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THE RECORDING INDUSTRY MAGAZINE

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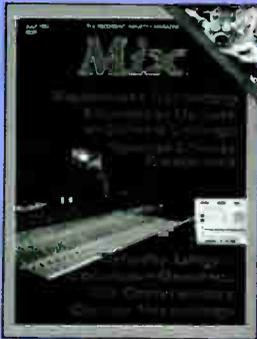
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 Susan Gentry



Education in recording technology has quickly become a sophisticated and demanding course of study. This issue takes a close look at some of the leading institutions training engineers and producers for tomorrow's industry.
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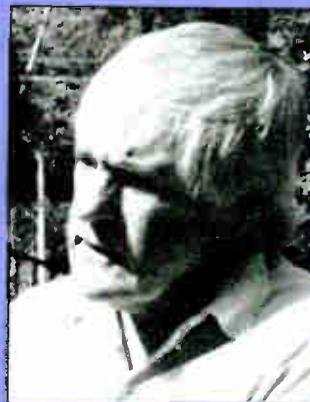
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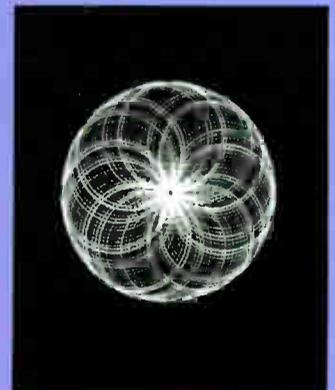
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Josef Zawinul, co-founder and keyboardist extraordinaire with the highly acclaimed jazz organization, *Weather Report*, talks about performing, composing and recording in this high spirited interview by Josef Woodard.
 Page 89



What's *Timothy Leary* doing in Mix Magazine? Outspoken on many subjects, not the least of which being music and its effect on our society, Dr. Leary shares some of his very special insights during his lunching with *Mr. Bonzai*.
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As *music video* expands in scope to incorporate more abstract and challenging visual imagery, *computer graphics* is finding wide acceptance by media artists to better convey their concepts.
 Page 104



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Dear Mix,

Thank you for your most enjoyable article on the Missing Persons concert/video shoot in San Francisco, in your April issue. I was at that concert, and it was interesting to read about what was going on "behind the scenes" before and during the show.

However, I would like to bring a rather glaring oversight in the article to your attention: while you do mention, in passing, the existence of an audio recording truck on the scene, never do you even hint at its identity. I find this somewhat curious since all the other support companies are so well documented.

I realize that April's was a video-oriented issue, but since Mix is primarily an audio recording industry journal, I found the silence about the audio recording end of the video shoot somewhat curious, especially in view of the fact that an article in BAM magazine, describing the same concert, but from a much less professional standpoint, of course, also failed to mention the remote recording company responsible for the audio recording of the performance! Who *were* these masked men?

Sincerely,
Steve Lang
The Record Plant
Los Angeles, CA

Dear Steve,

Sorry about the oversight. Checking back with Keefco, we were informed that the truck was supplied by Guerrilla Audio Visual, with Bob Margouleff as supervisor of audio and Howard Siegel as engineer in the truck.

Dear Mix,

Regarding your May 1983 issue of Mix magazine: in your Playback section, (page 98) you reviewed the Earth, Wind & Fire *Powerlight*

album. There are a couple of corrections I would like to bring to your attention.

The credit information should have read: Produced by Maurice White for Kalimba Productions; engineered by Mick Guzauski. The recording studio information is the same.

Sincerely,
Geri White, Production Assistant
Earth, Wind & Fire
Los Angeles, CA

Dear Mix,

Regarding the article "The Adventures of Harry Nilsson" May 1983: it was very enjoyable! I am a big fan of Harry's and have been curious to know what he had been doing.

Thanks for all the great reading and hurry the next issue along.

Sincerely,
Ed Primeau

P.S. — Donald Fagen's interview was equally enjoyable!

Dear Mix,

For three years I have been trying to locate effects wizard, Mr. Roger Mayer, concerning his equipment. If anyone knows his whereabouts, his address or anything about him and his equipment, please write. I have spent a lot of time and money trying to get in touch with this man who was a pioneer in musical effects. His effects are the most asked-for and the hardest to find. Any information would be greatly appreciated. Thank you for your time.

Yours truly,
Mr. Ronald Shimamoto
2240 West Hetzel Road
Imperial, CA 92251

Correction:
Rocshire Studio's phone number was incorrectly listed on page 107 of the June issue. It should have been 714/632-9452. Sorry, Rocshire.

*Mix Video
Volume One
is now available!
see p. 11*

CURRENT

AES Convention Debate Continues

Although nothing seems likely to be decided before the October AES meeting in New York, 85 exhibitors so far have responded in opposition to the return to two U.S. conventions per year, as established at the recent Eindhoven Board of Governors meeting [see *Current*, May]. Chairman of the Exhibitor's Committee, Stephen F. Temmer, who feels the exhibitors have been put in an untenable situation, has suggested several alternative plans, including the dual convention approach, however limiting booth participation to one or the other of the shows for the exhibitors. He has also proposed restricting the size and lavishness of exhibit booths and/or "bringing booth rental costs more in line."

Acknowledging the burdens placed on exhibitors, AES Executive Director, Donald Plunkett, says that he is caught between their situation and "concern for the maintenance of information flow at a time in our changing technology when the exhibits are so important to provide a platform for young energetic designers."

Plunkett feels that the problem will manifest itself in a just and acceptable solution and that "for all the members of the Board it will take a Solomon-like judgment for a long term decision to work."

Senate Subcommittee Approves Record Rental Bill

The Senate Judiciary Subcommittee on Patents, Copyrights and Trademarks has approved S.32, The Record Rental Amendment of 1983, without dissent. The bill now goes to the full

Senate Judiciary Committee for further consideration.

The bill, as approved by the Subcommittee, was amended to make clear that the legislation is fully applicable to the owners of copyright in both the sound recording and the underlying musical works. This assures music publishers and songwriters will share in any revenues that may be earned if commercial record rentals are authorized.

Digital Entertainment Corporation Forms

Former President of Neve, Tore Nordahl, has assumed the Chairmanship and Presidency of Digital Entertainment Corporation, a company formed for the purposes of exploring the many opportunities available in providing equipment, systems and services for the entertainment industries within the areas of digital audio. One specific purpose of the company is to develop, assemble and market interactive digital audio storage and processing systems for professional applications within broadcasting and recording. The Corporation may be contacted at P.O. Box 95, U.S. Route 7, Brookfield, CT 06804, phone 203/775-4465.

New Music Seminar

The New Music Seminar will be held July 5-6, 1983, at the New York Hilton Hotel. Topics slated for this year's event include: independent labels and distribution, publicity, promotion, press relations, marketing, album radio, video, music law, publishing, talent and booking, an A&R panel, and an artists panel with Marvin Gaye, Thomas Dolby, Laurie Anderson, Midge Ure, and surprise guests.

Talent showcases at local clubs will feature The Funboy Three (their first U.S. appearance), Aztek Camera, The Dream Syndicate, and Johnny Dynell and Rocket 88. The cost of the two-day seminar is \$90, and more information can be obtained by calling (212) 348-4876 or 686-7410.

SPARS Meet in Nashville

Over 100 industry professionals gathered May 16 at the Blair School of Music in Nashville to discuss their mutual problems and possible solutions.

Three morning discussions were held on the topics of Digital Audio, Mixing Techniques and Studio Management. The digital group voiced some criticism of the lack of standardization and high cost of the recorders, but spent more time on new mixing techniques needed for digital. The SPARS proposal for digital certification of albums was also reviewed. The mixing techniques group covered many subjects but focused on reverberation systems and apparent loudness. The studio management group discussed tax avoidance and business computer use.

After a lunch hosted by Ampex, three more topics were discussed: Studio Booking and Billing, Education, and Audio for Video. The booking and billing group continued the discussion of computers and talked about credit ratings and costs. The video group went over the problems and potentials encountered when expanding into this market. The education group discussed the type of graduates the industry needs and what kinds of continuing education would be most useful. The SPARS proposal of an engineer's certification test was introduced. The meeting closed with a reception hosted by Studer Revox.

—Chris Haseleu

notes

Westlake Audio, in Hollywood, CA, has been appointed an *MCI/Sony* professional audio dealer for MCI consoles, tape machines, accessories and Sony professional audio products. . . . *Gotham Export Corporation* has opened its first overseas sales office, *Gotham Europe AG*, located in Wettlingen, a suburb of Zurich, Switzerland. . . . *Fairlight Instruments, USA*, recently opened a new East Coast office at 575 Madison Avenue in New York. . . . *3M* has named *Edoardo Pieruzzi* vice president of their Magnetic Audio/Video Products Division and *Jack B. Hanks* general manager of 3M subsidiary International Tapetronics Corporation. . . . *GLI/Integrated*

Sound Systems, Inc., has relocated to a 15,000 square foot facility in Melville, New York. . . . *NAVA*, the International Communications Industries Association, has scheduled its annual convention and trade show, *COMMTEX International*, for January 20-23, 1984, in Dallas, TX. . . . *Everything Audio* has been appointed exclusive Southern California Dealer for *Sound Workshop* Series 20, 30 and 40 Mixing Consoles, ARMS Automation, and the DISKMIX Automation Storage/Editing System. . . . *Bob Pariser* has joined *Victor Duncan, Inc.*, as video sales representative in the southwestern U.S. . . . *Richard J. Quinlan* has been appointed Eastern Regional Sales Manager of *Shintron*. . . . The late

French poet *Charles Cros*, who in 1876 conceived the disk record for sound recordings, was posthumously presented the "Maker of the Microphone Award." The trophy, for "an outstanding contribution to the world of sound," is given in memory of microphone inventor Emile Berliner, who developed the playable and mass-producible disk record utilizing the theories of Charles Cros. . . . By Presidential Proclamation, U.S. import duties on a variety of educational materials have been removed for a trial period of 30 months. Among the materials affected are scientific apparatus and all audio, visual and microform materials such as films, records, videotapes, computer software and microfiche.



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NORTHEAST

At Philadelphia's *Starr Recording Studios*, *Habits* is finishing tracks for an upcoming EP with producer *Joe McSorley*. . . . At *Evergreen Recording* in New York City: *Ray Gomez* producing *Patti Oja* for Jerry Brandt Productions, *Rob Stevens* at the controls. Singer/songwriter, *Dutch Robinson* of the Ohio Players laying tracks on a dance record, *Jerry Thicava* engineering, *Peter Crawford* assisting. . . . At *Sheffield Recordings*, Phoenix, MD, *Doug Miller*, artist for Gospearl Records is doing a new album, produced by *John Harley*; engineered by *Bill Mueller*. . . . Recent activities at *Electric Lady Studios*, NYC, include *Snuff* working on an album for Elektra/Asylum, produced by *Phil Gernhardt*, engineered by *Ron St. Germain*, and assisted by *Barry Harris*. . . . At *Unique Recording* in New York City, *Arthur Baker*, *Maurice Starr* and *Michael Jonzun* putting finishing touches on the "New Edition" (Candy Girl) album for Streetwise Records, *Frank Heller* engineering. . . . At *Celebration Recording Studios* in NYC, *Kevin Gillis* and *Jon Stroll* are producing the music for their new animated children's special "Raccoons and the Lost Star," featuring Dottie West, John Schneider and the Hank Martin Trio on vocals. *Holly Peterson* engineered the sessions. . . . At *Nova Sound Studio* in Markham, Ontario, *Bob Gallo*, producer of James Brown, Rascals and the Mysterians, recently in the studio producing a new LP for *The Reactors*. . . . Recent session activity at *Kajem Recording Studios* in Gladwyne, PA, includes tracks being completed for *Alan Mann's* forthcoming EP, produced and engineered by *Mitchell Goldfarb*. . . . At *Skyline Studios*, NYC, producer *Steve Burgh* and engineer *Michael McDonald* remixing an album by *Toby Lynn* for Valhalla Records. . . . At *Studio 4 Recording*, Philadelphia, PA, *Fat Larry's Band* working on new LP for Virgin Records, following on the heels of their top 10 tune, "Zoom!"; *Phil Nocolo* and *Obie* engineering. . . . *Chestnut Sound*, in Philadelphia, PA, is cutting voiceovers and sound effects for Broadway production, *Total Abandon*, starring Richard Dreyfuss. . . . Mixing at *Secret Sound Studio*, NYC, for *Portrait Records* are the *Major Thinkers* and *Altered Images*. *Scott Noll* is engineering with *Warren Bruleigh* assisting. . . . *GBH Production's* mobile audio facility, *Unit 4*, based in Boston, MA, was the on-site audio control center for WCVB Channel 5 Boston telecast of the BSO Marathon, a fund raising event for the *Boston Symphony Orchestra*.

SOUTHEAST

The Wailers recently joined *John Denver* at *Criteria Recording* in Miami to cut a track for John's

upcoming digital LP on RCA Records. Also featured on the track was some superb sound from the Muscle Shoals horns. John Denver and *Barney Wyckoff* are co-producing the album with *Roger Nichols* at the board. *Patrice Carroll-Levinsohn* and *John Slywka* are assisting. . . . At *Bullet Recording* in Nashville, producer *Neil Kernon* continues mixing the new *Kansas* album for CBS Records. *Danny Mundhenk* is seconding. . . . Recent activity at *Emerald Sound*, in Nashville, includes *Louise Mandrell* cutting tracks for an RCA release with producer *Eddie Kilroy*. *Tom Pick* engineering, *Keith Odle* and *Russ Martin* assisting. . . . At *Mark Five Studio* in Greenville, SC, *The Driveways* in doing 4 new cuts for Fifth Wheel Productions, another Fifth Wheel LP "Son's Up" produced and engineered by *Eddie Howard*. . . . At *Sandcastle Recording Studio*, Greenville, SC, *Sonny Turner* (lead vocalist for The Platters for 12 years) just finished recording his new EP on Christopher Records with *Rick Sandidge* producing. . . . Activity at *Music City Music Hall*, in Nashville, includes *Glen Campbell* overdubbing vocals with *Charley Pride* on some of Charley's tracks for his next RCA album. *Norro Wilson* is overseeing the project with *Bill Harris* behind the board. . . . Recent projects at *Nashville's Disc Mastering, Inc.*, includes an album and single by *Ray Stevens* for Polygram, produced by Ray Stevens and Jerry Kennedy; mastered by *Randy Kling*. . . . Album activity at *Catfish Bay Sound Studios*, Clarksville, TN, include *The Heavenly Stars* for H.S.E./Black Label Records, and the *Faithful Gospel Singers* recorded live in Atlanta, GA. . . . At *Lamon Sound Studio* in Charlotte, NC, square dance caller *Bill Barnette* is working on his first release on Panhandle label with *David Moody* engineering. Producer is *Dwight L. Moody*, executive producers, *Bill Wentz* and *Aaron Lowder*. . . . At *Stargem*, in Nashville, producer *Andy DiMartino* cutting 18 sides on legendary artist *Glenn Yarbrough*. Red Hot Moon Shine recording artists *Cedar Creek* lending their golden voices on background for the project, with *Bill Vorndick* engineering. . . . *Conway Twitty* is in *Woodland's Studio A* in Nashville, working on a Christmas album with his co-producer *Jimmy Bowen*, for Warner Bros. Records. *Ron Treat* is engineering the project and *Ken Criblez* is assisting. . . . Union Station Records artist *Brice Henderson* was at *Sound Emporium Studios* in Nashville for further work on his first album. The album is being produced by *Scott Tutt*, with *Jon "Mr. Big" d'Amelio* engineering. . . . *Connie Hanson* was at *Doc's Place Recording Studio* in Hendersonville, TN, to record several country singles, with producer *Jim Dowell*, *Mike Daniels* engineering.

NORTH CENTRAL

At *Sound Patterns*, Farmington, MI, producer *Martin Scot Kosins* mixing new album by *Al Hibbler*, *Hank Jones*, *Buddy Tate*, with *Danny Dallas* engineering for Open Sky Records. . . . At *The Disc* in East Detroit, MI, *Judy Reynolds*, award-winning country western vocalist, cuts new tracks for her LP. *A.C. Combs* and *Bob Dennis* producing, *Robert Dennis* and *Dave Baker* engineering for SoutherSun Records and Tapes. . . . Activity at *Studio A*, Dearborn Heights, MI, includes recording a song for the Washington Federals of the USFL with production handled by *Mike Hoffhiens* for Magic Music, Inc. . . . Recording activity at *Pinebrook Studios*, Alexandria, IN, includes: *Jim Kimmel*, *John Higgins/Jenson Publishing Company* (2 children's musicals); *Paul Stilwell*, *Bob Krogstad/Good Life Productions* (orchestra tracks); *Ronn Huff*, *Ovid Young*, *Stephen Nielson/Word Records* (orchestra and piano tracks for Nielson and Young duo piano album); engineered by *John Bolt*, *Steve Archer* and *Toby Foster*. . . . At *The Chicago Recording Company*, Chicago, IL, R&B/rockers *B.B. Spin* completed their debut LP for the new *Cactus Records* label, co-produced by *Jay O'Roark* and *Paul Klingberg*; *Klingberg* engineered.

SOUTHWEST

For an update on Recording in the Southwest, see story on page 34.

NORTHWEST

At *Fane Productions Studio* in Santa Cruz, CA, *Bob Brozman* finishing his latest LP for Kicking Mule Records, *Peter Carlson* engineering, and *The Rastafarians* laying tracks for their next album, *Fane Opperman* at the console. . . . At *Mobius Music Recording* in San Francisco, *Henry Kaiser* is working on his new album with Hilary and John Hanes on bass and drums. The album is being co-produced by *Oliver DiCicco* and Henry Kaiser and features guest artists John Abercrombie and Glenn Phillips, engineered by Oliver DiCicco, assisted by *Annette Olesen*. . . . Currently at *Bear West Studios*, San Francisco, *Ashiko* cutting African Ju Ju music tracks, *Larry Kronen* engineering. . . . Activity at *Russian Hill Recording* in San Francisco includes Warner Bros. recording artist *Stephen Bishop* working on vocals with *Robin Williams* for an upcoming LP with producer *Gus Dudgeon*. *Richard Greene* engineering, *Gary Clayton* assisting. . . . At *The Automatt*, San Francisco, new wavers *Permanent Wave* cutting tracks with producer *Dan Levitin*. Also, *Holly Near* and *Ronnie Gilbert* mixing their Redwood Records release with *Leslie Ann Jones* engineering, and

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Ray Pyle assisting. . . . Activity at *Jenpet Music Intl.* (Alameda, CA) includes composer *Jim Jenkins* laying tracks for *La Famiglia Bologna's* promotional film, and pop group *Ariel* doing video sweetening and overdubs for a one-hour concert special. . . . At *Madman Studios* in Berkeley: *Grant Baldwin* putting final touches on his soon to be released album *Those People*. Producing is *N. Jay Young* with *Bill Thompson* engineering. . . . *Jonathan Richman and the Modern Lovers* are now recording at *Starlight Sound Studio* in Richmond, CA. The album, for Warner Bros.' *Sire Records* label, is being produced by *Josef Marc*. *Norman Kerner* is engineering and *Paul Gatehouse* is assisting on these sessions. . . . Noted Bay Area guitarist/songwriter *Craig Wingate* has been working on a 2-song demo of original material at *Tres Virgos Studios*, San Rafael, CA. Adding to the project was *Kathy Arnold* of Hellman and Groves on vocals. *Gordon Lyon* at the board with *Stuart Hirotsu* seconding. . . . At *Corasound* (San Rafael, CA) *Tim Gorman* (keyboardist for The Who) is in on two separate projects, one for R&B singer *John Anne Washington*, produced by *Mac Cridlin*, and one, a co-production with Gorman, Cridlin and *Stephen Hart*, projects engineered by Stephen Hart and *Mike Razor*. . . . Recent recording activity at *Triad Recording Studio*, Eugene, OR: jazz/fusion guitarist *Don Latarski* has completed mixdown for his album, scheduled for release in July, on *Pausa Records*. Produced by *Don Ross* and *Don Latarski*, engineered by *Don Ross*. . . .

In Spokane, WA, *Audio Recording* recently opened its doors for business, with *Tim Anderson* cutting a single and beginning work on an album. . . . Sessions at *Triad Studios*, Redmond, WA, include tracking for vocalist *Kathy Herviel* with *Mike Hathaway* producing; *Derek Dunann* at the board. LP slated for release with *Chalace Music*, and *Steve Adamek* producing EP for *Foot Lucy*.

SOUTHERN CALIFORNIA

Billy Preston, who recently left the Motown label and is now managed by David Coe, is at *Salty Dog Recording* in Van Nuys, with engineer *Galen Senogles* and arranger *Ralph Benetar*. Together the three of them are producing Billy's new album. . . . Recent activity at *The Village Recorder*, West Los Angeles, included *Diana Ross* cutting vocal tracks for an RCA release, produced by *Gary Katz*. *Daniel Lazerus* engineering, *Robin Laine* assisting. . . . Happenings at *Brittania Studios*, in Hollywood, include the group *California*, produced by *Logan McKecknie*, remixing single for The Sound Archive Production Co. *Russ Bracher* engineering with *Kent Luck* assisting. . . . Recent projects recorded at *Total Access* in Redondo Beach include the *Great White* EP, produced by *Don Dokken* and *Michael Wagener*, and the *Descendents'* album, "Milo Goes to College," produced by *Spot*. . . . In Sun Valley, at *Perspective Sound*, *Dante* beginning work on debut album, with

Isaac Suthers (of the group *Klique*) producing and *Bill Poppy* engineering the project. . . . In Hollywood, *Channel 3* is at *Gold Star Studios* working on their LP for *Poshboy Records*. *Stan Ross* engineering; *Jay Lansford* and *Robbie Fields* producing. . . . Composer *Lee Holdridge* is at *Evergreen Recording Studios* in Burbank recording his score for "Legs," a joint production of Catalina Group Productions Ltd. and Radio City Music Hall Productions. "Legs" is the most expensive TV musical to ever be produced (with a cost of \$3,000,000). The engineer on the sessions is *Rick Riccio*. . . . Back together again after a 10-year break, singer *Gary Puckett* and record producer *Jerry Fuller* are working on a new project at *Footprint Sound* recording studios in Sherman Oaks, CA. *Mark Piscitelli* is engineer. . . . At *Skip Saylor Recording* in Los Angeles, singer-songwriter *Herb Pedersen*, known for his work with Linda Ronstadt and Emmylou Harris, is in recording his solo LP for *Sugar Hill Records*. Pedersen is producing and *Jon Gass* is engineering. . . . *Frank Serafine* of *Serafine FX Studio* (West Los Angeles) has just completed production of special sound effects for MGM's motion picture "Bramstorm." In addition, both the musical score and sound effects design for two national advertising campaigns have been recently produced at the studio. . . . At *Group IV Recording*, Hollywood, composer *Mike Post* scoring TV pilot "Big John" for *MGM Studios* with engineer *Dennis Sands*, assisted by *Andy D'Addario*.

