, Boston, and Miami," Mertzman explains, "Cable systems can have the show for free as long as they run the four national ad spots included in each program."

Like MTV, the Video Music Channel airs mostly promo clips. But as a stand alone product, the Video Music Channel is gaining popularity with cable operators who only wish to dedicate a few hours per week—not a whole channel—to visual music. "A typical system runs two hours per day, usually in an evening, prime time slot," says Mertzman. Eventually, he adds, he would like to program each urban center individually. "We've just started one cable system working with a large minority audience, and the music will be primarily R&B."

The Video Music Channel is also actively seeking videos from small, local labels in the markets it serves. Mertzman said he often programs relatively unknown bands on his service, but rejects most unsolicited material because the technical quality is poor. "We want the bands on our service to look good," he stressed. "And pitting some of these tapes against a \$65,000 clip supplied by a major record company would really be unfair."

## Companies: Bullish at Bearsville

"It's probably the best kept secret on the east coast," says Paul

Moizian, referring to Todd Rundgren's video studio in Bearsville, N.Y.

"Everybody's heard about it but not many people are aware that the studio is available for outside jobs." Moizian has worked as Rundgren's tour manager and is now responsible for booking the state-of-the-art **Utopia Video** studio. "We just completed a promo for Peter Bowen of Tangerine Dream, for an album to be released in Europe," he says. "We'd really love to do more promos, as long as we don't get typecast."

Rundgren himself is currently putting finishing touches on a computer animation program to be sold by the **Apple** computer company. The program allows an artist to "draw" a video image with an electronic pen. It's similar in design to video animation systems marketed by **Ampex** and **For-A**, and has been dubbed "the Utopia Program."

Nashville-based **Bullet Recording** is offering three-camera, one-inch video program at its new location on "Music Row." The \$1.5 million studio complex also handles 46-track audio recording. **Alpha Audio** has added SMPTE time code video synchronizers to its Richmond, VA facility. In San Francisco, five principals doing business as **Alcon Video/Film Productions** are putting emphasis on music production and postproduction services. In Scottsdale, AZ, **Chaton Recordings** christened a 25 foot audio van equipped with video monitors and BTX interlock.

**Criteria Recording** of Miami and **Video Tape Associates** announced a joint venture, **The Video Music Group**, to provide audio-video facilities packages for producers. VTA owns two large studios in Florida and Atlanta as well as a fleet of four video remote trucks. Criteria has re-equipped its mobile unit for location audio sync.

## Promo: Hot Shots

The haunting video works produced by Yoko Ono to accompany the *"Seasons of Glass"* LP were edited at DJM in New York. Location production was supplied by Steve Rutt of Rutt Video. ■

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Dennis Thievin  
Brothers Studio  
Kaledon, B.C.

Dear Canadian readers,  
Let's here from you. If you are involved in a studio, get in touch and we'll get our gears in motion to find a way to spread your word.

Editor

Dear Mix,

Just a short note to let you know that our staff and customers always look forward to your two fine publications. We appreciate the multiple copies and the fact that we see certain customers more often than normal when they stop by to see if the new Mix or M.I. has come in.

We are now in a short period of down time while undergoing our second expansion in two years. Some of the staff are on a long deserved vacation and two are on the road taping for radio syndication. Our local phones will be disconnected (outgoing WATS is in service) until December 1st while I hold down the fort single-handedly and supervise construction.

This letter was inspired by an artist that had just come by (fifty miles out of his way) knowing that there might not be anyone here, to see if any new "mags" were in.

Thank you,  
Mike Bailey  
Creative Rediffusions  
Panama City Beach, FL

**CORRECTION:** In our August issue (Vol. 5, No. 8), in the "Monitor Field" story by Edward M. Long, on page 44, in the third to the last paragraph, we goofed. The specifications for the JBL 4430 were inadvertently left out, while the specifications that were shown were for the Calibration Standard Instruments MDM-TA3. We apologize for any inconvenience this may have caused JBL, Mr. Long or the readers.

Dear Mix,

Just a few comments on Mr. Dingman's article on tape editing. Referring to the opening paragraph; tape editing is not only a highly unspecialized function, it's probably the most routine procedure an audio engineer ever performs. It only requires the "patience of a saint" and the "hand of a surgeon" if you follow Mr. Dingman's instructions. It seems he's never heard of presized splicing tape which fits right over your edit without trimming. But he's one up on me because I've never heard of a separate "work area" for editing. All my editing is done right at the desk where a splicing block is fastened very close to the head assembly and a roll of splicing tape is within easy reach. My use of a marker is restricted almost entirely to music editing, as it's easy to determine cut points on voice tapes by employing the distance between the two grooves on a splicing block and their relationship to the distance between the playback head and the point at which you grab the tape to bring it down (or up) to the splicing block. He also neglected to mention that when you make a music edit, you should always overlay your two marks on the block; one over the other, and cut across both at once. This insures that the two cut ends will "jigsaw" against each other, minimizing the chance of a drop-out. Of course, I'm taking for granted that your readers are anything but rank

amateurs, otherwise why would they be reading your publication in the first place. Too bad Dingman didn't take that for granted. Better luck next time.