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■ **STUDIO TOUR:** Criteria, the Miami recording giant with credits for over 100 gold and platinum records, gears up for digital audio and first rate music video production.

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World Radio History

RECORDING ARTS EDUCATION

by George Petersen

Of all the mail sent to us at Mix from readers, a good portion of it is queries from students looking for a recording education program. Obviously, this is an area of great reader interest.

Student needs vary widely, and somewhere there is a program to suit the needs of almost any pupil. For some students, the trade schools' combination of a short term program emphasizing hands-on experience is the ideal solution, while other students seek a well rounded college education which may include business, music and electronics courses in addition to sound recording theory and practice.

Somewhere between the trade schools and the universities fall other programs which do not easily fit into either category. These would include events such as the Aspen Music Festival, the Syn Aud Con seminars, and dozens of workshops taught by recording studios throughout the nation. NARAS (the National Academy of Recording Arts and Sciences) also offers occasional seminars and events at their local chapters, as does MIEA, the Music Industry Educators Association based in Montreal.

We talked to a small sampling of educators coast to coast about their recording arts programs, and discovered considerable differences in philosophies regarding curricula, facilities, and faculty. Students about to embark on an education in this field are urged to contact at least several schools, and if possible, visit the schools in person before making a decision.

Full Sail Recording Workshops of Orlando, Florida, has four programs of full time, one month workshops in recording and engineering (basic and advanced), live sound and remote recording, and video recording. According to Esther McCoy, the school's assistant director, six sessions are offered each year and are taught at either the Dream Machine (Full Sail's 24 track mobile unit) or at Starke Lake Studios, a 24 track facility in nearby Ocoee, Florida. "Full Sail graduates leave with an excellent grasp of concepts and the experience they need to get a job in the industry, with solid knowledge and 72 hours of hands-on work in a state-of-the-art facility. Our courses are short term, full time - six days a week, nine hours a day for a month and are taught by experienced professionals with major

label projects under their belts."

Sherman Keene, who writes and publishes educational recording/production manuals and coursework, also teaches recording seminars and operates a correspondence school for engineers. He recently returned from Tele Arte, a world class, state-of-the-art facility in Caracas, Venezuela, where he taught an intensive five week seminar for their in-house engineering staff.

"My suggestion to the educators of future engineers," says Keene, "is to make honest students - get the students to stand up in class and come up with intelligent answers to reasonable questions.

"A lot of schools don't use homework or verbal review questions - they don't put the students on the spot. That's part of the problem. If a future employer asks them, 'What do you think about this or that?', it's very important for the employees to look them in the eye and tell them exactly how they feel about the situation, backing up their opinion with facts and figures."

Middle Tennessee State University, in Murfreesboro, has a four year degree program in recording industry management, with courses in audio engineering, production, copyright law, merchandising, and intern-

Berklee Adds Three Studios

The highly rated Berklee College of Music, in Boston, has initiated a new department offering a major in Music Production and Engineering, in order to "provide the music industry with highly skilled, disciplined and fully responsible producers, thoroughly trained in both the business and creative aspects of making master tapes for all types of clients." The creation of this department has entailed the development of some fifteen new courses, the hiring of a dozen new faculty and staff, and the construction of three state-of-the-art recording studios in the building which also houses the Berklee Performance Center. Plans are already in place for future expansion of the program



Berklee's Studio A

and its facilities.

A large part of the MP&E major will be devoted to business and organizational training. The faculty and staff are being selected from the ranks of active producers and engineers, primarily Boston-area studio owners and managers. Each member of the faculty has been brought in for his special expertise in creating tapes for commercial record release, advertising purposes,

or film/TV/AV uses. In addition, guest producers and engineers will visit the upper level classes, bringing multi-track master tapes and production logs to demonstrate how professional projects are mounted.

Overall, the complex will be capable of 24/16/8/4/2 track and mono recording, with SMPTE video interlock for scoring of film and video projects. In

addition, studios A and B are supplied with 36 mike lines each from the Berklee Performance Center stage, facilitating live multi-track recording for albums, video simulcasts and other professional applications.

Two additional control rooms are pre-wired and ready for equipment installation as the MP&E program grows. A new studio D is also in construction to handle 24 track mixdown for the department, with 217 students currently enrolled.

ship. One unique aspect of the program is an annual album project produced by students in the studio production class with Chris Haseleu, MTSU instructor. Songs are selected from student songwriters and are engineered by the advanced technology class at the campus 16 track studio. Later a vote is cast on what songs will appear on the album, which in the past has included a variety of styles: pop, rock, country, reggae, new wave and gospel.

The program at Columbia College, (Chicago, IL,) a four year liberal arts college, offers a variety of directions of study in addition to their three semester Sound Engineering class. Some of their other music industry courses include Legal Aspects of Entertainment, Music and Sound Industry Marketing, Music Retailing, Talent Agencies and Management, Entrepreneurship, Publishing, and Record Production.

What is the value of a degree to the aspiring producer/engineer? According to H. Thaine Lyman, Columbia's program chairman, "In terms of sitting down in front of a console and making it work, absolutely none. An electron is an electron. But certainly when you get into the business end, you actually find out the hard way that

education is important. Not that anyone is going to take a look at your degree and say, 'Now you can do this,' but simply for your own benefit, being able to talk on a peer level, whether it's in the back of a bus on a series of one nighters, or sitting across the table with the owner of a very conservative record company. But if it's simply setting a dial or placing a microphone, a degree doesn't mean a damn thing."

Headlands University, in Mendocino, CA, is a four year residential college focusing on communication technology and the performing arts. The school also has a non-residential program which awards credits and degrees based on non-college work experience. Recording courses emphasize pop music production and are taught at the school's eight track studio, and advanced courses are taught at nearby studios, including the 24 track Mendocino Recording Company.

The College for Recording Arts, in San Francisco, has a one year diploma program which began eleven years ago. Courses are taught by working industry professionals with a combined total of 64 gold, 17 platinum, and ten Grammy awards between them. The school maintains a small enrollment to insure a low student-to-teacher ratio,

and offers courses in all phases of the music business. Leo De Gar Kulka, who heads the college, added the school's 30% foreign enrollment is another plus for the students: "I feel I'm training the record executives of tomorrow. One graduate, who took a job in Germany, felt good about being able to contact former classmates who had jobs in Japan, Spain, and America. A school should not only be a place to learn, but to make contacts to last the rest of their lives."

Omega Studios, in Kensington, MD, offers both beginning and advanced practical recording engineering programs in addition to their Supersession program, a ten-day intensive workshop/seminar. Rob Yesbek, Omega owner, has also designed a version of his beginning and advanced courses for use at The American University in Washington, D.C.

Yesbek sees advantages to the in-studio approach to education. "A classroom program doesn't give the perspective necessary for dealing with today's high technology industry. In a college program you mix your projects to please yourself. Our classes are taught from the 'please the clients' point of view. After students leave here, they know how to treat a client, whether it's an executive from an ad agency or a producer from a major record label."

Indiana University, in Bloomington, offers a 2½ year AS program in Audio Technology, as well as a BS degree in music with a concentration in that field. Ted Jones, Director of Technical Studies, reports the university has selected David Pickett, formerly of Tonmeister and Abbey Road Studios, as their new Director of Audio Technology starting this fall.

Some of the factors which make up a successful recording arts program, according to Jones, are, "a reasonably well-equipped facility; an on-going internship program; and an educational plan which strikes a balance between art and technology. We hope to train good ears, not repair techs," he added.

The Recording Institute of Detroit has been teaching audio recording courses since 1976. According to Leslie Vocino, both beginning and advanced programs are available, and the courses are taught at The Disc, a 24 track facility in East Detroit.

Vocino feels that trade schools offer certain advantages over collegiate programs. "I think it's the hands-on experience of actually being in the studio - a real one. We're a commercial recording studio as well, and we teach the students on our 24 track machines. We have a beginners course, which meets

Surrey University Offers John Lennon Scholarship

Among modern technological universities in the United Kingdom, Surrey University is one of the youngest, yet it was the first to establish a Department of Music and is still the only one to offer BMus degree courses. The ethos of the university is the professional and practical approach to academic study, in which courses include a strongly vocational content. The latest developments of technology are applied and vital links are forged with industry and the surrounding community. This has been reflected in the activities of the Music Department, not only in introducing into its firmly structured BMus course examinable options in composition, performance and conducting, but also in establishing the BMus (Tonmeister) degree in which the study of music is paralleled by the study and practice of recording techniques and associated technology. Most students at the university spend a year working in industry, and students pursuing the BMus (Tonmeister) course have the opportuni-

ty of this year working in a professional recording studio. The success of these two courses and Surrey's growing reputation in the fields of recording, composition, conducting, performance, and research, in addition to the value of their postgraduate courses (MMus, MPhil, PhD), have led the school to create further opportunities in the form of one-year courses, designed particularly for the needs and interests of overseas students - Junior Year Abroad (for undergraduates) and Diplomas (for graduates).

Most recently the University has initiated the PRS John Lennon Memorial Scholarship, a one-year program available to a student accepted by the Music Department for postgraduate studies (DipMus or MMus) which incorporate work in recording techniques. This scholarship is offered by the Performing Right Society and is intended to cover fees for the chosen course up to a maximum of 2000 English pounds. Interested candidates should write for an application form to the Department of Music, University of Surrey, Guildford GU2 5XH, England. On receipt of the application form, the selection of the successful candidate will be by the Music Department in association with the Performing Right Society.

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Greg Silsby talks about the New Sentry® 500 studio monitor...

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The term “studio monitor” is often a misnomer. It's easy to tack a label on a box and call it a “studio monitor” without including the best precision engineering available, and careful attention to application design. Too often, these all-important considerations are traded-off for such marketing reasons as high cosmetic appeal, a particular type of popular sound, and low component manufacturing cost. While all of this may translate into high profit margins for the manufacturer it does nothing to produce a reliable standard for audio testing and evaluation.

Linear frequency response

The Sentry 500 follows the well-established Electro-Voice tradition of combining the most advanced engineering and manufacturing technology available. The Sentry 500 has been carefully thought-out and built to meet the specific needs of the audio professional. Like the smaller Sentry 100A, the Sentry 500 provides linear response throughout its range (40-18,000 Hz \pm 3 dB). In fact, because the two systems share this linearity, program material may be mixed on one, sweetened on the other, with



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To qualify as a truly accurate test device, a monitor speaker system must faithfully reproduce the wide dynamic range required by today's music and current digital recording techniques, and do it with low distortion. This is no problem for the Sentry 500 which combines the high efficiency of an optimally-tuned Thiele-aligned cabinet to the brute power handling of Electro-Voice Sentry components. Consider what you get with proven

E-V components in the Sentry 500: the Sentry 500 will deliver 96 dB at one meter with only one watt and yet will handle 100 watts continuous program material with 6 dB of headroom. That's 400 watts on peaks! The same Super-Dome®/Director combination which maintains uniform dispersion of linear response out to 18 kHz also handles a full 25 watts of program power or 5 times the power handling capacity of most “high powered” tweeters. After all, tweeters should convert electrical energy to acoustic energy—not to smoke and fire.

The Sentry 500 is another no-nonsense Electro-Voice Sentry design with the incredible performance and credible price you've learned to expect from E-V. I'd like to tell you the rest of the Sentry 500 story and send you the complete Engineering Data Sheet. Write to me: Greg Silsby, Market Development Manager/Professional Markets, Electro-Voice, Inc., 600 Cecil Street, Buchanan, Michigan 49107.

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once a week for ten weeks, and a 12 week advanced course which meets once a week for five hours."

The Broadcast Communication Arts department at San Francisco State offers three separate programs in audio recording: 1) a BA/MA program in broadcast which includes an audio emphasis option; 2) a music recording industry certificate program, taught in conjunction with the music department, which is open to non-students as well as regular university students; and 3) summer recording workshops (beginning and advanced), six week intensive studies in commercial recording open to students and non-students.

Paul Smith, who heads the summer workshop program, explained the SF State BCA department is production oriented, with an extensive internship program in TV, radio, and audio studios. He advises students to look carefully when selecting a school. "At the onset, students should know where they want to go in the industry. Some students are production oriented, and want to work with musicians. Others want to be mixers. Some opt for the technical side, in maintenance or designing. Once this major criterion has been selected, students can then start shopping around to find a school that gives them what they need."

The Peabody Institute of the John Hopkins University, in Baltimore, MD, is the oldest conservatory of music in the country, established in 1857. The school offers a Bachelor of Recording Arts and Sciences program, and Alan Kefauver explains their intention is to produce a musically literate, competent engineer. "Our Bachelor of Recording Arts and Sciences is a five year program which combines the disciplines of music and electric engineering. Students basically take the same programs as the regular music major at Peabody, plus the first three years of the electrical engineering program at the GWC Whiting School of Engineering at John Hopkins University. We figure about a 40% attrition rate. It's a killer."

The University of Miami's school of music offers a four year program in Music Engineering headed by John Woram, author of *Recording Studio Handbook* and editor of *db Magazine*. The program, considered by many to be one of the nation's best, is comprehensive and demanding, and their last graduating class is 100% employed. Notes Woram, "It's been a gradual evolution, [with the program] becoming more and more technical. We've been getting into video and computers and one of our problems right now is trying to fit six years of schooling into four years. We're seriously thinking about a double major program for those who want it."

"We tell our students from the beginning that this is not a job placement service and the industry is a small one and it's going through bad times. If they're looking for a high paying job in a glamorous field, we tell them to look elsewhere."

The Commercial Music Program at Memphis State has been ongoing for six years and offers a BFA degree with concentrations in music business and recording engineering. The university offers an MCI equipped 24 track studio and a video studio. Interacting with a large number of recording facilities in the Memphis area, the school has an extensive internship program, and many of the owners and engineers from local studios serve on the school's advisory board.

The Institute of Audio Research, in New York City, was founded 14 years ago by Albert Grundy. The one-year I.A.R. program stresses technical training, with coursework in electronics, audio system design, mathematics and digital logic, as well as audio engineering, disk cutting and studio synthesizer labs. Grundy, I.A.R. President, explained the school's philosophy. "The institute was started primarily

There are many ways to split a mic, but only one way is best

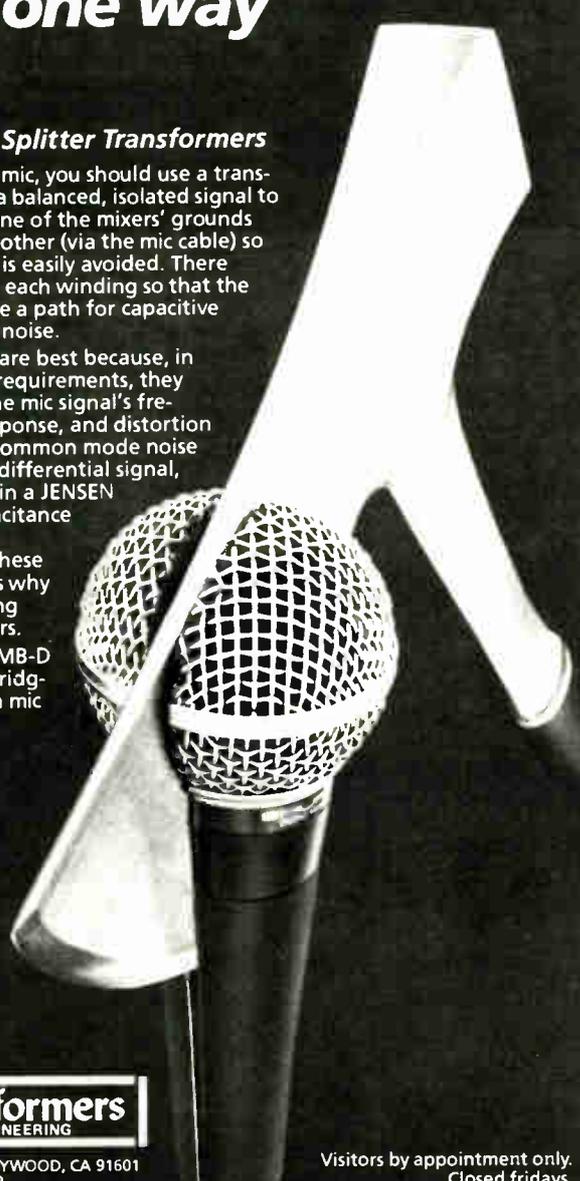
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When you need to split a mic, you should use a transformer because it provides a balanced, isolated signal to the input of each mixer; none of the mixers' grounds need be connected to each other (via the mic cable) so ground-loop induced noise is easily avoided. There must be a Faraday shield on each winding so that the transformer will not provide a path for capacitive coupling of common mode noise.

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But the only way to really appreciate what has gone into the Ramsa WR-8118, or its smaller 12 channel version, the WR-8112, is to see your nearest Ramsa dealer for a hands-on demonstration.

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because people in the business lacked technical knowledge of how equipment worked. I have recently been involved with the education committees of AES and SPARS, and studios have continually been bringing up the fact that they want people with technical experience and training rather than 'console jockeys.' With the coming digital technology and CD disks there is a need for higher quality engineers, and technical training is important."

Dr. Richard Ranta, dean of the

program, has found that, "The very best entré into the industry is having internship experience, as the companies can see first hand what the students are capable of doing. Out of these experiences, a number of them will end up working in the studios they interned in, either as part time or full time employees."

The Trebas Institute has facilities in Toronto, Ottawa and Montreal and offers a two year program in recording arts. All students take the

same courses the first year, then specialize in one of four areas the second year. The school features high calibre guest speakers (Clive Davis, Tom Dowd, Bill Porter, Phil Ramone, etc.) in addition to the regular faculty. David Leonard, the executive director of Trebas, sees the effect that recording education is having on the industry. "The excellent schools available today are changing the way the industry operates. We've found the days are gone when a person could get a job in

Power Station's Bob Walters on Hiring Entry Level Personnel

by Diane Rapaport

Tony Bongiovi and Bob Walters co-own Power Station Recording Studios, one of New York City's major recording facilities. It's an ideal partnership: Bongiovi, a successful producer, studio engineer, and acoustician; and Walters, a cordial, enthusiastic business professional whose savvy is enhanced by his early experience as a singer, trumpet player and a successful band leader ("I can understand the sensitivity and the insecurities . . .")

Six years ago, Bongiovi and Walters built Power Station to be "a very fine recording facility that would run properly. The fact that it became such a hit is just a tribute to the tremendous input during its development."

In that short time the studio's clients have included The Rolling Stones, Bob Dylan, Diana Ross, Chic, Bruce Springsteen, Carly Simon, Dire Straits, Blondie, and David Bowie.

In a recent interview, Walters talked about what he looks for in hiring entry level people to work at the Power Station. "I'm less interested in experienced people who have learned to handle a console than people who have the susceptibility to understand and the willingness to learn. That's what's important. That's what education provides: it's a background for the technical things to be learned later on.

"Learning to put your hands on equipment is less important than getting all the understanding that other courses give, like math or physics, because they open up your head. Then everything is easy. If you don't have the basic foundations that education gives you, you're not going to learn.

"It's a big thing to be a sound

engineer. Yes, you have to have technical understanding, but that's something many people can acquire. The difference between great and competent sound mixers is not how well they understand the equipment—that's taken for granted—it's their taste in what they hear and their ability to get that certain something on tape. Taste is what it's all about. You can't produce a sound you can't hear.

"The best engineers are also articulate; they know how to converse with clients. If you have an intelligent head, and you know how to articulate and have the proper attitude with it, then with all the technical knowledge behind you, you can create confidence.

"We prefer people who come in here with intelligence and a good education behind them. We prefer to train them into sound mixers from what

we call our gofer department because then they'll learn it our way. I want people who can grow into a situation and work with other people; to take pride in their work, and to cooperate enthusiastically and willingly with their fellow workers.

"We had a very fine man who started working with us in an entry level position two years ago. The first thing out of my mouth when he came here was, 'You could waste two years of your life here. You could be great in the tape library and great with the deliveries, and then when you become an engineering assistant, we may find you don't have it.' Just because you're bright, and can acquire the technical understanding doesn't mean that you'll also acquire the musical taste, the capacity to articulate and create confidence. That's what we'll be looking for . . .!"

Making It in the Recording Studio

by Mack Emerman
president, SPARS; president, Criteria Recording Studios, Miami

Looking for a job in the wonderful world of recording? There seem to be two schools of thought on the subject. First, the bad news, which goes like this:

"Forget it, kid. You haven't got a chance. The good jobs only go to people on the 'inside.' You've got to have 'connections.' Besides, there are no jobs anyway. And if there were, I'd hire my nephew."

And then, just to keep things confusing, you can read the good news:

"Learn to be a recording engineer overnight. Just come to the Fly-by-Night Recording Studio school and in only three weeks, you, too, can be a big-time studio mixer. For 1,000 bucks, we give you a diploma that

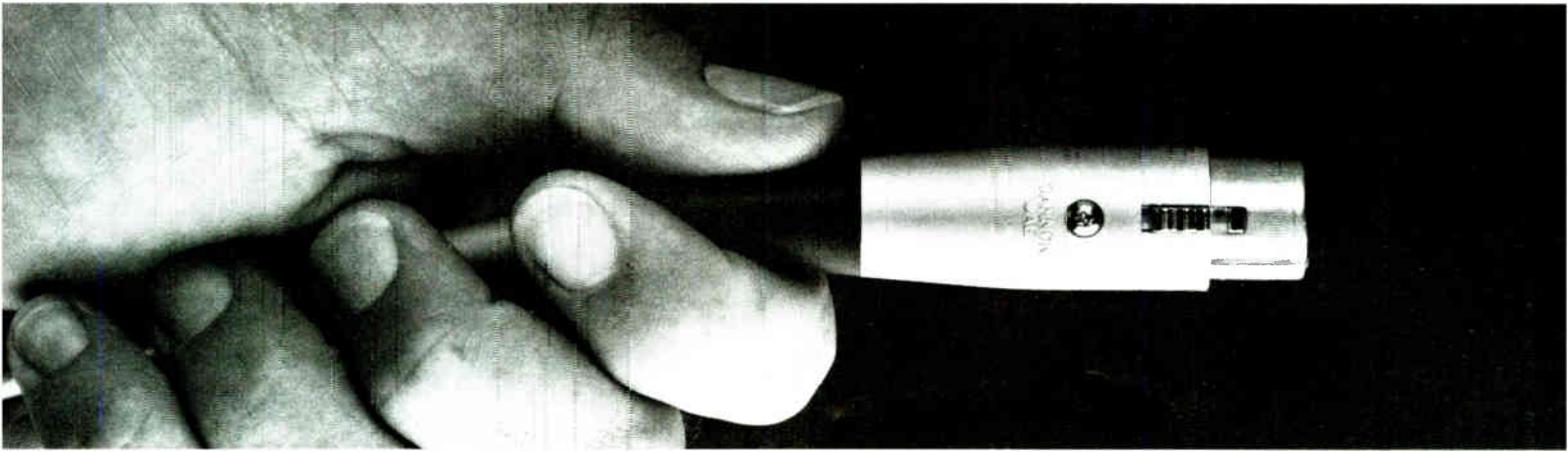
says you're a certified recording engineer. Operators are standing by . . ."

What does all this mean? On the one hand, some industry insiders convey the image that the recording studio is a closed shop. On the other, some "schools" suggest that in a matter of just a few weeks you can be given (that is, sold) your own passport to fame, fortune, and the romance of recording the stars.

What's the real truth? SPARS says it's somewhere in the middle. But first, what's SPARS? Glad you asked. We're the Society of Professional Recording Studios. Our member studios include more than 45 of the top studios around the country. The list includes The Record Plant, Criteria, RCA, Columbia, Motown, United Western, and 42 others.

Most of us "grew up" when life was a lot simpler — at least in the recording studio. A beginner needed to have a good ear and a pleasing personality. Recording studio hardware was really not that complex. Of course, it was built to take more abuse

Protect your investment with a cannon.

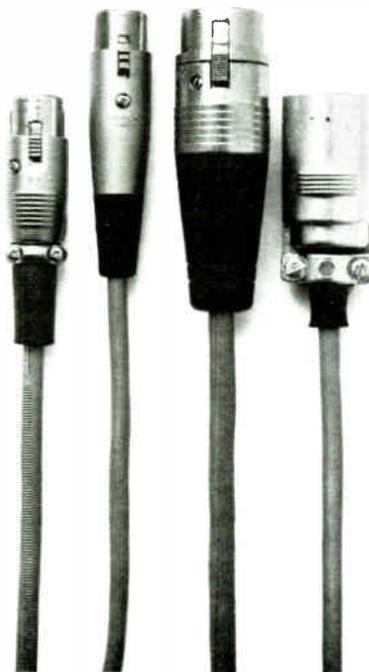


An audio connector by any other name is simply not an ITT Cannon audio connector. Which is precisely why so many audio engineers continue to specify Cannon[®] connectors for use with their audio equipment.

The XLR, the new XLB and XLA series are small, rugged, quick-disconnect connectors designed for use in audio/video and other low level circuit applications where reliability, quiet operation, elimination of mechanical interference and ease of use are necessary. Four different plug styles are available.

The EP connector is ideally suited to applications where extreme ruggedness and versatility are required. The new AP connector is a

Audio Connectors from Cannon



popular choice for heavy duty audio applications and is interchangeable and intermateable with the EP series. Both the EP and AP series may be used where as few as 3, or as many as 18, contacts are required.

The APLNE and AXLNE are specifically designed to handle the special needs of mains and other power supply applications.

For more information, please contact International Products Marketing Manager, ITT Cannon, a division of International Telephone and Telegraph Corporation, 10550 Talbert Avenue, Fountain Valley, CA 92708, (714) 964-7400.

CANNON ITT
The Global Connection

Circle #006 on Reader Service Card



Studer's Secret of Success

In years past, the Studer A80VU has earned widespread acceptance by the world's premier recording studios. And this success story is far from over: top studios continue to choose the A80VU MKIII over other "all new" machines. The secret of this success lies in three basic rules:

1. If it can't be made better, don't change it.
2. If improvements can be made, make them — even if they don't show on the outside.
3. Use longer production runs to hold down final cost.

Now in its third generation, the Studer A80VU series once again offers state-of-the-art performance at a surprisingly modest price. The new A80VU MKIII system incorporates several significant improvements, including:

• **Transformerless Line Amps:** Low output

impedance assures optimum performance even with long cable runs.

- **New Headblock:** Tight spacing of erase and record heads permits exceptionally accurate punch-in and punch-out.
- **Remote Unit:** Full channel remote with 20-address memory autolocator.

Instead of repackaging these changes in an "all new" machine, Studer kept the basic transport — a design with an unprecedented reputation for reliability. Also, because basic tooling costs have long since been amortized, the A80VU MKIII's price has been held down, thus offering a better price/performance ratio.

How much better? Call your nearest Studer representative for details. He'll help make our secret the key to your success.

STUDER REVOX

Studer Revox America, Inc. • 1425 Elm Hill Pike, Nashville, TN 37210 (615) 254-5651
Offices: Los Angeles (213) 780-4234 • New York (212) 255-4462 • Dallas (214) 760-8647 • Canada: Studer Revox Canada, Ltd.
Circle #007 on Reader Service Card

World Radio History

the industry solely because they knew somebody there. It's not just the recording industry anymore - it's the music business. There are many job options available to students besides 24 track studios: recording sound effects, voice recordings, and hotel and convention sound. I know of one man who makes over \$100,000 a year engineering only mono voice recordings and narrations."

The Commercial Music Program at the University of North Alabama doesn't have an on-campus studio, according to Dr. James Simpson. "The UNA program uses this drawback to their advantage by teaching many of their recording courses at the nearby Wishbone Recording Studio, a

well equipped 24 track MCI/Westlake facility. Dr. Simpson explains that their program is "designed so students will learn about the business end of music. Students get a major in music with a minor in business. Most of the courses are one semester, like The Record Company, Music Publishing, Production, and Studio Techniques. A fifth course, Commercial Music Practicum, allows students to do their practicum in almost any phase of the industry, and a



SPARS President Mack Emerman

than the typical hi-fi set, but anyone who could manage his own home stereo system wouldn't have too much trouble getting used to working in a professional studio.

Times have changed. Recording studio technology has gotten more sophisticated than any of us could have imagined just a few years ago, and it's no longer enough for entry-level employees to have nothing but a romantic notion about life in the control room. In the meantime, the economy has taken a downturn, and some marginal studios have gone out of business. In fact, even some not-so-marginal operations have had to do a little belt-tightening in order to stay competitive, and therefore, to stay in business.

And that brings up education. SPARS has recently formed its own education committee, to investigate what needs to be done in this area. Frankly, our motivation is at least partly one of self-interest. Or should I say self preservation?

To put it bluntly, SPARS studio owners can no longer afford to be so casual about who they hire. We need people who have the capability to fit into a complex environment with a minimum of hassle. Unfortunately for beginners, we don't need as many newcomers as there are knocking at our doors. Fortunately for us, we can be selective. And lately we've been learning to be more and more selective. Let's face it, our future prosperity could depend on how wisely we do our present hiring.

Are our doors closed to outsiders? No way. But they're not as wide open as some would have you believe. In order to get in, you're going to have to do your homework. But, despite what you hear from some doomsday prophets, there's usually room for "just one more," provided

that person has what we need.

Our attitude toward formal education has been changing, mostly as a result of the change in formal education itself. Today, there are a number of four-year college degree programs serving the needs of our industry. Just a few years ago, there weren't any. Recording was an almost-unknown topic within audio engineering, and audio engineering itself was a mostly-neglected part of electrical engineering. So, the electrical engineering graduates of yesterday were rarely equipped for employment in recording, and most of us preferred to do our own on-the-job training for new employees.

Today, we can't afford that luxury. We need people who already have a good foundation in the basics of our industry. We don't need people who think they are already great recording engineers, though. To us, recording is a profession, not a hobby. It takes years of education, and then, years of job experience, before a person becomes a pro.

Unfortunately, many beginners think of our industry only in terms of jobs related to top-40 record production. That's unfortunate, because while the record industry itself has been a little "soft" lately, the slack has been more than taken up by other aspects of audio. Suddenly, the video industry has discovered the advantages of good sound. And the same holds true for film work. Sound reinforcement is also getting more and more sophisticated. And all of these areas are being invaded by the computer.

In a way, these events might even make it a good time to be just

lot of students elect to go to a studio for on-the-job training experience. The studios in the area are very cooperative about that."

Millikin University in Decatur, IL, offers a BM degree with a commercial music emphasis. The Millikin program is definitely jobs-oriented, with coursework in the creative music, business, and technical aspects of the industry. Stephen Beck, the Director of Commercial Music explained the program's goals. "We want to be regarded as a great four year training department for firms in the music industry." Recording courses are taught at the school's new 24 track MCI facility which went on line in February of this year. ■

getting started. Perhaps more than ever before, the industry needs talented beginners who can grow into positions of responsibility. Our member studios—and indeed, the industry in general—needs all the help it can get in keeping pace with the changing technology. Automation, digital audio, video interfacing, sound reinforcement - these are all areas in which even many "old timers" have little practical experience. And so the beginner who has had the perseverance to get a good solid education in the latest audio technology may have a much better chance of getting past that closed door, and once inside, of staying there.

At SPARS, we're getting more and more interested in the educational background of those who come to us looking for jobs. In today's high-technology world, we can no longer afford to ignore this aspect of a job applicant's resume.

What about you? If you're looking for a quick path into a glamorous high-paying job, we at SPARS would suggest that you look elsewhere. However, if you've got the time and the interest to put in some long hours getting the background needed for an entry-level job involving even longer hours and low pay, then don't get put off by those tales of no room in the studio.

Don't get discouraged. The glamour and the high pay will come later, after you've proven yourself. And as for getting started in these difficult times, the news is not all bad. At least one major university program reports a 100% hiring rate for its latest graduating class. Of course, of all those who graduated, not one started at the top. However, some of them might get there a little faster because of a good education. And one of them could be you. Interested? ■

1983 DIRECTORY OF RECORDING SCHOOLS, SEMINARS & PROGRAMS

Following is a briefly annotated list of schools and programs offered in the areas of audio and music education, compiled from questionnaires received from those institutions during April and May, 1983. The courses vary greatly in scope, intent and cost and we urge those interested in attending any program to investigate very carefully before making their decisions. Mix claims no responsibility for the accuracy of the information provided by the institutions.

EASTERN

ASPEN MUSIC FESTIVAL

1860 Broadway, Rm 401, New York, NY 10023
(212) 581-2196
Chief Administrator: Harold Boxer, Alan P. Kelaover
Program: **Aspen Audio Institute**

AUDIO RECORDING TECHNOLOGY INSTITUTE

Sponsor: Dawn, Inc.
756 Main St., Farmingdale, NY 11745
(516) 454-8999

Chief Administrator: James J. Bernard

The Audio Recording Technology Institute offers a three-level audio training program with emphasis on "hands on equipment" throughout the program. Courses include Basic A101, Advanced A201 and Recording Workshop A301. The majority of the time students are applying their skills developed in the Basic Program towards mixing and live recording sessions. A separate course on tape spinning is also offered. The complete program extends for thirty (30) weeks with a moderate tuition fee. The Audio Recording Technology Institute is licensed by the New York State Department of Education and approved for veterans' College credit for the programs may be awarded. Prerequisites: High School Diploma.

AUDIO WORKSHOP SCHOOL OF SOUND

Sponsor: Communications Research Group, Inc.
84 Long Ave., Belmont, MA 02178
(617) 484-8949

Chief Administrator: Stephen C. Langstaff

Courses in the fundamentals of Studio and Stage Sound Production, ear training, equipment maintenance, media businesses. Video production to start in fall. Facilities include automated 24-track (MC1 & Studer) and 16-track (Olan, CMI, & digital) studios. Except for 4.5-week intensive program, courses generally taught evenings and weekends, and range in cost from \$75 to \$2,000, in length from 15 to 160 hours. The school is licensed by the Massachusetts Department of Education, and was founded in 1972. Certified instructors, guest speakers, lectures, demonstrations, workshops, tours, and multi-track student production projects. Completion certificate. Over 700 graduates from nine countries.

BERKLEE COLLEGE OF MUSIC

1140 Boylston St., Boston, MA 02215
(617) 266-1400, ex. 224
Chief Administrator: Wayne Wadhams, Chairman; Joe Hostetter, Studio Manager
Program: **Music Production & Engineering**

CAMBRIDGE CENTER FOR ADULT EDUCATION

Splice of Life/6 Sparhawk St.,
Brighton, MA 02135
(617) 782-3384
Chief Administrator: David Zucherman
Program: **The Recording Studio**



CENTER FOR THE MEDIA ARTS
New York, NY

CENTER FOR THE MEDIA ARTS — NATIONAL ASSOCIATION OF TRADE & TECHNICAL SCHOOLS

226 W. 26th St., New York, NY 10001
(212) 807-6670

Chief Administrator: Harry Hirsch

Program: **Audio & Recording Artist Program**

(1700 hours) Comprehensive training for professional careers in multi-track recording, music mixing, audio editing, audio for TV & film, audio electronics, equip. repair, SMPTE code sweetening. Course is equip. intensive, featuring hands-on practical training in operations of state-of-the-art studio & location recording equipment. Course content emphasizes creative skills, equip. operation & maintenance, & business aspects of the recording industry. Curriculum is highlighted by individual workstations for mixing & editing & features live music recording in state-of-the-art 24-track recording studio that interconnects with video production studios. Prerequisites: high school diploma & admissions exam & faculty screening. Accreditation: NATTS & V.A. financial aid available to eligible students. Cost: \$6,100.

CRITERIA STUDIOS

1755 N.E. 149th St., Miami, FL 33181
(305) 947-5611, (305) 688-1791
Chief Administrator: Steve Klein

Program: **Basic/Advanced Recording Techniques**

EASTERN ARTIST'S RECORDING STUDIO (EARS)

36 Meadow St., East Orange, NJ 07017
(201) 673-5650

Chief Administrator: Christopher Rich (Asst. Manager)

Program: **E.A.R.S. AEC (Audio Engineering Course)**

The E.A.R.S. Audio Engineering Course is offered in two levels: introduction to multi-tracking and level II advanced engineering and mixing techniques. Each class is eleven weeks in duration and is held in the studio during weekend hours. The E.A.R.S. AEC features a hands-on approach to teaching skills necessary to become an engineer. Students will get in-depth experience in techniques involving microphone technique, console routing, tape machine operation, effects patching, mixing and editing. Classes re-start every 12 weeks and each class is limited to no more than nine students. Applications are available upon request and should be submitted 1 month prior to start of class.

FULL SAIL RECORDERS, INC.

660 Douglas Ave., Altamonte Springs
(Orlando), FL 32701
(305) 788-2450

Chief Administrator: Jon Phelps

Program: **Full Sail Recording Workshop**

Course: Full Sail Recording Workshop is an intensive month-long program teaching recording engineering, live sound reinforcement and video recording, with a hands-on practical approach. Taught by professional engineers, producers, studio designers, in state-of-the-art studios with emphasis on career preparation.



FULL SAIL RECORDERS, INC.
Altamonte Springs, FL

Prerequisites: None

Accreditation: Licensed by Florida Board of Education

GEORGIA STATE UNIVERSITY

University Plaza, Atlanta, GA 30303
(404) 658-3513

Chief Administrator: Carter D. Thomas, Department Chairman
Program: **Commercial Music/Recording**



INSTITUTE OF AUDIO RESEARCH
New York, NY

INSTITUTE OF AUDIO RESEARCH

64 University Place, Greenwich Village, New York, NY 10003
(212) 577-7580 or 1 (800) 847-4187

Chief Administrator: Philip Stein, Director

Program: **Institute of Audio Research - School of Multi-Track Recording Technology**

KEWALLS AUDIO WORKSHOPS

77 Bayshore Rd., Bayshore, NY 11706
(516) 586-2486

Chief Administrator: Keith A. Gutschwager

Program: **Kewall Recording Studio & Workshops**

LEBANON VALLEY COLLEGE

Annville, PA 17003

(717) 867-4411, ext. 219

Chief Administrator: John J. Uhi

Program: **Recording Technology Major**

JON MILLER SCHOOL FOR RECORDING ARTS & SCIENCES

Sponsor: Jon Miller Production Studios
7249 Airport Rd., Bath, PA 18014
(215) 837-7550

Chief Administrator: Jon K. Miller

THE MUSIC BUSINESS INSTITUTE

2970 Peachtree Rd., Suite 400,
Atlanta, GA 30305
(404) 231-3303

Chief Administrator: Mert Paul

□ A Career Program in Music. Course includes recording,

studio, concert and video production, artist representation and management; retailing and wholesaling; record promotion and marketing; copyright and music industry law; songwriters and music publishing, and more. The Music Business Institute is accredited by the Southern Association of Colleges and Schools, approved and licensed by the State of Georgia Department of Education, approved by the Social Security Administration for Education Benefits, approved by the Georgia Department of Human Resources Division of Vocational Rehabilitation, and authorized under Federal law to enroll non-immigrant alien students. Financial aid, including Pell Grant, is available.

NEW SCHOOL FOR SOCIAL RESEARCH

66 West 12th St., New York, NY 10011
(212) 925-3721
Chief Administrator: Hank O'Neal
Program: **Composers Theatre Program**

NEW YORK UNIVERSITY

35 West 4th St., Rm 777, New York, NY 10003
(212) 598-3491
Chief Administrator: Prof. Richard L. Brodenick, Director
Program: **Music Business and Technology Program**

NORTHERN VIRGINIA COMMUNITY COLLEGE

1000 Harry Flood Byrd Highway,
Sterling, VA 22170
(703) 323-4527
Chief Administrator: Dee Wayne Whits, Division Chairman
Program: **Recording Technology (Loudoun Campus)**

OMEGA STUDIOS' SCHOOL OF APPLIED RECORDING ARTS & SCIENCES

Sponsor: Omega Recording Studios
10518 Connecticut Ave., Kensington MD 20895
(301) 946-4686
Chief Administrator: W. Robert Yesbek
Omega Studios offers three curricula in professional recording engineering. The Basic program is an 8 week course consisting of 32 hours of lecture, workshop, and hands-on training in Omega's 24 track recording studios. The Advanced program is a 10-week course providing 40 hours of instruction, more than half of which is hands-on instruction. The courses are \$395 and \$495 respectively. The third program is called Supercession, a 10-day intensive workshop/seminar featuring an intensive program of lectures, workshops and sessions equal to the entire 18 week program, plus several big name lecturers such as Ed Greene, Larry Boden, Mac Emerman, Joe Tarsia, Bob Yesbek, Jay Chattaway, and others. Every year Supercession features presentations by several of these well known people. The Basic Supercession is \$495, and the Advanced is \$1,195. Accommodations are available for a small extra cost. The Omega Courses are approved by the Maryland State Board for Higher Education, accredited by American University and Omega School is a member of CAPAPS.

PEABODY INSTITUTE OF THE JOHNS HOPKINS UNIVERSITY

1 E. Mt. Vernon Pl., Baltimore, MD 21202
(301) 659-8110 659-8136
Chief Administrator: Alan P. Kelauffer
Program: **Bachelor of Music, Recording Arts & Sciences**
The Peabody Conservatory of Music and The Johns Hopkins University have combined resources to provide one of the finest training programs in audio engineering in the country. Students will receive hands-on experience, assisting in recording over 300 concert and studio events annually at Peabody. In addition, students will take courses in basic and multi track recording, systems design, score reading, sensory communication and electronic music in conjunction with electrical engineering courses at Hopkins and the standard curriculum leading to a Bachelor of Music Degree at Peabody. Candidates should possess a high school degree or equivalent and must audition in their major performance field.

RBY RECORDING/VIDEO STUDIO

920 N. Main St., Southbury, CT 06488
(203) 264-3666
Chief Administrator: Marjorie Jones
Program: **RBY Hands-On Audio & Video Courses**

SKIDMORE COLLEGE, DEPT. OF MUSIC

Saratoga Springs, NY 12866
(518) 584-5000 ext 604
Chief Administrator: Dr. Isabelle Williams, Chair, Dept. of Music, Arthur Snay, Instructor in Electronic Music & Sound Recording
Program: **Introduction to Electronic Music (MU 255) & Sound Recording**

SOMERVILLE MEDIA ACTION PROJECT

175 Elm St., Somerville, MA 02144
(617) 625-7882
Chief Administrator: Bruce Petschek
Program: **Audio & Video Recording Techniques**

RECORDING SCHOOLS, SEMINARS & PROGRAMS

SOUND COTTAGE

P.O. Box 513, Port Jefferson Station, NY 11776
(516) 928-9397
Chief Administrator: Jim Rattazzi
Program: **Introduction to Multi-track Recording**

THE SOUND ROOM

325 Patterson Ave., Fort Oglethorpe, GA 30742
(404) 866-2432
Chief Administrator: Steve Mullinix
Program: **Basic Recording Engineering**

SOUNTEC STUDIOS

25 Van Zant E. Norwalk, CT 06855
(203) 854-3433
Chief Administrator: Doug McLennan
Program: **Recording Engineering Class**

STATE UNIVERSITY OF NEW YORK, COLLEGE AT FREDONIA

Mason Hall, SUNY Fredonia, NY 14064
(716) 673-3153
Chief Administrator: David Moulton, Chairman, Sound Recording Technology
Program: **Bachelor of Science in Sound Recording Technology**

SYRACUSE UNIVERSITY

215 University Place, Syracuse, NY 13210
(315) 423-4004
Chief Administrator: Prof. Peter Moller, Chairman
Program: **Telecommunications/Film Dept.**

TROD NOSSEL RECORDING STUDIOS

10 George St., Box 57, Wallingford, CT 06492
(203) 269-4465
Chief Administrator: Richard P. Robinson
Program: **Modern Recording Techniques I & II**

UNIQUE RECORDING STUDIOS

701 7th Ave., New York, NY 10036
(212) 921-1711
Chief Administrator: Joanne Georgio
Program: **site of classes by the Institute of Audio Recording**

UNIVERSITY OF MIAMI, SCHOOL OF MUSIC

University of Miami, Coral Gables, FL 33124
(305) 284-2439
Chief Administrator: John Woram/Ken Pohlmann
Program: **Music Engineering**

CENTRAL

BELMONT COLLEGE SCHOOL OF BUSINESS

Belmont College, Nashville, TN 37203
(615) 385-6784
Chief Administrator: Dr. Jay Collins, Director
Program: **College for Recording Arts**

BROWN INSTITUTE

3123 E. Lake St., Minneapolis, MN 55406
(612) 721-2481
Chief Administrator: Mr. Bill Johnson
Program: **Audio Technology & Recording Techniques**

**To save you
time and money
we've just spent over
546 hours training your
next employee!**

When money and time are tight, you can't afford to train an employee from scratch. Our graduates have spent a full year in an intensive study of Audio Engineering, Music Production, Studio Electronics, Music Business and Finance, Copyright Laws and Entertainment Contracts. They're young, knowledgeable, and—because they're well trained—effective from the start. Graduates and referrals among the Majors!

If you are in need of someone already possessing the basic knowledge and skills of the industry, we might just have the person to fit your situation.



So call or
write us at:

COLLEGE FOR RECORDING ARTS

665 Harrison Street, San Francisco, California 94107
Phone: (415) 781-6306

P.S. If you know a promising and talented person that you'd like to help along, why not let us train them for you!

The school is accredited by the Accrediting Commission of the National Association of Trade and Technical Schools (NATTS), approved by the Calif. Superintendent of Public Instruction, approved for Veteran training, and is authorized under Federal law to enroll non-immigrant alien students. It is also endorsed by the National Academy for Recording Arts and Sciences Training Institute.