Yours Truly,  
Bruce Kaiser  
Cue Recordings Inc.  
New York, NY

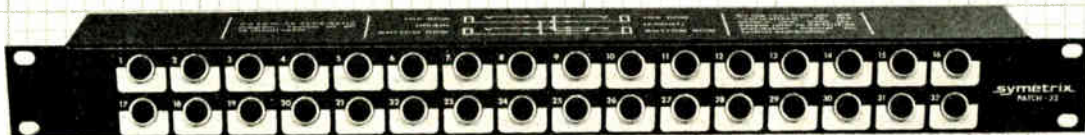
Dear Mix,

We enjoy "Mix" regularly, as I'm sure most other studios in our area do. The catch is, we're distressed because no mention is ever made in "Mix" with regard to the industry here in Canada. All studio listings seem treated as complete once they have been featured around the U.S., but rarely is a word seen pertaining to the fine studios up above. (There are at least a dozen major studios in Vancouver alone, several of which are in excess of 24 tracks...)

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When he was 16, Humberto moved to the U.S. from Chile, where several of his relatives were successful singers. He worked on an assembly line for a while, before wandering into MGM Studios. A year later, when an engineer got sick before a major session, Humberto was the only one around who could get the job done. He's been getting the job done ever since for an incredible variety of people, from Debbie Boone to Alice Cooper, as well as Frank Sinatra, Sammy Davis Jr., Steve Lawrence, Tony Bennett, Shaun Cassidy, The Osmonds, David Bowie, Denise Williams, Gladys Knight, Bill Champlin, Lee Ritenour, Hall and Oates, Leo Sayer, The Average White Band and Bernie Taupin, whose album he produced.

### ON RECORD BUYERS

"When you make hits, you have to think hits—14, 18, young. The people have to be realistic. How many albums is a 27-year-old guy going to buy, as opposed to a 15-year-old? I mean, you go to a record store. Maybe a 16-year-old is going to buy four albums. A 23-year-old is going to buy one or two—he's very picky. He might buy very specific groups that he likes. He might follow critics. When you make records, you have to think kids. Those are the guys who buy the records."

### ON RETAKES

"I hate perfect records. You cut the basic track, the vocals, and then the producer goes all the way back again. He starts replacing the drums. And then he replaces the bass, because the bass doesn't feel quite right. And then he starts doing the keyboards again. So that by the time he's finished, he's done it all over again. If it's not right, I understand. Let's do it all over again. But when you start patching things that already have the specific feel in there—that 'something' that has already been printed—you

can hear all the human things that are all there for the first time—I don't want to be a part of that. I have been part of one of those and it just drove me crazy."

### ON NOISE REDUCTION

"I don't use any noise reduction. I never use it, either when I'm doing tracks or when I'm doing final mixes. They really affect the music. They affect sound in general. To me, the punch is all gone. The drums sound different. The vocals sound different. The keyboards sound different. I can hear those things and it really bothers me, so I don't want to be a part of it."

### ON TAPE

"Since I started with MGM, we always used Scotch. Only once, I've experienced a different brand of tape. And I was very disappointed. And I had a serious problem. It got so bad, like in the middle of the mixes, the tape started giving up—heavy drop-out in places. And then the tape started peeling. Not on the outside. It was giving up on the inside. I mean, I was doing a mix, and halfway through the song, the whole top end disappeared, like someone threw a blanket on top of the speaker. So we mixed about halfway through the album. We mixed in sections. We cleaned the heads all over the place. We did the introduction. Clean the heads again. We don't want to take chances. I wouldn't do a project with any other tape besides the 250. I have done the past 20 albums, the past 30 albums all on Scotch. It gives me what I want, and what I want is a real clean taping, punchy bottom end, very little hiss, almost none. You have to try things in order to know if you're doing the right thing. If you don't try, you'll never know. And I have tried, and the results have been different."

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World Radio History

# NOW YOU DON'T HAVE TO BUY PROBLEMS!

Until now, if your budget for a multi-track tape recorder was around \$20,000 you had to settle for a **used** 24-track machine and someone else's problems . . . or settle for fewer tracks and compromised quality.

Soundcraft decided today's economy demanded a line of new multi-track recorders that are fully professional, yet reasonably priced. We took a look at all the major professional machines and went back to the drawing board. The result is a new line of tape machines . . . basic in design, but with all the professional features and reliability you demand.

The new Soundcraft multi-tracks are lighter and smaller than other machines. The 24-track is compact enough to fit in the most cramped mobile production truck and light enough to roll between rooms.

Best of all, you can buy the **new** Soundcraft two-inch, 24-track recorder for as little as \$21,250\* . . . its 16-track counterpart for only \$19,050 with a

\* Model 762/24

complete list of options so you can tailor your machine to your own requirements.

Take a look at the new Soundcraft multi-tracks. You'll see that we really do offer you **More for Less!**

## Soundcraft THE CHALLENGER

For the name of your nearest Soundcraft Multi-Track dealer, contact:

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Torrance, CA 90501  
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