Circle #008 on Reader Service Card

CASE WESTERN RESERVE UNIVERSITY & THE CLEVELAND INSTITUTE OF MUSIC
 University Circle, Cleveland, OH 44106
 (216) 868-2400 (CWRU), 791-5165 (CIM)
 Chief Administrator: Dr. Peter Webster (CWRU), Mr. David Boelle (CIM)
 Program: Bachelor of Arts in Music; special emphasis in Audio Recording Technology

CEDAR VALLEY COMMUNITY COLLEGE
 3730 N. Dallas Ave., Lancaster, TX 75134
 (214) 472-9120
 Chief Administrator: Dr. Floyd Elkins, Pres.; Dr. M. Davidson, Chairperson of Div. of Com. Hum.
 Program: Commercial Music Recording Technology 2-year Associate degree

This two-year program is designed to provide the technical and musical skills necessary in the field of recording technology. In addition to preparing the student in vocal and instrumental commercial music techniques, training is provided in basic recording skills such as microphone selection and placement, mixdown techniques, master tape production, studio techniques, trouble shoot, and session procedures.
 Emphasis is placed on the specific needs of the commercial musician in the field of recording.

COLUMBIA COLLEGE OF CHICAGO
 600 South Michigan Ave., Chicago, IL 60605
 (312) 664-1600
 Chief Administrator: H. Thane Lyman, Chairman, Broadcast Communications

Sound Engineering I is offered in a three-semester sequence. Sound Engineering I deals with the electronics, language and equipment. Sound Engineering II is taught at a state-of-the-art 24 track professional recording facility. Special attention is given to 16 mm and 34 mm film sound synchronization and mixing, acoustic design and studio recording. Sound Engineering III is split into production teams, each required to produce and record a professional quality master. The teams are allowed 20 hours of recording and mixing time. Professional recording engineers are available to assist in any way necessary. A certificate is issued upon successful completion of the course.

Additional sound related courses are offered in the Arts and Entertainment Management Department, such as Fundamentals of Record Production I/II, The Record Producer Arranger, Survey of the Recording Industry and Career Opportunities in Music; Art & Business of Recording I/II, Music and Sound Industry Marketing, Record Production in the Studio, Decision Making in the Record Business, Music and Sound Industry Retail. Sound courses are also offered in the Film Department such as Sound Studio, Sound Technique and Introduction, and Special Seminar: The Mix in Music and Sound Effects Editing.

HEDDEN WEST RECORDERS
 1200 Remington Rd., Schaumburg, IL 60195
 (312) 885-1330
 Chief Administrator: Michael Freeman
 Program: Hedden West Recorders Workshop

HILLSBORO HIGH SCHOOL — NASHVILLE METRO BOARD OF EDUCATION
 4817 Hillsboro Rd., Hillsboro High School, Atlanta, Georgia
 Program: Nashville, TN 37205
 (615) 981-0911 ext. 60
 Chief Administrator: V. Gabbany
 Program: Hillsboro Recording Program

INDIANA UNIVERSITY, SCHOOL OF MUSIC
 Bloomington, IN 47405
 (317) 335-2931
 Chief Administrator: Ted W. Jones, Director of Technical Studies or David Proffitt, Director of Audio Technology
 Program: Associate of Science in Audio Technology

The Associate of Science in Audio Technology offers training for audio technician, repairment and occupations in music production. Courses in audio techniques, equipment operation, maintenance, acoustics, electronics, and musical styles stress practical experience. State-of-the-art equipment is available on 24 and 48 track. Over 900 concerts are produced annually in a 500 seat recital hall and the 1460 seat Musical Arts Center, one of the most advanced opera and concert halls in the country. Audio Technology courses can be used also in the Bachelor of Science in Music and the Bachelor of Arts Individualized Major degrees. Apply to the Music Admissions Office.

JEWEL RECORDING CO.
 1594 Kinney Ave., Cincinnati, OH 45211
 (513) 522-9336
 Chief Administrator: Carl Edmondson
 Program: Jewel Audio Engineering

Audio School of Multi-track Recording Technology. Now, you have the rare opportunity to master the art and science of professional multi-track recording by attending The Jewel School of Multi-Track Recording. Whether you want to start a new career, advance in your present career, or enhance your performing

RECORDING SCHOOLS, SEMINARS & PROGRAMS

capabilities. Our main goal is to give you the highest quality instruction in a short-term course. Each student will learn the "how-to's" of editing, equalizing, mixing, soloing, alignment and many other aspects of recording and mixing on our equipment. You will work in a state-of-the-art 24 track studio equipped with MCI, Studer, Neumann and top quality tape machines, dbx noise reduction on all channels. Many of our graduates are on their way to a successful career in the recording industry.

KANSAS STATE UNIVERSITY MUSIC DEPT.
 Manhattan, KS 66506
 (913) 532-5740
 Chief Administrator: Hanley Jackson
 Program: Electronic Music

DAVE KENNEDY RECORDING STUDIOS
 8006 W. Appleton Ave., Milwaukee, WI 53218
 (414) 527-3146
 Chief Administrator: Mr. Dave Kennedy
 Program: Dave Kennedy Audio Recording Engineering School

Prerequisite: none. State of Wisconsin approved. Schedules based on student schedules and availability. Fees: \$650, includes all materials, tape, equipment, etc. Class lengths are 100-110 hrs total, average 14 meetings per week for approx. 6 weeks. Classes run every 2 months (approx.), max. 7 students per class. Students learn all aspects of recording beginning with tape recorder maintenance, alignment, etc., and extensive editing exercises. They work with narrators and musicians throughout the course to get a full understanding of all aspects of recording—not just the glamorous ones. We offer a good, solid education in audio recording engineering, preparing our students for the working recording world.

MEMPHIS STATE UNIVERSITY COLLEGE OF COMMUNICATION & FINE ARTS/DEPT. OF MUSIC
 Memphis, TN 38152
 (901) 454-2359
 Chief Administrator: Dr. Richard B. Hunt, Dean
 Program: Commercial Music Program

Bachelor of Fine Arts degree is offered with concentrations in Music Business and Recording Engineering. A mission oriented upon completion of semester-hour, quality point average of at least 2.8, including specified college algebra and accounting courses with C or better. Typing proficiency required. Facilities include 24 track MCI equipped control room, equipped to three studios, one small one 900sq ft. in electronic music with MOCOG 3C synthesizer. The 24 track system is connected to a 1 video tape studio. All equipment state-of-the-art. Bachelor of Music degree in Studio Live-Performance and Composition Arranging also available.

MIDDLE TENNESSEE STATE UNIVERSITY
 Box 21, MTSU, Murfreesboro, TN 37132
 (615) 898-2814
 Chief Administrator: Geoffrey Hill
 Program: Recording Industry Management

This four-year program leads to a Bachelor of Science in Recording Industry Management (RIM). RIM offers over 43 semester hours of specialized training in the recording industry. Courses include audio engineering, music production, copyright law, artist career development, merchandising, promotional promotion and publicity, record store operation, studio administration and others. It prepares students for entry level positions in audio engineering and all business aspects of the recording industry. Video applications are available through a minor in Mass Communications. The program has an on-campus 16 track professional studio. Electronics, music and business courses are available through other departments.

MILLIKIN UNIVERSITY — SCHOOL OF MUSIC
 1184 W. Main St., Decatur, IL 62522
 (217) 424-6300
 Chief Administrator: Dr. A. Wesley Tower, Dean, Stephen L. Beck, Director of Commercial Music
 Program: Bachelor of Music - Major in Commercial Music
 The Bachelor of Music degree with a major in Commercial Music is a new, four-year program of study designed to provide



MILLIKIN UNIVERSITY SCHOOL OF MUSIC
 Decatur, IL

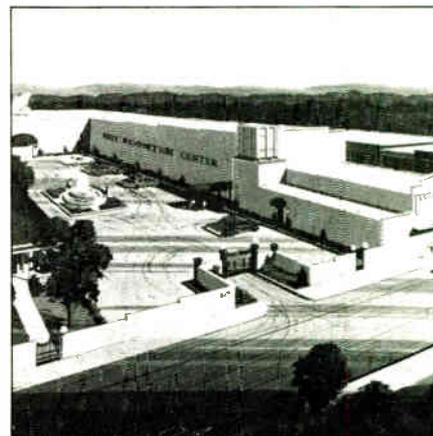
undergraduates with a solid base of traditional and commercial music training, complemented with extensive course work in audio recording engineering and production techniques, specific training and practical experiences in composing, arranging and performing, and, extensive laboratory experience in the 24 track recording studio.

The commercial music recording studio features an MCI 636 recording console, MCI JH24 24 track recorder with A/L III, and two MCI JH11G 2 track mastering recorders. Complementing the major equipment is JBL monitoring with Yamaha power amps, Echo-plate reverberation, signal processing equipment by dbx, Audioarts Compressor UREI, White, Dolby and microphones by Neumann AKG, Sennheiser, Crown, Shure. Audio Technica and Pearl.

Millikin University School of Music is a full member of the National Association of the Schools of Music (NASM). The school has a long and distinguished history as a center for professional music training and offers many career preparation options in music.

THE MULTI-TRACK RECORDING CLASS
 Irving, TX 75060
 (214) 438-8248

Chief Administrator: Phil York
 Description: Complete start-up class for doing studio recording professionally, earning money in industry. 24 track recording is taught on MCI equipment. Prerequisite: Basic learning aptitude determined by interview and questionnaire, by appointment. Accreditation: Privately taught, personally tutored by Phil York, veteran engineer-producer with many awards who is very active in Texas recording industry. Schedule: Tues-Thurs evenings and selected weekends for projects. Occasional classes formed other times. Duration, approx. three months. Situated best to area resident, part-time student. Tuition: \$1500 in advance includes all class materials, tapes and studio time. Contact: Phil York (214) 438-8248.



MUSIC CAREER WORKSHOP
 Nashville, TN

MUSIC CAREER WORKSHOP
 Sponsor: Foxy Productions
 827 Main St., Nashville, TN 37207
 (615) 227-9920

Chief Administrator: Donna Bridges
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The M-50 is reliable and fast, with extremely flexible signal routing. A valuable asset to the ad agency production room, the small video production/post-production company, the multi-media production facility, and in many other applications.

Because the M-50 includes Solo and PFL, multiple auxiliary mixes, plus balanced and unbalanced inputs and outputs, it is also well suited to final film assembly, small club P.A., and broadcast with clean feeds provided.

TASCAM's extensive design and manufacturing experience in professional recording equipment made it possible to create the M-50. Compact and affordable, this modular 8-track mixer is within the reach of any serious professional.

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tion from artist selection to the final record. Once the students have completed the course they will have a working knowledge that will enable them to function in any area of the business. Classes rotate every four weeks. Tuition is \$1500 and all arrangements are made for the student, including housing. The courses are taught by working professionals who have name value and proven track records. They learn while the actual production process takes place in the normal workday of the teacher. Anyone seeking a music career should inquire into the possibilities of this program before enrolling in any school.

NORTHEAST COMMUNITY COLLEGE

801 East Benjamin, Norfolk, NE 68701
 (402) 471-2020
 Chief Administrator: James Boulton (Chairman Music Dept.)
 Program: **Audio Recording Technician**

OHIO STATE UNIVERSITY

1860 Collier Rd., Columbus, OH 43210
 (614) 422-6508
 Chief Administrator: David Meeker
 Program: **Audio Recording**

PURDUE UNIVERSITY

B 10 Stewart Center, W. Lafayette, IN 47907
 (317) 494-8150
 Chief Administrator: Rick Thomas
 Program: **Creative Arts/Communications Dept.**

RECORDING INSTITUTE OF DETROIT

14611 E. 9 Mile Rd., E. Detroit, MI 48021
 (313) 779-1380
 Chief Administrator: Robert Dennis



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 (614) 663-2544, (800) 848-9900
 Chief Administrator: Jim Rosebrook, Director; Will Park Registrar

Founded in 1971, The Recording Workshop is an intensive 5 week program designed to teach the operation and creative use of professional recording equipment. The program's primary goal is to prepare the student to function as a well trained engineering assistant, although a broader view of the music industry is presented as well, making the program useful to the recording artist and producer.

The Recording Workshop Program is held 7 times per year and each session is followed by an optional one-week Maintenance Program. Both programs consist of an effective combination of lectures and in studio experience held throughout our 5 studio recording complex.

SOLID SOUND RECORDING STUDIO

2400 W. Hassell Rd., Suite 430, Hoffman Estates, IL 60195
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 Chief Administrator: Judd Sager
 Program: **Group & Private Instruction - Recording Theory & Practice**

SOUTH PLAINS COLLEGE

1500 College Ave., Levelland, TX 79336
 (806) 894-9611, ext. 271
 Chief Administrator: Randy Ellis
 Program: **Sound Technology Program**
 South Plains College's two-year program in sound technology

RECORDING SCHOOLS, SEMINARS & PROGRAMS

towards an associate in applied science degree. The program trains students in recording engineering, sound maintenance and repair and maintenance of sound and recording equipment. Facilities include the scientifically designed control room and Waylon Jennings Recording Studio, a new 16 track studio with the latest MCI multi-track 18 channel console and 2 track. The studio is fully equipped with other professional gear. Courses are taught in fall and spring. For information, contact: South Plains College, sound technology program, 1401 College Ave., Levelland, TX 79336, (806) 894-9611.

TEXAS MUSIC ARTS COLLEGE

8477 Westview Drive, Houston, TX 77055
 (713) 465-6554
 Chief Administrator: Dale Mills

UNITED AUDIO RECORDING STUDIO

8545 Farview, San Antonio, TX 78229
 (512) 650-8888
 Chief Administrator: Marius Perron III
 Program: **Recording Institute of America - Class "Recording Techniques"**

UNIVERSITY OF NORTH ALABAMA

Wesleyan Ave., Florence, AL 35632-0001
 (205) 766-4100 ext. 361
 Chief Administrator: Dr. James K. Simpson
 Program: **Commercial Music Degree, B.S.**

The four year program at UNA strives to live up to the reputation of the music community by realistically preparing students to enter the music business. Courses offered include Studio Techniques, The Record Company Publishing, Record Production and a practicum course where students work in studios and other music firms for credit. Minors are required in Business and Applied Music with a Commercial Music major for BS degree. We feel this gives students a more valuable and useful background than expensive, less extensive programs.

UNIVERSITY OF IOWA, SCHOOL OF MUSIC

Iowa City, IA 52242
 (319) 353-5976
 Chief Administrator: Prof. Lowell Cross
 Program: **Recording Studios**

UNIVERSITY OF TENNESSEE, MUSIC DEPT.

1741 Volunteer Blvd., Knoxville, TN 37996
 (615) 974-7552
 Chief Administrator: Dr. Kenneth Jacobs
 Program: **Courses in Recording Techniques; Degree Program in Electronic Music**

WESTERN

AUGUSTWOLF

1250 Pine St., #102, Walnut Creek, CA 94596
 (415) 932-4599
 Chief Administrator: Doug Reid
 Program: **Studio Workshop**

BRIGHAM YOUNG UNIVERSITY, DEPT. OF MUSIC

Provo, UT 84602
 (801) 378-3083
 Chief Administrator: Mr. K. Newell Dayley
 Program: **Sound Recording & Reinforcement/Studio Composition & Production**

CALIFORNIA PROFESSIONAL MUSIC BUSINESS ACADEMY

1014 Morse Ave., Suite 11, Sunnyvale, CA 94086
 (408) 745-1888
 Chief Administrator: Hewlett Crnst, Exec. Dir.

Program: Sound Recording Engineering, Diploma Programs for Performers, Managers, Promoters

Course approval: State of California. Tuition: \$17/class hour. Day and evening programs, continuous enrollments, small classes. Prerequisites: high school grad or equivalent.

Sound Recording Engineering: An intensive in studio hands-on program for students with sound support or recording studio engineering objectives. Students will record, overdub and mix during live studio sessions. Students explore live sound functions and equipment, studio maintenance, tape mastering functions and the role of the engineer as interface between the equipment and the producer. Upon successful completion, a diploma is awarded.

Also diploma programs for performers, managers and promoters. Emphasis on business and legal requirements.

CALIFORNIA STATE UNIVERSITY, DOMINGUEZ HILLS, MUSIC DEPT.

1000 E. Victoria St., Carson, CA 90747
 (213) 519-3543

Chief Administrator: Dr. Francis Steiner
 Program: **B.A. in Music, Option in Electronic Music & Recording**

CALIFORNIA STATE UNIVERSITY, L.A.

5151 State University Dr., Los Angeles, CA 90032
 (213) 224-3448

Chief Administrator: Mickey Bruner
 Program: **Beginning/Intermediate Recording Techniques**

CITY COLLEGE OF SAN FRANCISCO

50 Pheasant Ave., San Francisco, CA 94112
 (415) 239-3525

Chief Administrator: Henry Lott
 Program: contact **Broadcasting Dept.**

COLLEGE FOR RECORDING ARTS

Sponsor: Bi Cultural Foundation, Inc.
 665 Harrison St., San Francisco, CA 94107
 (415) 781-6306

Chief Administrator: Leo De Gar Kalka, President

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COLLEGE OF MARIN

Kentfield, CA 94904
 (415) 489-9305 (Music Comm. education) (415) 485-9596 (telecomm.)

Chief Administrator: David Newby
 Program: **Telecommunications Dept. credit program/Music Dept.**

COLORADO AUDIO INSTITUTE

680 Indiana St., Golden, CO 80401
 (303) 278-2551

Chief Administrator: Diane Weigle
 The CAI curriculum includes Recording Studio Engineering, Live Sound Engineering, Record Production, Concert Lighting, and Introduction to the Music Business. Hands-on training is heavily emphasized, with students spending a large part of their time in the 24 track facility of Applewood Studios, located ten miles outside of Denver. The professional staff at CAI provides students with a solid technical background, and offers practical advice on pursuing a career in the industry. A complete library of reference materials is available for student use. All classes are held in the evening and on the weekends.

DIABLO VALLEY COLLEGE

321 Golf Club Rd., Pleasant Hill, CA 94523
 (415) 685-1230 ext. 3510
 Chief Administrator: Chrs Nelson
 Program: **Recording Studio Techniques, Recording Studio Arranging & Composition**

EASTERN WASHINGTON UNIVERSITY, DEPT. OF RADIO & TV

Cheney, WA 99004
 (509) 359-2228
 Chief Administrator: Larry Wacholtz

THE EVERGREEN STATE COLLEGE

Olympia, WA 98505
 (206) 866-6000, ext. 6268
 Chief Administrator: Ken Wilhelm
 Program: **B.A. Basic Recording 1,2,3, Audio Production 1,2,3, Electronic Music 1,2,3, Electronic Music & Sound for Film 1 & 2**

FEATHERSTONE RECORDING STUDIO
 8996 Fruitridge Rd. Sacramento, CA 95826
 (916) 381-5243
 Chief Administrator Tom Conrad Gary Woltman
 Program **Featherstone Workshop**

FULLERTON COLLEGE, MUSIC DEPT.
 321 East Chapman Ave., Fullerton, CA 92634
 (714) 871-8000 Music Dept
 Instructor Alex Cina

Program Description: The recording classes comprise 2 semesters of theory and labs (Music 124 and 224) Fundamentals of recording studio business practices sound microphone techniques outboard signal processors monitors mixing consoles tape recorder alignment and use session production, and hearing conservation Prerequisites: Music 124, passing the college's Learning Skills Evaluation administered to all registrants before classes begin Music 124 is a prerequisite to Music 224 Students must be officially enrolled in the College

Accreditation: Fullerton College is fully accredited by the Western Association of Schools and Colleges and by the California State Department of Education

Fees: Fullerton College is a public Community College and is tuition free to California residents A \$25 lab fee is payable upon registration The College has a fully equipped 16 track studio

GOLDEN WEST COMMUNITY COLLEGE
 15744 Golden West St. Huntington Beach CA 92647
 (714) 844-7111

Chief Administrator Evan Williams
 Program **Recording Engineering**

The Recording Engineering Program at Golden West College is a two year vocational education program Entrance is by exam given annually in August with the top 80 students accepted The exam covers basic recording theory electronics theory and math and basic music theory

The course covers the entire recording chain from acoustics to final product Emphasis is on practical hands-on experience with beginning students starting to use the console by the third week Advanced students take projects all the way to disk in a series of record albums

Support courses include four semesters of electronics basic music theory composition and arranging business management synthesizer record production

GYPSY PRODUCTIONS RECORDING CLASS

Sponsor: Montage Recording Studio
 375 W. Syracuse St., Bldg 1C Newark CA 94560
 (415) 794-2992

Chief Administrator Dave Hartzheim
 Held at Montage Studios (24 track) classes will be geared for beginners and intermediate students with special emphasis placed upon practical applications Classes meet once a week for 4 weeks, and run for 3 hours Class size limited to 12 to assure hands on for everyone Subjects include miking, tracking, over dubbing, mixing, consoles, outboard equip. and much more Fee \$140 (advance) \$160 (at first meeting)

HH&R'S FASTRAX
 2227 N. 56th Seattle, WA 98103
 (206) 632-8300

Chief Administrator Candace Williams
 Program **Modern Recording Techniques 1 & 2**

INSTITUTE OF AUDIO RECORDING
 3465 El Cajon Blvd. San Diego CA 92104
 (619) 280-7454

Chief Administrator Terry Setter & Richard Bowen
 The Institute of Audio Recording offers 6 month certificate programs in Record Engineering & Record Production and an 8 month program in Studio Maintenance All classes are taught by California state certified instructors in state-of-the-art 24 track recording facilities There are no educational prerequisites An aptitude test and placement exam are required prior to admittance For a complete course catalog send \$1 to the above address

INSTITUTE OF AUDIO/VIDEO ENGINEERING
 1831 Hyperion Ave. Hollywood, CA 90027
 (213) 666-3003

Chief Administrator Lydia E. Townner
 Program **Recording Engineering, Video Engineering, Sound Reinforcement Maintenance**

Each is an 8 month program including internship Class size max 10 in workshops Prerequisites: high school grad or equiv. and entrance exam Accreditation offered diploma Application deadline: new sessions begin every two months Tuition \$2900 to \$4400 depending on program Individual classes also available - \$200 to \$550 per class

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LOS ANGELES VALLEY COLLEGE, MUSIC DEPT.

5800 Fulton Ave., Van Nuys CA 91401
 (213) 781-1200 ext. 346 or 501-2750

Chief Administrator Dennis Parker
 Program **Recording Arts Certificate**

MARIN SOUND RECORDERS

448 Dubois, San Rafael CA
 (415) 459-5152
 Chief Administrator Dr. Arthur Moore
 Program **Recording Performance Workshops**

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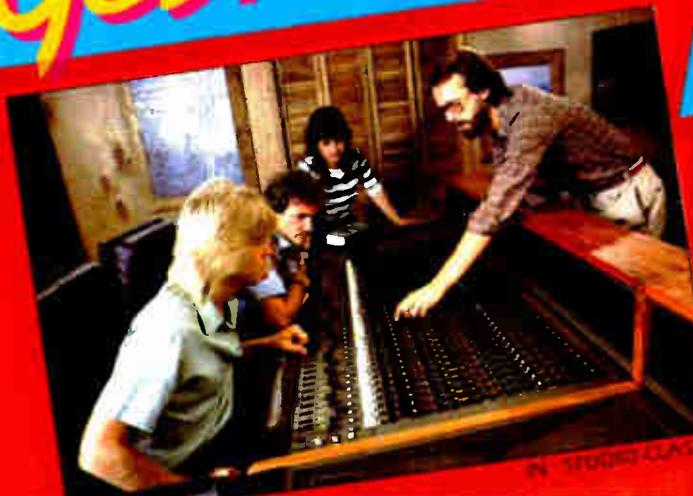
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Music 24 A, B, C, D

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26000 S.E. Stark St., Gresham, Oregon, 97030
(503) 667-7410
Chief Administrator: John Hoy
Program: Radio Production Technology

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Chief Administrator: Howard Jenkins
Program: Careers in Music

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(561) 777-4621
Chief Administrator: Jay C. Webster

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(714) 841-4754
Chief Administrator: Mark S. Mitchell

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1400 Holloway, San Francisco, CA 94132
(415) 469-1787
Chief Administrator: Dr. Claren Semler, Film Dept., Int'l. Career
Houses
Program: Broadcast Communication Arts Dept., Film Dept.,
Audio & Video Degree Programs

SANTA ROSA JUNIOR COLLEGE
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SOUND MASTER



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Tucson, AZ 85721

602-921-1055

Chief Administrator: Robert Werner

UCLA MUSIC DEPT.—EXTENSION

10661 Le Conte Ave., Westwood, CA 90024

213-845-9004

Chief Administrator: Van Webster

Program: Recording Engineering Theory, Recording Engineering Practice I & II

UNIVERSITY OF SOUND ARTS

6525 Sunset Blvd., Suite G7, Berwin Entertainment Complex,

Hollywood, CA 90028

(213) 467-5296

Chief Administrator: R. J. McCoy

Program: Recording Engineering

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Canada V6J 4G7

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Chief Administrator: Niels Hartuq-Nielsen, Shannon Barker

ICA is an eligible institution for Canada Student Loans. For more information please call or write I.C.A. Institute of Communication Arts Assoc., 2nd Floor, 1730 Burrard Street, Vancouver, BC, Canada V6J 3G7, (604) 734-5474.

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c/o Trebas Institute of Recording Arts

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Canada H3A 2H7

(514) 845-4141

Chief Administrator: David P. Leonard, President

Founded in 1978 in Nashville as a not-for-profit organization whose purposes are to establish and maintain standards of music industry education throughout the world, to encourage contact between the educational community and the music industry, to foster interaction among people involved with music industry education, to assist institutions involved in the development of pro-



MUSIC INDUSTRY EDUCATORS ASSOC.
Montreal, Quebec

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TREBAS INSTITUTE OF RECORDING ARTS

225 Mutual St., Toronto, Ontario,

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(416) 977-9797

Chief Administrator: David P. Leonard, Executive Director
Program: Record Producing, Sound Engineering, Music Industry Management, Entertainment Electronics.

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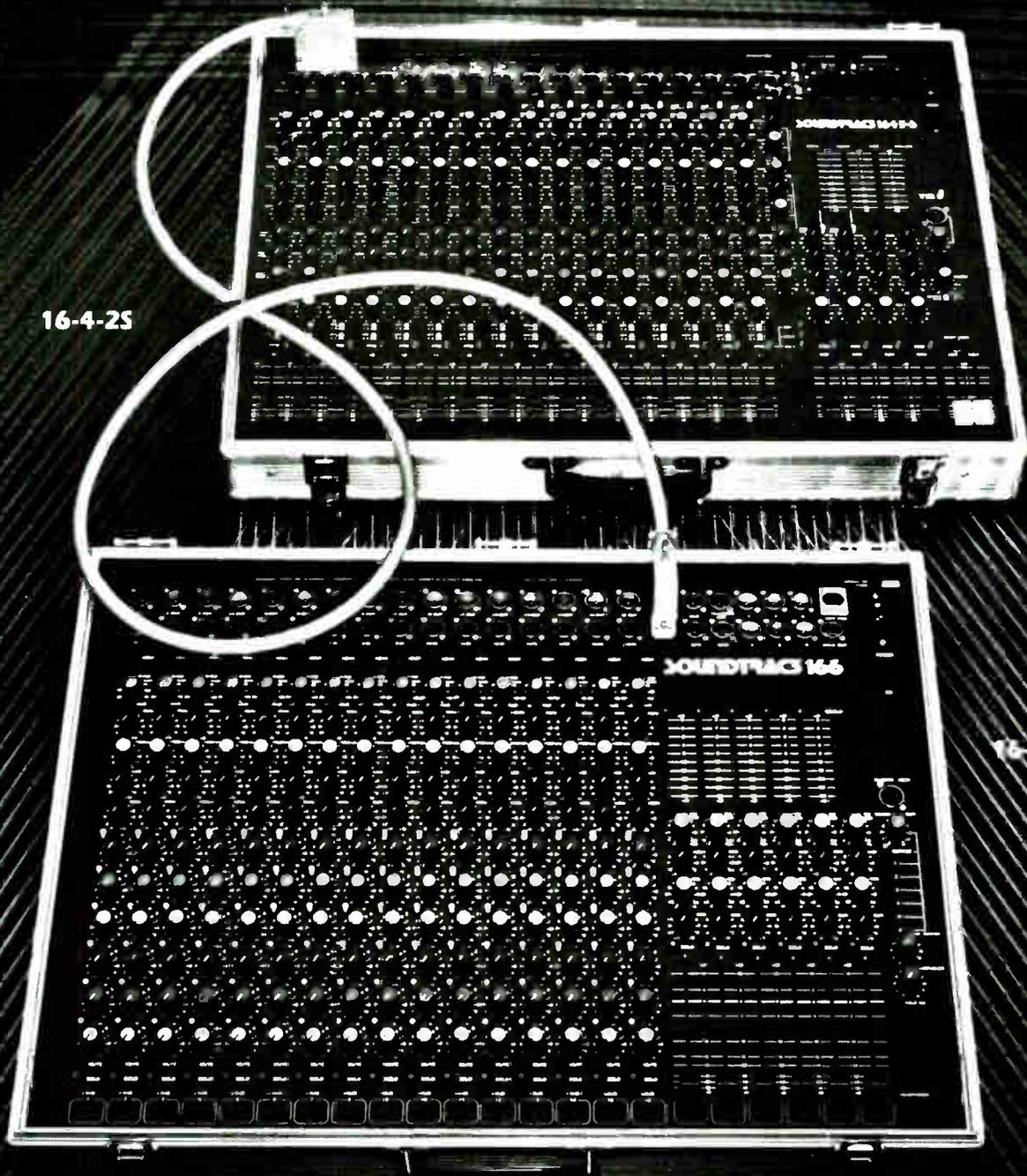
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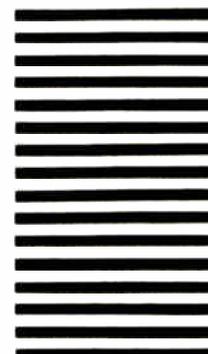
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Whatever your level, be it amateur or professional, Roland invites you to enter its 7th Synthesizer/Tape Contest. Anyone with a creative interest and proficiency in synthesized sound is welcome. Acting judges for this contest are the notable

synthesists: Isao Tomita, Norihiko Wada, Shigenori Kamiya, Makoto Moroi, Oscar Peterson, and Ralph Dyck. Judging of qualifying materials will take place on January 2, 1984, in Tokyo, Japan. Winners will be notified after screening is completed.

Please examine the following conditions before completing our application form.

Class A

To qualify, you must be a Professional Synthesist or other Recording Artist (Musician, Recording Engineer, etc.).

First Prize

3 winners will receive a Roland SDE-2000 Digital Delay, TEAC HP-200 Pro Headphones, 2 Scotch 10" open reel tapes, and 4 Maxell 7" open reel tapes.

Class B

To qualify, you must be a First Prize winner in one of the previous Roland Synthesizer/Tape Contests, or you must have substantial experience in synthesis or multi-track recording.

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Out of all the entries submitted, this prize will be given to an extraordinarily good piece of music. The one person selected will receive, in addition to other prizes, an exciting new Roland product coming out this year.

Contest Specifications

- 1| Each contestant can enter only one tape, and it should be a premiere piece that has never been presented elsewhere.
- 2| The entry tape should be limited to 3 minutes in length. Any tape longer than 3 minutes will be disqualified.
- 3| The contest is limited to synthesizer pieces recorded in the multi-track method. Live performances, pieces recorded without multi-tracking, or pieces using mainly acoustic instruments or voice will be disqualified.

4| No piece entered in this contest should be entered in any other contest until the winners have been announced.

5| Copyrighted material used for radio, TV, movies or records will be excluded.

6| Copyright of the winning pieces will belong to the Roland Corporation.

7| Entries will not be returned.

Application Procedure

Fill in all the information on the preliminary application form below. Send it to:

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You will then receive a formal Roland Contest Application, which, when completed, must accompany your tape. Send no tapes with the application below. This Preliminary Application must be received no later than August 31, 1983.

Preliminary Application

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SOUTHWEST RECORDING UPDATE



Rivendell Recorders in Pasadena, Texas, has worked on recent releases by B.B. King and Ray Charles

building activity on the 3rd coast

by George Petersen

Over the past few years, the Southwest recording industry has grown by leaps and bounds. Texas has evolved into a major center for record production, video and jingle work. And throughout the entire Southwest, we have noted a flurry of activity building. Or more aptly put, **building activity**: with the record recession of past years fading away, the number of studios involved in remodeling, upgrading and new construction has skyrocketed. We checked with some of our friends in the sunny Southwest and found a lot of very busy studios.

Vintage Recorders, a new 24 track facility in Phoenix, AZ, have just completed their third album project, with Mick Fleetwood and his producer Richard Dashut working on Mick's second solo album for RCA. Dashut made the decision to come to Phoenix after learning from David Brown (chief engi-

neer at Vintage), who has engineered for both Fleetwood Mac and Lindsey Buckingham, that the Trident console they used on the *Rumors* album was now located at Vintage. According to Dashut, one aspect of the console they really like is the EQ section: "The high end just jumps out at you."

Luxury Audio Workshop in Las Vegas was kept busy over the past year with several construction projects which included the total remodeling of control room "A" by Lakeside Associates and the addition of a new room. The new 24 track studio "B" is equipped with a Quad-8 console and custom JBL monitors by George Augspurger. The new room was designed for overdubs and laying basic tracks and allows LAW's clients more flexibility in planning projects.

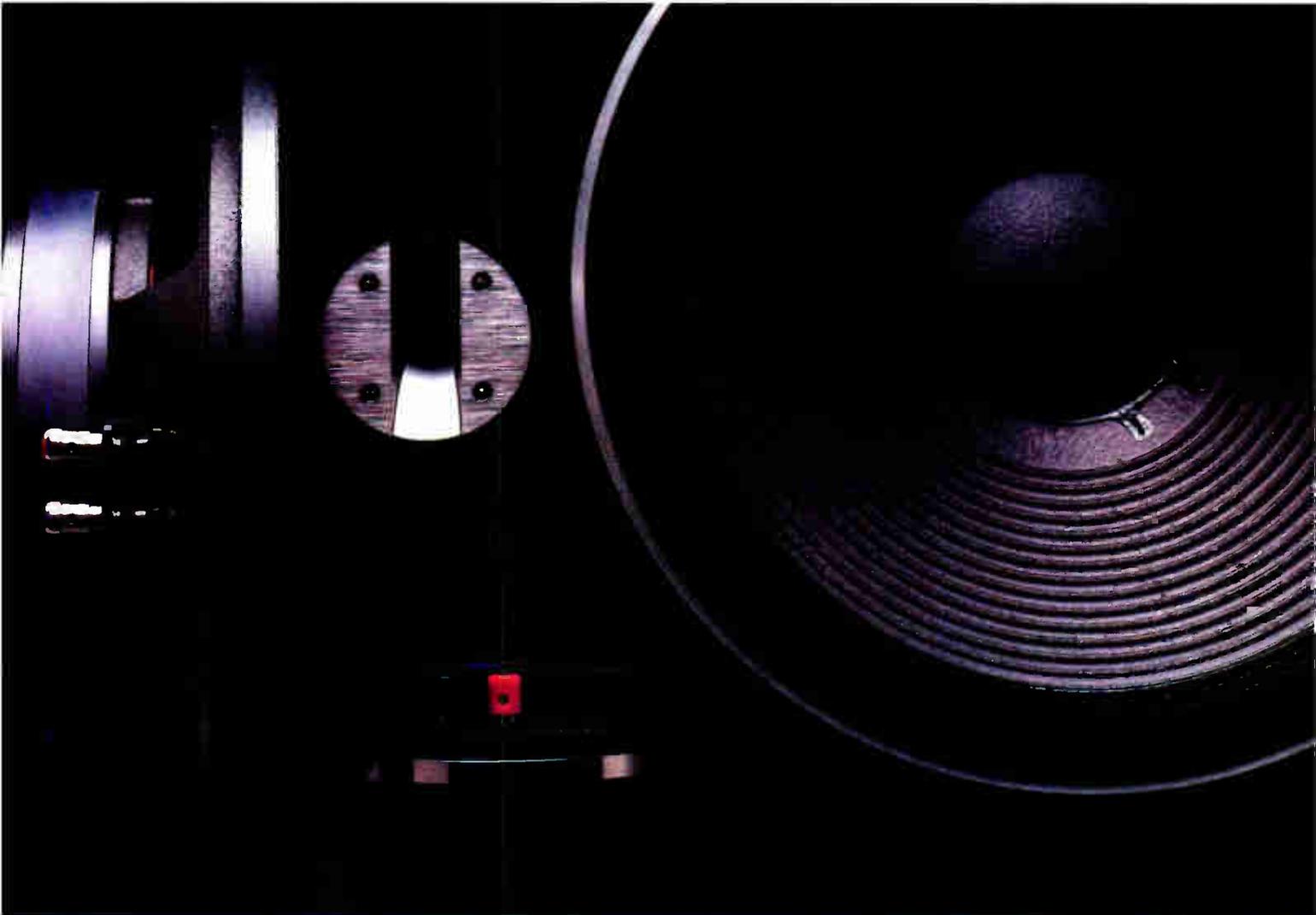
Also in Las Vegas, CSS Recording Studios noted strong album activity all year with Diana Ross self-producing her LP earlier this year.

Other artists at CSS recently included Linda Carter (produced by Kenny Rogers), Paul Anka, Ann Margaret, Lola Falana and Barbara Mandrell.

Studio happenings in New Mexico are also on the rise. Gravity Studios in Nogales has upgraded to 24 tracks and added a Lexicon 224-X from EAR Pro Audio to their outboard arsenal. Emmitt Brooks Recording in Las Cruces recently went from 16 to 24 tracks, and in Albuquerque, Accutrak, an eight track facility, went on line last October, and owner Doug Clifton has formed a songwriter's collective in the area.

In Manchaca, Texas, Malcolm Harper, Reelsound owner reports his second mobile truck went on the road earlier this year. The new unit, a 42' tractor/trailer, incorporates an 18' Tom Hidley-designed control room with two MCI 24 tracks, an MCI 636 automated console, and IBL 4430 Biradial monitors. The truck was used recently to

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SOUTHWEST RECORDING UPDATE

record audio for the Osmond Brothers' Country Special (for the Ted Turner cable network) at Billybob's in Fort Worth. The four-day shoot featured The Osmonds, Louise Mandrell, Mel Tillis and T.G. Shepard, and was engineered by Bill Tullis, Mason Harlow and Malcolm Harper.

At Willie Nelson's Pedernales Studio in Spicewood, TX, (near Austin), Asleep at the Wheel are completing tracks for their upcoming release. The album is being co-produced by Ray Benson and Willie, with Larry Greenhill engineering and Bobby Arnold assisting.



Studio A at Luxury Audio Workshop in Las Vegas

Cedar Creek Recording in Austin (formerly Rough Cedar) underwent a complete remodeling and opened on Halloween, 1982. The studio is equipped with all new MCI gear from Southwest Pro Audio: a JH-24 24 track recorder, JH-110B two track, and a JH 636 automated 26 x 24 console. The facility features variable acoustics, with traps hidden behind a moveable ceiling. A recent session at Cedar Creek was the New Orleans band Satisfaction, produced by Peter Butcher who completed the album in one week.

By press time, the Midcom mobile unit from Arlington, TX, will have returned from Rhinelander, Wisconsin, having recorded audio for the Hodag Country Festival. Telemation plans to syndicate performances from the three-day event as thirteen separate TV programs and a two-hour special.

Sierra Recording in Fort Worth, TX, went on line last October, and has found a wealth of bookings in the Spanish and contemporary Christian markets. The studio, designed by Alan Burdick, has a 42 x 30 main room and features an LEDE control room with transformerless electronics - a Neotek Series III console and a Stephens 24 track recorder. Chief engineer Tony Rodriguez explained Sierra's unique position: "We fill a gap in the market. We're the only Spanish speaking studio in the area. Many Spanish speaking artists and producers have trouble relating to the engineer in other studios, but here, there's no problem."

Dallas Sound Lab, in Irving, TX, plans to be open by July 1, 1983. The facility features three rooms designed with audio for TV or film in mind. Studio A is a 24/48 track room with video or 35mm film scoring to picture, with a 50-piece orchestra capacity. Studio B is laid out for voice overs and video sweetening, and Studio C is a film mixing theatre. Owner Russell Whitaker added that the facility has direct audio tie-lines to the three sound stages at Las Colinas for concerts and live television work.

Diamond Night Recording Studio in Dallas opened in February 1983. The studio, designed by co-owner Jim Billingsley, is equipped with Studer 16 and two track recorders, an Allen and Heath Brenell automated console and Westlake monitors. Studio manager Mary Lou Truelove explained the studio's goal is to "please musicians by offering a quality facility at an affordable price." Some of Diamond Night's recent sessions have included Ultimate Force produced by Angus Winn, and Cyberphonics produced by Bruce Stover.

Tele-Image, with offices in Dallas and Houston, is a major video production/post company whose clients have ranged from the Rolling Stones to Mary Kay cosmetics. Tele-Image plans

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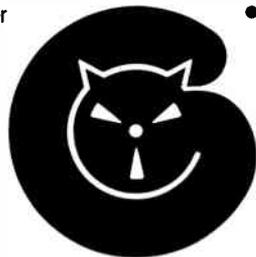
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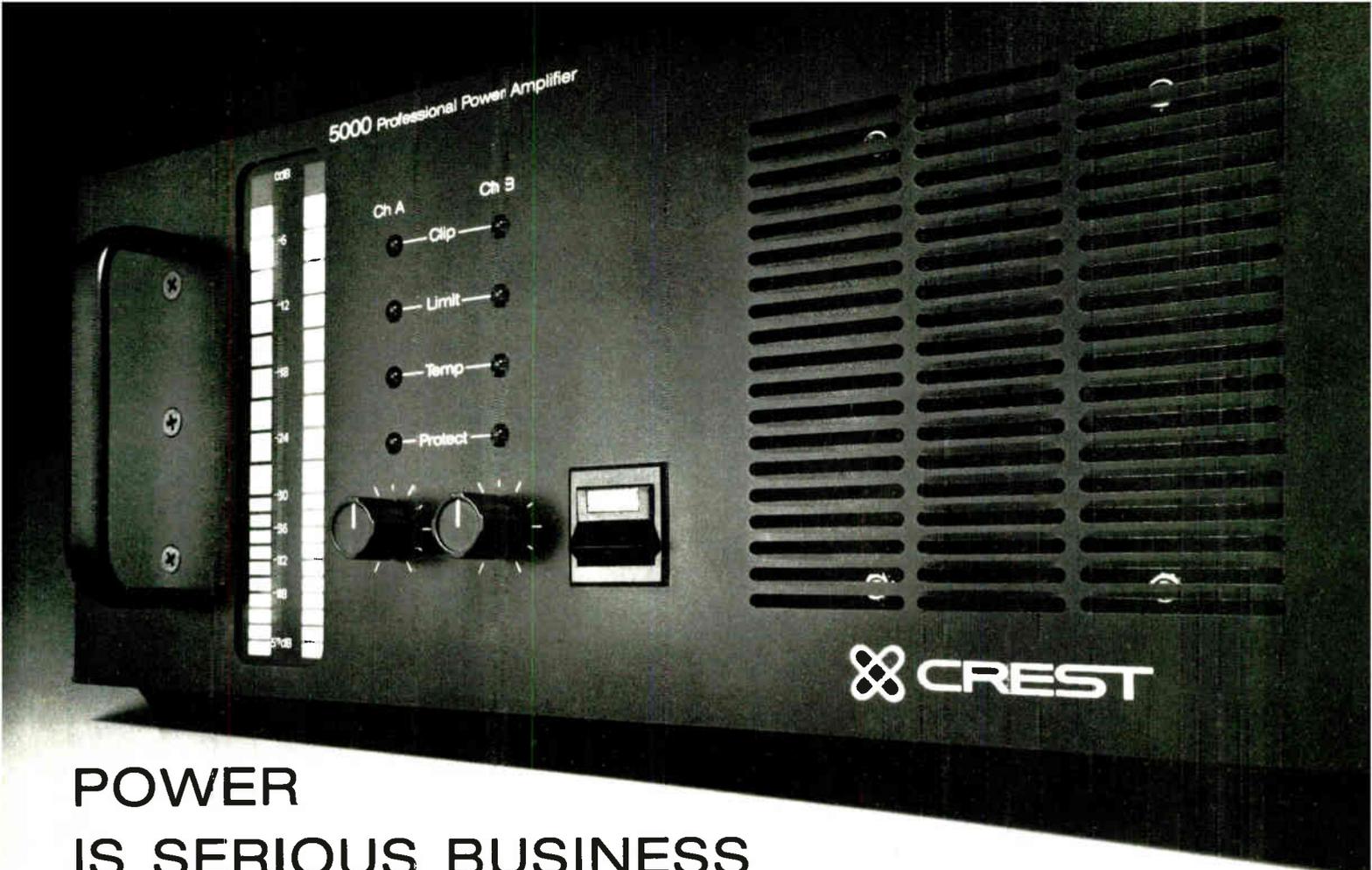


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SOUTHWEST RECORDING UPDATE



Mick Fleetwood (drums), Steve Ross (guitar), and George Hawkins (piano) working out at Vintage Recorders in Phoenix

to complete their move into the Dallas Communications Complex at Los Colinas this summer. The new facility will also include three computerized video editing bays with 3/4", 1", and 3/4" to 1" capability. Digital effects, insert stages with color cameras, and multi-track audio are also available in each bay. An audio sweetening room and a 48 track audio studio are slated to open soon, and Tele-Image plans to have a second mobile video unit on line by the end of the year.

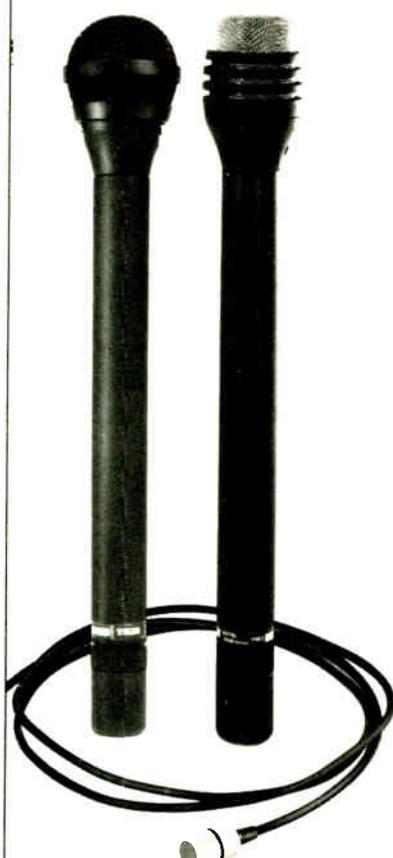
Tomlyn Recording Studios, in Flint, TX, is currently in the process of upgrading to 16 tracks, having ordered a complete MCI studio package, and additional outboard gear and microphones. The studio was designed by Russ Berger of the firm Joiner, Pelton, Rose of Dallas.

The Omega Audio remote truck has been heavily involved in audio for video productions over the past year. They recorded the audio for the PBS special of Handel's *Messiah*

(performed live at Jones Hall in Houston) with the Texas Chamber Orchestra and the Concert Corral of Houston. Crown PZM microphones were used to record both the orchestra and the chorus (PZMs on the stage floor captured the soloists) and were fed to Omega's dbx encoded 24 track recorder. One mil tape was used to provide 90 minute loads which matched the VTR loads. After video editing at Video Post and Transfer (located adjacent to Omega), the audio was mixed directly onto the stereo 1" video master, for a second generation layback. The concert was simulcast in stereo nationwide on Christmas day.

Castle Audio, in Carrollton, TX, unofficially opened for business last April. The 24 track facility, designed by Paul Westbrook, utilizes removable panels (attached via 3M Head-Loc fasteners) which expose a bare red oak wall surface for widely variable acoustics. The drum booth has pivoting windows which can be used to vary the amount of isolation, and the control room is a modified live end-dead end design. Mr. Westbrook commented about the studio: "Most studios in this area are designed for jingle production. This is a record studio, with an LA-style sound."

Rivendell Recorders, in Pasadena, TX, underwent a complete re-



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modelling of their control room last year. Studio manager Brian Tankersley worked on the design with Glenn Meeks, of EA Designs (Indianapolis, IN). "It was a gamble to remodel in 1982," Brian explained. "We completely tore out and replaced our control room. But things have been popping ever since, and we're now booked 4-5 months in advance." Some of Riven-dell's recent clients have included Ray Charles, Sammy Hagar, and B.B. King.

Digital Services in Houston has added a second 24 track digital truck to their available line of equipment. The truck was recently seen in action recording Doctor Rockit, The Natives, The Dishes, Rancho Be Bop, and Headmaster at an outdoor concert in Houston. The live-to-digital two track tapes are slated for later broadcast on KLOL radio in Houston.

The Sony PCM-F1 digital audio processors have proven a cost-effective way for studios to enter the digital market, and a growing number of studios in the Southwest are doing so. Commenting on the quality of the processors is John Moran, Digital Services owner: "They're unbelievable. They sound just as good as two of the channels of my [digital] 24s. Any studio that doesn't have an F1 is a fool. Tapes made on an F1 can be digitally transferred to a PCM-10 [digital two track] for digital editing and mastering."

In Oklahoma City, OK, at the Cornerstone Recording Company, engineer Steve Merkel reports steady business in music projects, especially in the country and contemporary Christian genres. Last year, they completed the construction of their new two-studio facility. Studio A is designed for 24 track music recording, while Studio B is a four track media studio. Cornerstone's push into the media market has paid off, with plenty of bookings in Studio B for voiceovers, slideshows, industrials, and audio-visual productions.

A new studio alliance in Texas has been formed. PARA, the Professional Audio Recording Association of Dallas/Fort Worth, has organized 90% of the major studios and related facilities in the area. The purpose of PARA is (1) to foster mutual understanding and support among members through the exchange of ideas, experiences, and knowledge; (2) to present the organization as one that represents standards of excellence to both its clients and industry peers; (3) to present the organization to the business community and the public at large as a creditable member of the communications industry. A number of seminars featuring nationally prominent speakers in the industry have been planned for the near future. For membership information, contact Mr. Les Studdard, Membership Chairman, 3341 Towerwood, Dallas, TX, 75234. ■



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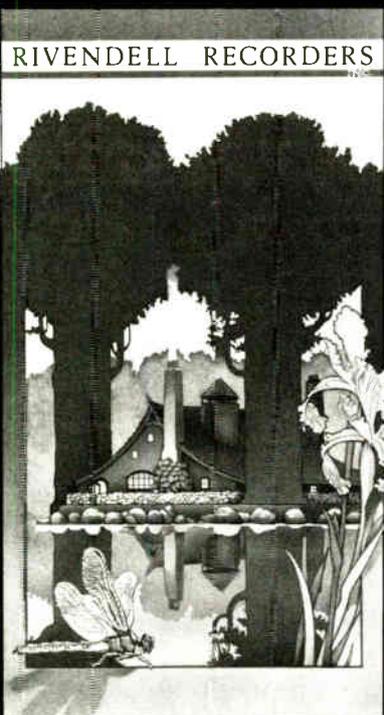
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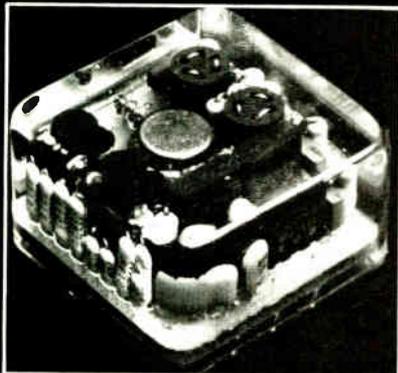
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SOUTHWEST RECORDING UPDATE

CHATON RECORDINGS Paradise with a VU

by Wayne D. Freeman

Located just outside Scottsdale, Arizona, in a peaceful valley appropriately named "Paradise," is Marie and Ed Ravenscroft's Chaton Recordings. The serene desert surroundings provide artists and producers alike with a respite from the nearby "Hollywood" recording scene. No studio groupies, smog or "sent in pizza"; just good clean air, lots of cactus and country hospitality.

If you're expecting Ma & Pa Kettle of 24 track, forget it. Ed, originally a jazz drummer, began Chaton as a 2 track mobile and it grew in two short years to a major 24 track facility. Marie, an eleven year veteran of Britain's ITV and BBC television, is no stranger to technical excellence or sophistication. "Because I was a very active performer," Marie explains, "it is natural for me to encourage others to perform."

During Marie's ITV/BBC television career, her gourmet cooking program and various interview and talk shows made her a celebrity. Despite her success, she remains remarkably unchanged. In fact, the only clues to her culinary past arise in the lavish delights she serves her clients.

The studio is housed in a self-standing building at the rear of the complex. It is surrounded by a huge parking lot carved from the desert floor. The studio was designed by Ed Ravenscroft and the staff at Chaton. Finished in fine oak, the control room exudes a warm feeling. The soffit mounted control room monitors are UREI 811 time aligned driven by a UREI 6500 power amplifier. UREI 539 1/3 octave equalizers are used for control room equalization.

A Soundcraft Series 2400, 28 input console has recently been installed. The console (split in design) has a 40 segment LED display incorporating a 27 band spectrum analysis and phase correlation metering. As this article was being written, a full automation system was scheduled to be retrofitted on the Soundcraft console, making Chaton Phoenix's first automated 24 track studio.

A pair of Otari MTR-90s are Chaton's multi-tracks. When inter-



Chaton's Ed Ravenscroft

locked, they deliver up to 46 tracks. An Otari MTR-10 2/4 track mastering machine is fixed in the studio, as are an MX5050-8 and MX5050B. Noise reduction is available through a dbx 180 2 channel device. SMPTE interface is provided by a BTX Shadow and BTX Cypher time code reader/writer.

A full complement of outboard gear is clearly visible, ranging from an Eventide Harmonizer, a JREI limiter/compressor, to EXR Exciters. A good selection of reverb devices includes Lexicon 224X, Echo-plate and MICMIX units.

AKG, Neumann, Sony and Sennheiser are included in the list of over 100 mikes. Ed has been collecting these for years and all are in top working order.

The vintage department includes the circa 1831, 7' Steinway grand. An assortment of percussion instruments and electric pianos are available, along with Sequential Circuits Prophet, ARP and Roland synthesizers.

The Chaton 24 track remote recording truck, called The Cat, designed and outfitted under the supervision of John Gibson of E.A.R. Professional Audio, has also proven to be a very popular recording medium.

Over the last ten months "The Cat" has completed a 13 week series of "Nashville on the Road" for NBC; the Michael Murphy Special "What's Forever For," to be aired in early 1983; Flora Purini/Airto Moreria in Santa Fe; and a long list of live concerts including rock and roll festivals, live at "Billy Bob's" in Texas and a live album entitled "Rhythm of the City."

Steve Moore, Chaton's engineer, has made it a policy of continuously testing available recording tapes. "The tape is a critical part of our total effort," says Moore. Agfa tape is the present favorite and the new Agfa 428 tape has been the tape of choice for "The Cat" for the last six months.

Whether in the studio or on the road with Chaton, Ed and Marie like to share a bit of Paradise with their friends in recording. ■

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The Southwest 4&8 Track

•• ACCESS SOUND PRODUCTIONS
also REMOTE RECORDING
4922B Burnet Road, Austin, TX 78756
(512) 452-6050
Owner: Mark Harper
Studio Manager: Mark Driver

•• ACCUTRAK
2614 Aspen NW, Albuquerque, NM 87104
(505) 247-1001
Owner: Doug Clifton
Studio Manager: Doug Clifton

•• ALTIM STUDIOS
Fort Worth, TX
(817) 921-6098
Owner: Tim Hood
Studio Manager: Al Ervin

•• ANNOUNCER BOOTH STUDIOS
1300 E. Arapaho, Richardson, TX 75081
(214) 234-0301
Owner: Byron Parks
Studio Manager: David McMahan

•• ASPEN RECORDING COMPANY
1013 N. Orchard, Farmington, NM 87401
(505) 327-2928
Owner: Bill Woodard
Studio Manager: Robyn Woodard

•• AUDIOGENICS
also REMOTE RECORDING
Box 141325, Dallas, TX 75214-1325
(214) 826-5984
Owner: Rick Peebles, Doug Webb
Studio Manager: Rick Peebles
Engineers: Rick Peebles
Dimensions of Studios: 12 x 16
Dimensions of Control Rooms: 10 x 12
Tape Recorders: Tascam 40-4 w/dbx 4 track, Sony PCM 10/SL-5000 digital 2 track, Revox 1/2 tr B77 w/dbx 2 track, Sony K777 cassette, Sony DSM cassette
Mixing Consoles: Ramsa 8118 18x4x2, Studiomaster modified 8 into 4, Tapco 6201B 6x2
Monitor Amplifiers: Crown PS400, D150, D75
Monitor Speakers: JBL 4313B, Sennheiser HD420 headphones
Echo, Reverb, and Delay Systems: Custom Master Room XL305 reverb, DeltaLab Acousticomputer w/2 second memory extension, Roland Space Echo
Other Outboard Equipment: dbx 900 series, noise gates, De-essers, parametric EQ, dbx 164 comp/limiter, Roland SEQ315 graphic EQ, Integrex Dolby decoder, Goldline spectrum analyzer
Microphones: Neumann U87, Crown PZM, AKG C451, Sony 989 stereo, Shure SM57 and SM59, Nady SM58 handheld and ATM 831 lavalier wireless, Countryman and DOD direct boxes
Instruments Available: Stroud baby grand piano, Mooq Roque Video Equipment & Services: Location 4-track or digital 2-track

audio write code feed. Offline production of voice, music, sound effects for video or film
Rates: \$30/hr, \$200/day in-studio. Call or write for location rates
Extras: Custom Sony Real Time cassette duplication (direct from digital if desired), 3M hi-speed duplication. All equipment is easily portable to virtually any location
Direction: With over 50 combined years in theatre, dance and music, AudioGenics is devoted to the development of audio in the performing arts. Since performing arts audio differs greatly from typical concert or studio requirements, AudioGenics is the only organization in the southwest created specifically to address these diverse needs - as well as handling more conventional audio requirements

•• AUTOGRAPH RECORDING STUDIOS
601 E. Blackledge Dr., Tucson, AZ 85705
(602) 882-9016
Owner: Autograph Incorporated
Studio Manager: Joe Bidwell

•• CATALINA RECORDING
6003 Fiesta St., Ventura, CA 93003
(805) 644-2618
Owner: Lyndon Turner
Studio Manager: Michael Dosa

•• CHARITY RECORDING CO.
22 S. 177th E. Ave., Tulsa, OK 74108
(918) 234-3145
Owner: David Smallwood
Studio Manager: David Smallwood

•• COWTOWN STUDIO
also REMOTE RECORDING
1350 Samuels Ave., Fort Worth, TX 76102
(817) 336-3885
Owner: David Hearne
Studio Manager: David Hearne

•• FIREHOUSE RECORDING
2242 Butler St., Dallas, TX 75235
(214) 634-0415
Owner: Ron Mason
Studio Manager: Ron Mason

•• GOLDBAND RECORDING STUDIO
313 Church St., Lake Charles, LA 70601
(318) 439-8839
Owner: Eddie Shuler
Studio Manager: Jeff Le Jeune

•• GRAND THEFT RECORDING STUDIO
162B Canyon Oak, Irving, TX 75061
(214) 254-6647
Owner: Jimmy Papa
Studio Manager: Mike Raupp

•• HOMESTEAD STUDIOS
P.O. Box 283, Waller, TX 77484
(713) 372-2769
Owner: Dennis White
Studio Manager: Dennis White
Dimensions of Studios: 30 x 15 with 17 foot ceiling
Dimensions of Control Rooms: 12 x 14
Tape Recorders: Tascam 80-8 w/dbx 8 track; Revox B77 2 track; TEAC C3RX cassette
Mixing Consoles: Ramsa WR8816 16/4/2; Tapco 6100RB 6x2
Monitor Amplifiers: Studiocratsman and Yamaha
Monitor Speakers: Electro-Voice and Maximum 7s
Echo, Reverb, and Delay Systems: AKG BX10 II, Korg digital delay
Microphones: PL20 E V, Crown PZMs, Crown 57s, 58s; Shures; Prmo, AKG, etc
Instruments Available: Amps, direct boxes, Stratocaster, keyboards, etc. Excellent session artist available.
Rates: \$25 per hr. We are very competitive on block rates!
Extras: Quiet country atmosphere. Close to Houston, TX, large deck and outside area for relaxation, pool table and recreation room
Direction: The studio is built in an authentic restored Texas homestead believed to be built around 1878. The two story structure sits on 2 full acres, a short distance from Houston, Texas. We are more interested in quality sound reproductions as an art form than a business. Hope to be 16 tracks by 1984

•• LAMBOCHOPS STUDIO
323 W. McDowell Rd., Phoenix, AZ 85003
(602) 254-3849
Owner: Rick Lamb
Studio Manager: Rick Lamb

•• LOST MOUNTAIN RECORDERS
also REMOTE RECORDING
7308 S. Congress Ave., Austin, TX 78745
(512) 444-5762
Owner: Navarro Productions
Studio Manager: James Tuttle

•• MARSOUND
915 N. Main St., Tucson, AZ 85705
(602) 628-1554
Owner/Mgr: Mike Reinhard
(see Classified)

•• MESQUITE RECORDING STUDIO
3129 North Hwy 67, Suite H-1,
Mesquite, TX 75150
(214) 270-7453
Owner: Mike Abbott, Don McKnight
Studio Manager: Mike Abbott, Don McKnight

•• MIKE DE LEON PRODUCTIONS
3815 Pipers Stone, San Antonio, TX 78251
(512) 681-1308
Extras: Everything you need to get started. Complete record production, demos, music publishing and promotion assistance under one roof. Se habla español
Direction: Our competitive pricing and open minded attitude will assure you of complete satisfaction. Call and compare

•• MINISTRY RECORDING STUDIO
also REMOTE RECORDING
4205 S. 37th St., Phoenix, AZ 85040
(602) 268-0444
Owner: Marty Zacharias
Studio Manager: Joe Showk

•• THE MUSIK FACTORY
1812 Procter St., Port Arthur, TX 77640
(409) 982-7121
Owner: Floyd Badaeux
Studio Manager: Floyd Badaeux

•• NOISEMAKER STUDIO
4123 Killion Dr., Dallas, TX 75229
(214) 350-0290
Owner: Randy Canada
Studio Manager: Greg Rardin
Engineers: Greg Rardin, Randy Canada
Dimensions of Studios: (2) 12 x 10 rooms with 8 x 8 vocal/drum booth (small)
Dimensions of Control Rooms: 12 x 10 (semi-cramped)
Tape Recorders: Tascam 80-8 w/DX-8 8 track, TEAC 3300 SX 2 track, Technics 1520 2 track, Technics M65 cassette
Mixing Consoles: Tascam model 15 modified 18 in x 8 out
Monitor Amplifiers: Kenwood KA9100
Monitor Speakers: JBL 4311, KLH 3, Radio Shack Olympus 3
Echo, Reverb, and Delay Systems: MXR flanger/doubler, MIC-MIX XL210
Other Outboard Equipment: MXR pitch transposer, TEAC graphics, dbx 150, Roland TR808 drum composer
Microphones: Shure, Sony, E V
Instruments Available: Yamaha CP70 electric grand, Rhodes

88, Moog Memorymoog, Roland Vocorder Plus, Takamine electric acoustic, Gibson ES-135, Ludwig drums
Rates: \$15 per hour
Direction: At NoiseMaker Studio, our signal to noise ratio may be low, but then so are our rates. Let's not be pretentious. We do what we can with what we have to work with.

•• **OAKRIDGE MUSIC RECORDING STUDIO**
 2001 Elton Road, Haltom City, Ft. Worth, TX 76117
 (817) 838-8001
 Owner: Hlose A. Swell, president
 Studio Manager: Homer Lee Sewell

•• **ONION AUDIO**
 also **REMOTE RECORDING**
 7095 Comanche Trail, Austin, TX 78732
 (512) 266-2694
 Owner: Hank Alrich
 Studio Manager: Lans Le Baron

•• **PRODUCER'S SOUND STUDIO**
 also **REMOTE RECORDING**
 7701 Broadway, Suite A-6, Oklahoma City, OK 73116
 (405) 842-3230
 Owner: Steve Garman
 Studio Manager: Steve Garman

•• **PRODUCTION BLOCK STUDIOS**
 also **REMOTE RECORDING**
 2222 Rio Grande, #D-108, Austin, TX 78705
 (512) 472-8975
 Owner: Jack Block
 Studio Manager: Bill Harwell

• **SELLERS COMPANY**
 2102 Jackson, Dallas, TX 75201
 (214) 741-5836
 Owner: Jack Sellers
 Studio Manager: Jack Sellers

•• **SNOWBIRD JUNCTION RECORDING STUDIO**
 4219 S. 36th Pl., Phoenix, AZ 85040
 (602) 243-6889
 Owner: Mike & Tina Craig
 Studio Manager: Mike Craig
 Engineers: Mike Craig, Tina Craig, and freelance
 Dimensions of Studios: Main studio: 20 x 20, Drum booth 8 x 8, Vocal booth 8 x 8
 Dimensions of Control Rooms: A: 14 x 9, B: 15 x 9
 Tape Recorders: Otari MX5050 8 track, Revox A77 2 track, TEAC A2400S 2 track, TEAC 2605 cassette, Onky TA-W80 mass duplicating
 Mixing Consoles: A: Trident VFM 16x8x2, B: Custom made from 2 Tascam M3 frames: 16 in x 16 out, 16x8x4x2
 Monitor Amplifiers: Phase Linear
 Monitor Speakers: Custom made, Auratone 5C's, headphones ATH 1s and SE205s
 Echo, Reverb, and Delay Systems: Fostex 3050, Fostex 3070, Fostex 3181
 Other Outboard Equipment: Electro Harmonix pedals, assist for instruments, old Gibson tube amp
 Microphones: Asst. cardioids and dynamics, PE 120s, HB2s
 Instruments Available: Acoustic and electric guitars, accordion, soon to have house drum, and keyboards
Rates: We have block rates upon request, but we prefer to rate by the week for 5400 limitless time

• **SOUND RECORDERS INC.**
 4031 Guadalupe, Austin, TX 78751
 (512) 454-8324
 Owner: Miles Miller
 Studio Manager: Ben Blum

•• **SOUTHERN RECORDING**
 also **REMOTE RECORDING**
 56 E. 53rd Pl., Tulsa, OK 74105
 (918) 747-7380
 Owner: John Southern
 Studio Manager: John Southern

•• **SPECTRUM SOUND**
 also **REMOTE RECORDING**
 P.O. Box 1151, Bisbee, AZ 85603
 (602) 432-4424
 Owner: Scott Baekelana
 Studio Manager: T.V. Cook

•• **TOMLYN RECORDING STUDIO**
 Rt. 1, Box 696, Flint, TX 75762
 (214) 894-7713
 Owner: Tom Russett
 Studio Manager: Jim Frull

•• **TSB RECORDING, INC.**
 3013 Fountain View, Suite 210, Houston, TX 77057
 (713) 974-7481
 Owner: Tom Wollenberger
 Studio Manager: Tom Wollenberger



VOICEOVER STUDIOS
 Dallas, TX

•• **VOICEOVER STUDIOS**
 8625 King George Dr., Suite #335C, Dallas, TX 75235
 (214) 688-0600
 Owner: Chuck Wiedner
 Studio Manager: Darryl Eakin
 Engineers: Darryl Eakin
 Tape Recorders: 11: 117H, 10B, 11, 117H, MCI JH, 10A, 11, 4 track, MCI JH, 10A, 4 track, MCI JH, 10A, 4 track, (FTK) M-1 (A/V) JH, 10A (4 track only) (4 track) 4 track
 Mixing Consoles: Neotek Series 1, 16x8x2, transformerless, digital specs
 Monitor Amplifiers: BGW 1000s
 Monitor Speakers: JBL 4x6s
 Echo, Reverb, and Delay Systems: AEG BX20E, Eventide delay, Etreplex
 Other Outboard Equipment: at x 100 limiters, Eventide 510 Harmonizer with all options, Kora Vocorder, NAMM 580 and Wollensak 2870 A cassette machines, Technics SP15 turntable, Furman TNE700 reverb, de popper, Orban 1111 and 1112, and 1113 Controls and noise gear, Symetrix 1110, and other 1110 and 1113 reverb pedals
 Microphones: Neumann U87, U87, KM84, various AKG and Shure
 Instruments Available: Piano, 6 string, Cable Converter, (if possibly maintained, N/C)
Rates: \$45/hr with 15% add'l discount for C/O/D
 Extras: dbx noise reduction on All recordings, professional series, exclusively designed for TMS, 1100, 1110, Source material in DFW area and other markets, libraries, Amp x 110, speed duplicating, (not included), T.V. 1100, (not included), 1110, 1113, superior quality, Original music and script writing also available - references upon request

Direction: Ad agency, A/V, album, demo, and H.R. duplication work. Designed and owned by 10 yr. Director for T.M. Companies. Very professional, friendly, excellent, and highly motivated staff. The studio was carefully constructed and is not too wide, but is ready to achieve the most professional non-fabricated spots. This feat with the addition of an amazingly good sounding piano has led to growing recognition of its fine piano vocal sound. Experienced engineers, music, and a built-in smile. We invite comparison. God bless you!

•• **WATERWHEEL SOUNDWORKS**
 also **REMOTE RECORDING**
 900 East 5th St., Suite 111, Austin, TX 78702
 (512) 477-1108
 Owner: Brian Hulse

•• **WESTERN RANDALL STUDIO**
 P.O. Box 35611, Dallas, TX 75235
 (214) 350-0290

•• **THE WINDMILL**
 also **REMOTE RECORDING**
 3442 Nies, Fort Worth, TX 76111
 (817) 834-3879
 Owner: James N. Taylor

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The Southwest 16 Track

••• ACA RECORDING STUDIOS, INC. also REMOTE RECORDING

8208 Westpark Dr., Houston, TX 77063
(713) 783-1771

Owner: William D. Holtford
Studio Manager: William D. Holtford
Engineers: William D. Holtford, Dwight Holtford & Andy Bradley & D.W. (Bill) Hunsertort
Dimensions of Studios: Studio A 33 x 55 x 22, Studio B 21 x 35 x 22

Dimensions of Control Rooms: Studio A 10 x 11 x 10, Studio B 11 x 10 x 10, Control Room 11 x 11 x 11

Tape Recorders: M 988 D 16 track, M 5000 8 track, (3) Ampex 4004 2 1/2 inch, Ampex 44 1/2 track, (5) Ampex 451 2 track, Scully 180 micro, Scully 288B 16 track, Ampex ATH 2 track & 4 track

Mixing Consoles: Avtronics Moon 501 24 in x 4 out, Audio Group M 110A 16 in x 4 out, Stephenson Intertec Model 1141 16 in x 4 out

Monitor Amplifiers: McIntosh M 2100, McIntosh M 2100 (8) McIntosh MC 40

Monitor Speakers: Sennheiser Studio A, Control Room JBL 4333A, Auratone 4311, Auratone 5, Sennheiser Studio A7, Control Room JBL 16, Auratone 50, Control Room C, BEI Delta monitor, Auxiliary monitors, McIntosh A/S, BEI Delta monitors

Echo, Reverb, and Delay Systems: Lexicon 480, Lexicon Delta 1500

Other Outboard Equipment: Full track noise reduction on all channels in all control rooms, Lexicon Delta 1500, UREI 1176 and doubling, Orban De-Esser, dbx compressors, UREI, EA, EA limiter, Allison-Graham bus & Exp., UREI graphic EQs, UREI Delta, Metric, Metric, Custom mixers, phase shifter, PAIA Filter, Chor as Varispeed, Lexicon PCM 41, MXR Flanger Trans parer, EXH Stereo Exciter

Microphones: 4 Neumann U47, (5) 1678, KM84, (2) AKG C 12s, C451E, (2) Sennheiser 441s, Electro-Voice RE-0, 655E, 648 II, Sennheiser MKH 109, Sennheiser SM81, SM57, 545, (3) Alesis 49

Instruments Available: Fender Stratocaster or Telecaster, 2 Hammond or Fender Es & B10s with Leslie, Pearl Drum Kit, Fender Basses, piano, Mellotron

Rates: \$110 A 16 track, \$90 for recording, \$80 for mixing, 8 track & 1/2 inch, \$62 for mixing, 2 track, \$54 for Studio B 4 1/2 track, \$4 per hour

Extras: Arranged Production, Dr. Art Gitschler, Songwriter Arranger/Producer, Shutterberg Production, Bill Gunn, Highly experienced studio musicians available for virtually any musical production. Available with ACA for the Triangle Production Company, Movie Music Group, Challenge Records

Direction: ACA has been in continuous operation in Houston since Fall 1948 and has recorded many country hits, rock, Top 40 and popular national hits. We are experienced with symphonic music, all kinds of international and music of many ethnic origins. Specialties include Larry Energy Rhoades, South Africa, Australia, Burma, China, Japan and many others.

••• AL CLAUSER — ALVERA

also REMOTE RECORDING

402 S Broadway, Skiatook, OK 74070

(918) 396-1333

Owner: Al and Vera Clauser

Studio Manager: Al Clauser

••• STEPHEN ARNOLD RECORDING & PRODUCTION

1404 Forest Lane, Garland, TX 75040

(214) 494-6882

Owner: Stephen Arnold

Studio Manager: Bill Knobler

••• THE TOBY ARNOLD STUDIOS

3232 Commander Dr., Addison, TX 75001

(800) 527-5335

Owner: Toby & Dolly Arnold

Studio Manager: Marshall Such

••• AUDIO RECORDING CORPORATION OF ARKANSAS

also REMOTE RECORDING

100 N. Rodney Parham, Little Rock, AR 72205

(501) 224-1111

Owner: A R C A

Studio Manager: Clyde Snider, Dick Marendt

••• AUSTIN'S RIVERSIDE SOUND

also REMOTE RECORDING

P.O. Box 33207, Austin, TX 78764 (mailing address)

(7710 Metro.) Austin, TX

(512) 385-4060

Owner: Herschel E. Cunningham, Bill Johnson

Studio Manager: Herschel Cunningham

••• AVALANCHE STUDIOS

14000 W. 58th Ave., Arvada, CO 80002

(303) 424-5296

Owner: Harry Warman

Studio Manager: Karen Hing

••• BOYD SOUND STUDIO

P.O. Box 682, 103 N. Ballard St., Wylie, TX 75098

(214) 442-1620

Owner: Anthony D. Boyd

Studio Manager: Anthony D. Boyd

••• CEREBUS RECORDING

3620 N. Scottsdale Rd., Scottsdale, AZ 85251

(602) 990-8163

Owner: Allen Moore

Studio Manager: Diane Moore

••• COOKSOUND PRODUCTIONS, INC.

(formerly Shotgun Cook Productions)

also REMOTE RECORDING

6626 Hornwood, Houston, TX 77074

(713) 772-1006

Owner: Dwight 'Shotgun' Cook

Engineers: Dwight 'Shotgun' Cook, Tina Nelkin, Karen Cook,

Paul Killam, Norm Coleman

Dimensions of Studios: Studio I 10 x 10, Studio II 30 x 40

Dimensions of Control Rooms: Control Room I 25 x 25, Control Room II 30 x 20

Tape Recorders: MCI JH 16 w/Autolocator, Otari MX 5050 2 &

8 track, Tascam 25 2 2 track, Tascam 40 4 4 track, Technics RS

1500 2 track, 4 cassette machines, Studer A810 mastering deck

Mixing Consoles: Spectrasonics H/16 custom, 20 in x 8/16 out,

Tascam 3/2A, 15 in x 4 out

Monitor Amplifiers: AU-217, AU 717, Technics (phones)

Monitor Speakers: Modified L A studio monitors, JBL 4311 (4)

Auratones, JBL 4411 monitor speakers

Echo, Reverb, and Delay Systems: Master Room chamber,

Sound Workshop stereo reverb, Tapco stereo reverb, Eventide

Delay Lines

Other Outboard Equipment: Eventide H949 Harmonizer, dbx

4bx expander, dbx 165 compressor/limiter, dbx 150 Eventide

Harmonizer w/2nd output, dbx 158 2 channels of dbx for mix-

down Omnicrall noise gate

Microphones: AKG 414, Crown PZMs, Shure SM5s, SM81s,

SM57s, Neumann U82, Electro-Voice

Instruments Available: Horuquel studio piano, Ludwig drums

Rates: \$56/hr Studio I, \$78/hr Studio II, Add \$10 per hr for even-

ings and weekends

Extras: High speed duplication and computer labeling, free snack

area, Relaxed creative atmosphere with rough cedar, stained

glass, and low level track lighting. Major credit cards accepted.

Convenient accommodations nearby

Direction: Combine over 40 years of expertise in music and

recording with an abundance of resources like the finest equip-

ment, creative producers, and a highly motivated and talented

staff who have helped CookSound earn awards and acclaim in the

advertising and music industries and you will find the reason for

our success. We produce national radio campaigns, jingles and

original music for film, records and demos. Please write for our

free demo

••• DESERT SOUND RECORDING INC.

3026 W. Clarendon, Phoenix, AZ 85017

(602) 264-1280

Owner: Desert Sound Recording Inc.

Studio Manager: Sandy Lamont

Engineers: Sandy Lamont

Dimensions of Studios: Main Studio 30 x 40, Drum Booth 8

x 8, Vocal Booth 6 x 6

Dimensions of Control Rooms: 12 x 15

Tape Recorders: Scully 288B 16 track, Tascam 80 8 track

w/dbx Otari 5050B 2 track, TEAC 3300 2 track, TEAC 3300 1/4

track, (6) Sharp cassette decks

Mixing Consoles: Custom 24 in x 24 out, 4 buss, 8 sends, 24

channel cue mix

Monitor Amplifiers: McIntosh MC 1200, Haller DH200, (2)

custom tube amps

Monitor Speakers: (4) JBL 4311, Auratones

Echo, Reverb, and Delay Systems: (2) Custom built plate reverb

systems, (2) custom spring reverb systems, custom electronic

reverb, DeltaLab DL 2, MXR Flanger-Doubler, MXR Digital (full

memory)

Other Outboard Equipment: EXH Exciter, (2) UREI 1176

limiters, (2) dbx 160 limiters, Orban De-Esser, (6) Sweep EQs,

(16) custom noise gates, (3) custom compressors

Microphones: AKG 451s, 414s, Sennheiser 421s, 441, Country

man EM101, AKG D12, Neumann U47, Crown PZM 30, GPs,

Shure SM57s, SM57, Electro Voice RE-0, 661s, Beyer M500N

Instruments Available: Yamaha grand piano, ARP 2600, ARP

String Ensemble, Rhodes piano, guitars, bass, drums

Rates: \$35/hr 16 track (10 hrs \$400), \$25/hr 8 & 2 track



DIAMOND NIGHT RECORDING STUDIO
Dallas, TX

••• DIAMOND NIGHT RECORDING STUDIO

9024 Garland, Rd., Dallas, TX 75218

(214) 321-2049

Owner: DN Productions

Engineers: George Geurin, chief engineer

Dimensions of Studios: 25 x 35

Dimensions of Control Rooms: 20 x 30

Tape Recorders: Studer A80 MkIII 16 track, Studer A80 MkIII 2

track, Sony PCM F1 2 channel digital, Hevox B77 1/4 track, (5)

Sony Audio Lab Series TC 888B cassette decks

Mixing Consoles: Allen & Heath Syncon B w/Fadex automation
Monitor Amplifiers: Crown, Sony Audio Lab Series, QSC Revox

Monitor Speakers: Westlake HR-7F quad-amped, JBL 4311, ADS L810/II, Auratones

Echo, Reverb, and Delay Systems: Lexicon 224X digital reverb, Lexicon Super Prime Time w/memory extension, PCM 41 digital delay

Other Outboard Equipment: dbx 900 series rack w/compressor/limiters, noise gates and parametric EQ, dbx 160 compressor/limiter, UREI 1178 stereo limiter, UREI 546 dual parametric EQ, UREI 562 and Audioarts 1500 notch filters, dbx noise reduction

Microphones: Neumann, AKG, Sennheiser, Crown PZM, Beyer, Sony, E.V. Shure

Instruments Available: Yamaha C 7D grand piano, Premier drums, variety of keyboards and synthesizers

Rates: Call for rates

Extras: Direct to 2 channel digital recordings, special live digital music or sound effects recording, digital storage of masters, tape copy facilities, complete promo packages designed, complete production of album or single packages

Direction: We represent quality with our equipment, environment, and staff. Our equipment is fully state-of-the-art from microphones to mastering deck. The studio area is large and spacious with 14' overhead for natural ambient sound, and separate isolation rooms for vocals, drums, and piano. For the comfort of our clients, we have provided a large lounge with wet bar, color TV, video games, stereo system, and kitchen facilities. Diamond Night offers the staff, equipment and environment to give you the best possible product.

••• **DUSTY DICKERSON RECORDING STUDIO**

1514 Mercury Dr., Houston, TX 77029

(713) 673-6385

Owner: Dusty Dickerson

••• **EDENWOOD RECORDING STUDIOS**

7319-C Hines Place, Suite 201, Dallas, TX 75235

(214) 630-6196

Owner: Jerry Swafford

Studio Manager: Jerry Swafford

Engineers: Jerry Swafford, Dave Scott

Dimensions of Studios: Studio A 640 sq ft, Studio B 150 sq ft

Dimensions of Control Rooms: Control A 250 sq ft, Control B 150 sq ft

Tape Recorders: MCI JH100 16 track, Otari MTR10 2 track, Otari 5050B 2 track, Ampex 351 1 x 2; Ampex 351 2 x 2

Mixing Consoles: Tangent 3216-VCA, 22 in x 16 out, Sound Workshop Model 30, 12 in x 8 out

Monitor Amplifiers: Crown, BGW

Monitor Speakers: JBL 4333As, 4310s, Auratones

Echo, Reverb, and Delay Systems: AKG, DeltaLab

Other Outboard Equipment: Orban De-Esser, dbx 160s, 165, UREI 1176

Microphones: Neumann U87, AKG 414EB, D202, 707, Sennheiser 421, Sony ECM 22P, ECM 21P, F113, Crown PZM Shure SM81, E.V. 664, Beyer, MB

Instruments Available: 9' Kawai, Hammond RF100 w/Leslie Mini-Moog, electric guitar, electric bass, Wurlitzer electric piano

Video Equipment & Services: SMPTE Interlock w/BTX, SMPTE reader, generator video display (Cypher), 3/4" JVC Ampex VPR-20 available for extra charge

Rates: Audio for Video \$120/hr, 16 trk \$80/hr, 4, 2, mono \$70/hr

••• **ELDORADO RECORDING**

1006-A Vista del Cerro, Tempe, AZ 85281

(602) 966-3343

••• **FAST FORWARD**

515 E. Walnut, Garland, TX 75040

(214) 494-1900

Owner: Sid Wayne

Studio Manager: Jeff Wayne

••• **FLASH PRODUCTIONS**

also **REMOTE RECORDING**

502 S. Austin #9, Webster, TX 77598

(713) 332-3265

Owner: Renel Boudreaux

Studio Manager: Bobby L. Andrews

••• **GOLDUST RECORDS**

115 E. Idaho Ave., Las Cruces, NM 88001

(505) 524-1889

Owner: Emmitt H. Brooks

Studio Manager: Emmitt H. Brooks

••• **GOOD VIBRATIONS, THE RECORDING STUDIO**

11410 Harry Hines, Ste. #6, (at Royal),

Dallas, TX 75229

(214) 247-1537

Owner: Bob Campbell

Studio Manager: Elaine Edwards



The Southwest
16 Track

••• **GRAVITY RECORDING STUDIOS**

141 Spur place, Nogales, AZ 85621

(602) 281-1746

Owner: Miguel Crisantes

Studio Manager: Dicky Valenzuela

Engineers: Miguel Crisantes, Dicky Valenzuela, Hector Gomez

Dimensions of Studios: 19 x 32, drum booth 9 x 14

Dimensions of Control Rooms: 19 x 23

Tape Recorders: Otari MTR 90-16-24 16 w/Autolocator, Otari MTR 10-1/2 2 track; TEAC 35-2 2 track, Technics M95 cassette.

Mixing Consoles: Tangent 32-1/6 24 in x 16 out

Monitor Amplifiers: UREI 6500 with UREI filters

Monitor Speakers: UREI 811, Tannoys, Auratone 5C

Echo, Reverb, and Delay Systems: Echoplex II, DeltaLab DL1, Lexicon Prime Time

Other Outboard Equipment: Eventide H949 Harmonizer w/ keyboard limiters, Omnicral noise gates, Symetrics noise gates, MXR flangers, Vocoder by E.H., Scott graphic analyzer, EXR Exciter

Microphones: Neumann U89 (2) AKG 414, Sennheiser 421, (8) E.V. RE16, Beyer 50, Shure SM7, SM57 Sony

Instruments Available: Yamaha studio upright piano, Rogers drum set w/Paste cymbals, assorted electric and acoustic guitars

Sequential Circuits Prophet 5, Fender Rhodes, Hammond M5 w/Leslie, Roland synthesizer

Rates: On request

Extras: Upgrading to 24 track by spring, also a complete remodeling of studio and control room

••• **HUDDLESTON'S RECORDING STUDIO**

1119 W. Garland Ave., Garland, TX 75040

(214) 487-8120

Owner: Gene Huddleston

Studio Manager: Paul Hill

••• **INSIDE TRACK STUDIO**

313 N. Locust, Denton, TX 76201

(817) 566-2367

Owner: J. Miller

••• **ITTI STUDIOS**

4235 South Memorial, Tulsa, OK 74145

(918) 663-7700

Owner: Mendith R. (Sonny) Gray

Studio Manager: Mendith R. (Sonny) Gray

••• **THE LAST RECORDING STUDIO, LTD.**

also **REMOTE RECORDING**

2539 Pearl St., Boulder, CO 80302

(303) 442-1158

Owner: Mark Barnett

Studio Manager: Dick Jenkins

••• **LONE STAR RECORDING**

1204 North Lamar, Austin, TX 78703

(512) 478-3141

Owner: Ed Gunn, Stan Coppinger

Studio Manager: Sarah Light

••• **ROSEWOOD SOUND**

4307 Merrel Rd., Dallas, TX 75229

(214) 350-0905

Owner: Jimmy Kelley

Studio Manager: Larry "Bull" Dozier & J.R. McMath III, Lana Kelley

••• **SOUND IMAGE RECORDING**

325 S. Westwood #8, Mesa, AZ 85202

(602) 835-9155

Studio Manager: Jimmy Gmnes

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ALIGNMENT HEAD ASSEMBLY!**

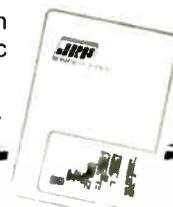
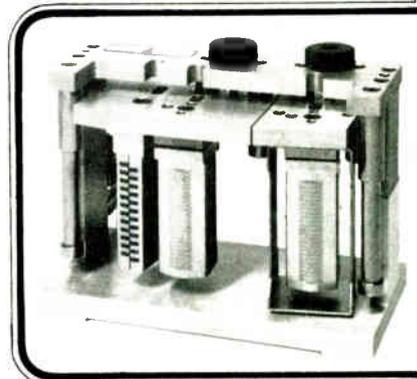
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Circle #023 on Reader Service Card

••• SOUNDTECH STUDIOS
2750 W. Osborn Rd., Phoenix, AZ 85017
(602) 257-0444
Owner: Sarge Walden
Studio Manager: Sarge Walden

••• SOUNDTRACK RECORDING STUDIO
2011 North Alamo St., San Antonio, TX 78215
(512) 224-4107
Owner: Mike Hettler Jr.
Studio Manager: Mel Moran

••• SOUTHWEST RECORDINGS
2031 Libbey, Houston, TX 77018
(713) 681-7565
Owner: Jeff Smith
Studio Manager: Jeff Smith

••• SOUTHWEST SOUND STAGE
5128 Gallahad, Garland, TX 75040
(214) 495-8277 or 530-8538
Owner: Matt Tapp, John Marshall

••• TIM STANTON AUDIO
also REMOTE RECORDING
1501 West Fifth St., Austin, TX 78703
(512) 477-5618
Owner: Tim Stanton

Studio Manager: Tim Stanton
Dimensions of Studios: 20 x 24 x 12
Dimensions of Control Rooms: 16 x 16
Tape Recorders: Tascam 85 1b autolocated w internal dbx noise reduction 16 track, Otari MX 5050B II transformerless 2 track (2) Tascam 42 2 track (2) Marantz SD 8000 double speed cassette decks
Mixing Consoles: Ramsa WR8816 16x4x16
Monitor Amplifiers: Crest 2500S, Crown D150 D75 D60
Monitor Speakers: JBL 4311Bs Auratones, Yamaha NS10M
Echo, Reverb, and Delay Systems: MICMIX Master room reverb, Lexicon Prime Time digital delay w memory extension, Loft 450 analog delay
Other Outboard Equipment: dbx 160s Valley People Dyna

Mites, Loft chorus phaser flanger, dbx noise reduction gates, De-essers, a few lights & bells and some hype & jive!
Microphones: Neumanns, AKCs, Sennheisers, Shures, RCA, Audio Technica, E.V.
Instruments Available: Yamaha upright, studio amps, just about anything is rentable locally
Rates: Comfortable — call

••• TOBY'S CUSTOM RECORDING STUDIO
also REMOTE RECORDING
1024 South Presa St., San Antonio, TX 78210
(512) 533-3030
Owner: Toby Torres
Studio Manager: Toby Torres

••• TOPANGA STUDIOS
5022 N 7th St., Phoenix, AZ 85012
(602) 241-9182
Owner: Bill Richardson, Cam Empens
Studio Manager: Bill Richardson, Cam Empens

••• TRAX RECORDING STUDIO
8539 Ferguson Rd., Dallas, TX 75228
(214) 321-1837
Owner: Buford Jones, John Storey
Studio Manager: Buford Jones
Engineers: Buford Jones, John Storey
Dimensions of Studios: 17 x 30
Dimensions of Control Rooms: 12 x 12
Tape Recorders: Tascam 85-16 16 track, Sony 850 2 track, Pioneer 701 4 track, AIWA cassette, Sony PCM F1 digital 2 track
Mixing Consoles: Tascam M 16, 24 in x 8 out
Monitor Amplifiers: Phase Linear 700, Crown D 75, Crown D 60 headphone amps, Crown 800A
Monitor Speakers: UREI 81 4s, Yamaha NS 10s, Beta 0 75
Echo, Reverb, and Delay Systems: Lexicon Prime Time delay, Eventide Harmonizer, AMS RMX-16 digital reverb
Other Outboard Equipment: UREI limiters, dbx limiters, Bi Amp graphics
Microphones: PML DC-63, misc Shures, Sennheisers, Sony's
Instruments Available: Yamaha 5'3" grand, Ludwig drums, Fender Rhodes, Casio 202, Sunn and Music Man guitar amps
Rates: \$50/hr

••• WALK ON WATER STUDIOS, INC.
also REMOTE RECORDING
Rt. 2, Box 566-H, New Braunfels, TX 78130
(512) 629-4396
Owner: Ken Brazle, Ron Sturm, Bruce Weidy
Studio Manager: Ken Brazle

••• WARHORSE STUDIOS
also REMOTE RECORDING
7516 Ave. H, Lubbock, TX 79464
(806) 745-7421
Owner: Mike Deardorff, Bill Orkander
Studio Manager: Mike Deardorff

••• ZAZ RECORDING STUDIOS
6711 W. Commerce, San Antonio, TX 78227
(512) 432-8147, 432-7893
Owner: Joey Lopez
Studio Manager: Robert "BB" Blackstone



A.C.E.S. USA
244 LYELL AVENUE
ROCHESTER, NEW YORK 14608
(716) 458-5613 TELEX: 215406

MODEL TR16

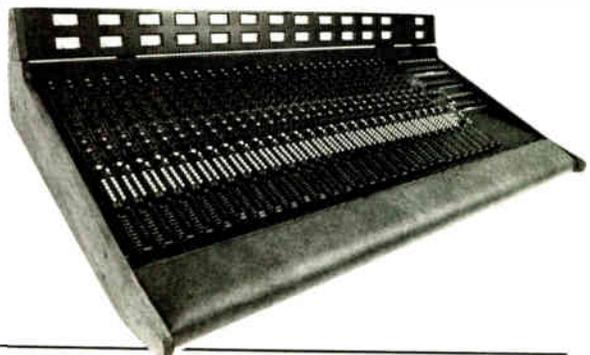
± 50% varispeed
68dB S/N ref.
320Nwb/m
30 to 20 kHz res.
Silent drop in/out
30 i.p.s. to order
Full function remote
Zero locate
2 year warranty



Model TR16 16 track-2 inch... **\$14,900**
Model TR 24 24 track-2 inch... **\$17,200**

MODEL ML24'24

Input LED PPM's
5 Band Equalization
48v Phantom Powering
Transformer Balanced
100mm Cond. Plastic faders
Built-in Patchbay
Two year warranty



Model TR2 2 track-½ inch... **\$5,000**
Model SM24'16'2... **\$12,900**

Model ML24'24 24 into 24 in line console with patch bay... **\$15,900**

Diamond Night—Privacy, Comfort and Quality Sound



The entertainment industry has its eyes on Dallas. We are quickly becoming a major center for music, video and movie production. Diamond Night is proud to be the first of the new generation of Dallas studios.

What is the difference? It starts with the equipment. Although we are beginning with sixteen tracks, our equipment is fully state-of-the-art from microphones to mastering deck. Diamond Night is the first Studer equipped studio in North Texas, featuring A-80 MkII sixteen and two-track recorders as well as Sony stereo digital. Our console is the Allen & Heath Syncon B with Valley People's Fdax automation system. We feature quad-amped Westlake HR-7F monitors powered by Crown and Sony Audio Lab Series. Our signal processors include the Lexicon 224X digital reverb, Super Prime Time and PCM-41, dbx noise reduction and a full array of equalizers, compressors and noise gates by UREI, dbx and Audio Arts. Our mike lineup features Neumann, AKG, Sennheiser, Beyer, Sony, Crown PZM, EV and Shure. We also offer a Yamaha C-7D grand piano and

other instruments at no additional charge.

Diamond Night was designed with the comfort of the performers as a top priority. Our concept is to give the players the privacy and atmosphere necessary for the creative process to be unhindered. The recording artist has complete control of the activities in and around the studio so that outside distractions are completely eliminated. We have provided a large lounge with wet bar, color video and stereo system, kitchen facilities, and an outdoor beer garden with hot tub. After all, the best recordings are made where the musicians feel most at ease.

All of this would be pointless if the cost were beyond the reach of the average musician. For all of the advantages mentioned, our rate is still affordable to anyone requiring a professional quality recording. We are conveniently located on Garland Road near White Rock Lake in Dallas.

Whether your next project is a full album production or a simple demo tape, Diamond Night has the staff, equipment and environment to give you the best possible product.



9024 Garland Road
Dallas, Texas 75218
214/321-2049



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The Southwest 24 Track

•••• ALDERSON PRODUCTIONS
1915-B 19th, Lubbock, TX 79401
(806) 763-3602
Owner: Alderson Productions Inc
Studio Manager: Bruce Alderson

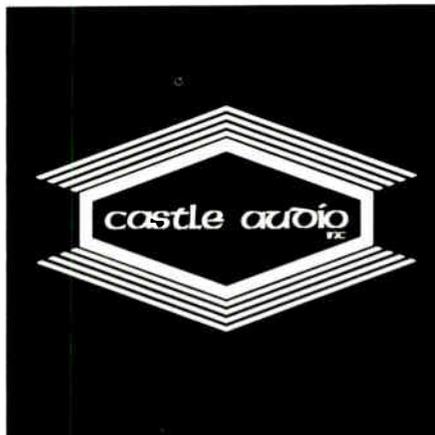
•••• AUDIO VIDEO RECORDERS OF ARIZONA
3830 N. 7th St., Phoenix, AZ 85014
(602) 277-4723
Owner: Floyd Ramsey
Studio Manager: Tim Ramsey

•••• AUSTIN RECORDING STUDIO
4606 Clawson Rd., Austin, TX 78748
(512) 444-5489
Owner: Wink Tyler
Studio Manager: Wink Tyler

•••• BENSON SOUND, INC.
3707 S. Blackwelder, Oklahoma City, OK 73119
(405) 634-4461
Owner: Larry R. Benson
Studio Manager: Linda Groves
Engineers: Gary Duggan, Larry Benson
Dimensions of Studios: 35 x 45 x 17
Dimensions of Control Rooms: 20 x 17 x 12
Tape Recorders: MCI 24 track, (2) MCI 2 tracks
Mixing Consoles: Harrison 40/32, 32 in x 32 out
Monitor Amplifiers: Crown DC-300 (C.R.); Crown D-150 (cue)
Monitor Speakers: UREI, Altec 9844, Auratones
Echo, Reverb, and Delay Systems: EMT Plate, AKG BX-10
Other Outboard Equipment: Marshall Time Modulator, (2) Eumig cassette decks, Eventide Harmonizer, Orban De-Esser, (8) Kepex's, (8) Neve limiters
Microphones: Sony, Electro-Voice, Shure, Neumann, Sennheisers, too many to detail
Instruments Available: 9 Yamaha concert grand piano, Sequential Circuits Prophet 5, Fender Rhodes, Hammond B-3, Chamberlin 2 manual, unbelievable drum and percussion booths, guitar amps.
Rates: 24 track master \$85/hr, stand-by \$70/hr, 16 track master \$80/hr, stand-by \$65/hr, 8 track master \$70/hr, stand-by \$55/hr, 2 track master \$50/hr (Dolby A N/C), dbx: \$10/hr, automated mix: \$10/hr applies to 8-16 or 24 track

•••• BUFFALO SOUND STUDIOS
910 Currie St., Fort Worth, TX 76107
(817) 335-7733
Owner: Jim Hodges
Studio Manager: Buff Haskin

•••• CASTLE AUDIO
1015 N. I-35 East, Suite 200, Carrollton, TX 75006
(214) 242-4283
Owner: Tom Townson
Studio Manager: Drew Townson
Engineers: Robert L. Gentry
Dimensions of Studios: 30 x 26 x 13, isolation booth and widely variable acoustics



CASTLE AUDIO
Carrollton, TX

Dimensions of Control Rooms: 22 x 17 x 14
Tape Recorders: Otari MTR-90 II 24 track, Otari MTR-10 2 track, Otari 5050B 2 track
Mixing Consoles: Amek "Angela" 28/24
Monitor Amplifiers: Haller, Pulsar, QSC
Monitor Speakers: JBL 4430, 4411, Auratones
Echo, Reverb, and Delay Systems: Ursa Major digital reverb, MICMIX Super C reverb, Roland Space Echo, RSS digital delay
Other Outboard Equipment: DeltaLab Harmonicomputer, EXR Vocal Exciter, Orban parametric EQs, White 1/2 octave EQs, dbx compressor/limiters, dbx noise reduction, Eumig FL1000 cassette desk, phaser, flanger, vocal stressor expander
Microphones: Neumann, Sennheiser, Crown PZM, AKG, Audio Technica, Beyer, Shure, E-V
Instruments Available: Yamaha C7 grand piano, Moog synthesizer, Mesa and Fender amps, Fender, Gibson and Ovation guitars
Rates: Available upon request

•••• CECCA SOUND
3198 Royal Lane, Dallas, TX 75229
(214) 350-6945
Owner: Charley Pnde
Studio Manager: Kraig Pnde

•••• CEDAR CREEK RECORDING
5102 Brighton Rd., Austin, TX 78745
(512) 444-0226
Owner: Austin Media Productions, Inc
Studio Manager: Fred Remmert
Engineers: Ron Rogers, Fred Hemmert, Travis Remmert
Dimensions of Studios: 15 x 20 x 7 (approx.)
Dimensions of Control Rooms: Several rooms of various sizes
Tape Recorders: MCI JH24/24 track, MCI JH110B 2 track, Technics 1520 2 track, Sony 1/4 track; Technics RS-M 85 cassette



CEDAR CREEK RECORDING
Austin, TX

(others available)
Mixing Consoles: MCI JH636 w/Automation, 26 x 24
Monitor Amplifiers: Crown PSA-2 (mains) Roland SPA 120 (references)
Monitor Speakers: JBL 4430 biradials (mains), JBL 4401 (references), Bose 301 (references), Automation's, ECI 2-way mini-speakers
Echo, Reverb, and Delay Systems: Lexicon Super Prime, Lexicon 224 reverb, Eventide 949 (delay)
Other Outboard Equipment: Orban 522E parametric EQ, UREI 530 graphic EQ, (2) dbx compressor-limiters (165A), UREI 1178 stereo limiter, Eventide 949 Harmonizer, Valley People "Dynamite" noise gates (4)
Microphones: Neumann, AKG, Sennheiser, Shure, E.V., Beyer, and any others available on request
Instruments Available: Kawai 6' grand, Oberheim OBX-A polyphonic synthesizer, full Tama studio drum kit, Gibson electric guitar, B&L bass guitar, Ovation acoustic, Takamine acoustic, Mesa Boogie Mark II B amp
Rates: \$50/hr plus engineer and tap
Extras: Our studio is surrounded by 9 acres of private property covered with Texas trees. Kitchen facilities, TV, artists' lounge area, sundeck, relaxed atmosphere. We also offer in-house producing, and the availability of the best musicians in Texas for sessions
Direction: As many as we can go on. Clients include: Freeflow Productions, 14K, James Anderson, Steve Mendell; Private Lives, many others

•••• CEDAR RIDGE STUDIOS
also REMOTE RECORDING
110 Berry Rd., Houston, TX 77022
(713) 697-5393
Owner: Lou Landreneau
Studio Manager: John Kaimbach
Engineers: Charles Eichelberger
Dimensions of Studios: Approx. 29L x 25'W—complete isolation
Dimensions of Control Rooms: 18' x 15'—symmetrical design
Tape Recorders: Otari MTR-90 w/Automation 24 track, Ampex 2 track
Mixing Consoles: Tangent, 24 in x 24 out; Interface 300, 16 in x 8 out, Interface 104, 8 in x 8 out
Monitor Amplifiers: MAC 6100, Crown D-150, MAC 250, Crown D-300
Monitor Speakers: JBL 4311s, Elichsch Heresy's, Auratone monitors
Echo, Reverb, and Delay Systems: MXR digital delay, (all four cards) Loft digital delay, AKG BX-10 reverb, Eventide Harmonizer
Other Outboard Equipment: dbx 150 compressor/limiter, DX-8 dbx noise reduction, Eventide Harmonizer, UREI limiters
Microphones: Electro-Voice PL76 PL5, Shotgun, Neumann U87, KM84, KM85, Beyer M101, M67, M500, Sennheiser; AKG C414
Instruments Available: Martin D18 Fender Strat, Ovation bass, Ovation 6 & 12 strings, full set Ludwig drums, several very fine new and older Fender tube amps, and much, much more, soon digital reverb
Rates: At 24 tracks \$85/hr, 1" 8 track \$50/hr, 1/2" 8 track \$40/hr

•••• CHATON RECORDINGS
also REMOTE RECORDING
5625 E. Nauni Valley Dr., Scottsdale, AZ 85253
(602) 991-2802
Owner: Ed & Marie Ravenscroft
Studio Manager: Steven Moore
Engineers: Ben Taylor, Steven Moore, Tim Smith, Andy Seagle
Dimensions of Studios: 14 x 20, Drum Booth 6 x 8
Dimensions of Control Rooms: 14 x 16
Tape Recorders: Otari MTR-90 24/16 track, Otari 5050-8 Mk III 8 track, Otari MTR-10 2/4 track (1" and 1/2"), Otari 5050B 2 track



Châton
RECORDINGS

CHATON RECORDINGS
Scottsdale, AZ

Mixing Consoles: Soundcraft Series 2400, 28 in x 24 out, 52 mixdown

Monitor Amplifiers: UREI 6500, BGW 750, BGW 100, AB 100
Monitor Speakers: UREI 811, Yamaha NS-10s, Auratones, Advents, JBL 4311s

Echo, Reverb, and Delay Systems: Lexicon 224X, Echoplate I stereo plate, Master Room XL-305 stereo, DeltaLab DL2 Acoustic-computer, DeltaLab DL4 Time Align

Other Outboard Equipment: Eventide H949 Harmonizer w/keyboard, dbx 900 modular rack containing 903 comp/limiters, 904 noise gates, 902 De-esser, UREI 1178 stereo limiter/compressor, (3) dbx 160 comp/limiters, EXR Exciter, BTX Cypher SMPTE Reader Generator, BTX Shadow synchronizer

Microphones: Neumann U87s, U89s, U47, KM84, AKG 414s, D12E, Sennheiser 421s, 441, PML, Crown PZM; E-V, Shure, Sony's, Countryman Type 85 direct box, Ohm-Tronics direct box

Instruments Available: Steinway 7' grand piano, Sequential Circuits Prophet 5, ARP String Ensemble, Roland Vocoder, Roland TR-808 drum synthesizer, ARP Pro Soloist Complete set of Gretsch drums and Roto-Toms, LP conga drums, timbales, assorted percussion instruments Steinberger bass guitar, Fender Rhodes Mark II, Polytone Mini Brute IV bass amp, Fender Deluxe guitar amp

Video Equipment & Services: Video sweetening w/24 track synchronization, Sony KX-2501 video monitor, Panasonic AU-700 ¾" video deck, Panasonic NV-9300A ¾" deck, Panasonic NV-8200 ½" VHS deck

Rates: 30/46 track mixdown \$85/hr, 16/24 track \$70/hr, 8 track \$50/hr 16/24 track video sweetening \$85/hr Châton's CAT 24 track remote truck \$600/day

Extras: Châton is located on 2½ acres with luxury resorts nearby, very quiet, no traffic. The studio and remote truck are well maintained and have a comfortable atmosphere with many creative tools for both musicians and production staffs

•••• THE CORNERSTONE RECORDING COMPANY
also REMOTE RECORDING

100 W. Wilshire/C-2, Oklahoma City, OK 73116
(405) 848-8400

Owner: Kenneth A Sarkey
Studio Manager: Kenneth A Sarkey

Engineers: Kenny Sarkey, Steve Merkel, independents
Dimensions of Studios: A 30 x 45 x 14 w/5 isolation booths, B 12 x 13

Dimensions of Control Rooms: A 18 x 20, B 14 x 15

Tape Recorders: Stephen's Electronics 821, 24/16 track w/Q II Autolocate computer, MCI JH-110B 2 track, w/Autolocate, Otari 5050B, 2 track, Otari 5050A, 2 track, Sony TC-630, ¼ track, Nakamichi, Technics cassette

Mixing Consoles: Tangent 3216, 28 in x 24 out, Tascam 10, 12 in x 8 out

Monitor Amplifiers: (2) Crown D-150, Crown D-60, Technics SU 8600
Monitor Speakers: JBL 4435 biradials, Auratone 5C, JBL 4311s, RTR's Altec Model 5s

Echo, Reverb, and Delay Systems: Lexicon 224 digital reverb, EMT 140 tube stereo reverb, AKG BX-10 reverb, MXR digital delay, Lexicon Prime Time delay

Other Outboard Equipment: UREI LA-4 compressor/limiters dbx 160 compressor/limiter, dbx 165 compressor/limiter, EXR Exciter, PAIA Dual Limiter (cue), Valley People Dynamite stereo limiter/gate/de-esser, Crown EQ-2, Dynaco graphic EQ, Otari Cralt noise gates, Audio Control Real-Time Analyzer & graphic EQ, dbx noise reduction, phase & flangers

Microphones: Neumann, Sennheiser, Sony, Shure, Beyer, Electro-Voice, Altec, Crown PZM, AKG, RCA

Instruments Available: Yamaha 7'-5" grand piano, Rhodes stereo electric piano, Wurliizer electric piano, Hammond B-3 organ w/Leslie, ARP Omni synthesizer, Mini Moog synthesizer, Rogers drum kit w/double bass, Yamaha drum set with 5 concert, 5 double headed toms, Yamaha, Fender, and Pignose guitar amps, complete percussion/effects

Rates: 16 & 24 track recording and mixing \$50 - \$80/hr including engineer and all studio instruments. Discount block and producer rates available



The Southwest
24 Track

•••• CRYSTAL CLEAR SOUND

4902 Don Drive, Dallas, TX 75247
(214) 630-2957

Owner: Merle D Baker
Studio Manager: Keith Rust

Engineers: John Carey, chief, Keith Rust
Dimensions of Studios: 30 x 40

Dimensions of Control Rooms: 14 x 18

Tape Recorders: MCI JH24 24 track, MCI JH110B 2 track, Ampex 440 2 track Aiwa cassette 6900 2 track, TEAC 40-4 4 track

Mixing Consoles: MCI 636 automated, 28 in x 24 out
Monitor Amplifiers: Crown, Crest

Monitor Speakers: UREI 811, JBL 4311, Visonic-Little David
Echo, Reverb, and Delay Systems: Korg SDD3000 programmable digital delay, Audi-ence plate, AKG BX20, Eventide Harmonizer

Other Outboard Equipment: Kepex, Gain Brain, Orban parametric, dbx 165, UREI digital metronome, Orban De-esser

Microphones: Neumann U87, KM84, Sony ECM 33, AKG 414, 451, Shure SM57, E-V RE20, RE15, Sennheiser 441, 421

Instruments Available: Kawai grand Hammond B3 w/Leslie, Roland jazz chorus guitar amp

Rates: \$75/hr days, \$60/hr night \$250/midnight to 6 am



CSS RECORDING STUDIOS
Las Vegas, NV

•••• CSS RECORDING STUDIOS

also REMOTE RECORDING
2010 E. Charleston Blvd., Las Vegas, NV 89104
(702) 384-1212

Owner: Jon M Parks, Robin Freeman

Studio Manager: Debbie Parks

Engineers: Robin Freeman, Mark Harmon, Bob Lentini, James Root, Bob Garretson

Dimensions of Studios: 35 x 32

Dimensions of Control Rooms: 18 x 24

Tape Recorders: MCI JH24 w/Autolocator III Quor, Tascam 80-8 8 track, Tascam 40-4 4 track, MCI JH110 2 track, Ampex 440 2 track

Mixing Consoles: MCI JH528, 28 in x 24 out

Monitor Amplifiers: Crown DC300s, Crown DC150s, SAE 000
Monitor Speakers: JBL 4333s, JBL L100s, Auratones

Echo, Reverb, and Delay Systems: Lexicon 224 digital EMT 240, Eventide digital, MXR digital

Other Outboard Equipment: 24 channel Dolby, 24 channel dbx, Eventide DDL/Harmonizers, Omnipressor, flanger, phaser, Kepex, Gain Brains, UREI 1176 limiters, UREI LA3A and LA4A limiters, dbx 162 limiters, Aphex Aural Exciter, Orban De-esser, UREI 527 A graphics, Crown parametrics, Crown pre-amps, SAE 2700 EQs

Microphones: Neumann U87, U47, KM83, KM84, KM85, AKG 414, 451, 452, E-V RE20, Shure SM54, SM56, SM57, SM57, 456, Sennheiser MD441, MD421, Sony C37, ECM22, 33F, Altec 689BX

Instruments Available: Kawai 7'4" grand piano, Fender Rhodes, Hammond B3, Yamaha drums, Fender amps, percussion instruments, (no fee) Synclavier available by appointment.

Video Equipment & Services: ¾" monitoring and video interlock capability upon request. Video and music production

Rates: \$70 - \$140/hr

Extras: An in-house production company of writers and producers for album projects and commercial jingles. Our jingles have won the International Film & Television award as well as Best of Show at the 1982 Addy Awards

Direction: All of our engineers have gold records to their credit. Our clients include Christopher Cross, Diana Ross, Kenny Rogers, Gladys Knight, Tammy Wynette, Mel Tillis, Paul Anka, Wayne Newton, Tony Orlando, Waylon Jennings, Bill Cosby and many more. Also various pre-recorded events for MGM "Jubilee," Las Vegas Hilton's "Moulin Rouge," Flamingo Hilton's "City Lights," and Merv Griffin



DALLAS SOUND LAB
Irving, TX

•••• DALLAS SOUND LAB

Four Dallas Communications Complex, Suite 119,
Irving, TX 75039

(214) 869-1122

Owner: Russell Whitaker

Studio Manager: John P Marshall

Dimensions of Studios: Studio A rhythm section area - 28 x 24, scoring area - 44 x 30. Studio B film mixing theatre - 48 x 30

Dimensions of Control Rooms: Control room A 25 x 21, Control room B 16 x 14

Tape Recorders: Otari MTR 90 24 track, MCI JH114 24 track, Otari MTR10 4 track, MCI JH10 4 track, Otari MTR10 2 track; MCI JH10 2 track, Sony PCM10 digital 2 track mastering machine

Mixing Consoles: MCI JH536 automated console, 36 input
Monitor Amplifiers: Crown M2000 w/Delta-Omega card, Crown DC75, DC150, DC300, Crest P3500

Monitor Speakers: UREI 813B, JBL 4333, JBL 4311, JBL 4301, Eastlake TM7, E-V Interface I, Auratone 5C

Echo, Reverb, and Delay Systems: Lexicon 224 digital reverb, Lexicon PCM41, Eventide 949, Eventide 910, plate reverb, assorted live chambers

Other Outboard Equipment: Compressors/limiters/expanders/EQ by UREI, Allison, dbx, Valley People & Dietz Q-lock 310 by Audio Kinetics

Microphones: Full array of microphones by Neumann, Sennheiser, AKG, RCA, Sony, E-V, Crown, Beyer, & Shure

Instruments Available: Sequential Circuits Prophet 5 w sequencer, Hammond B3, Mini Moog, Hohner Clavinet, Yamaha CS50, Linn Drum, Steinway 9' concert grand piano, Roland bass line & drummatix

Video Equipment & Services: IVC CR8200 ¾" for sweetening 16 mm and 35 mm projectors and dubbers by MTM for scoring to picture

Rates: Call for quotes

Direction: Dallas Sound Lab will be open in the Spring of 1983. The facility will consist of Studio A - A 48-track recording studio with video/film interlock capable of 60-piece capacity orchestra scoring, video sweetening, and album-jingle production, with audio tie lines to the three sound stages at Las Colinas for live TV shows, concerts, etc., and Studio B - A film mixing theatre for automatic dialogue replacement, Foley effects, screening and film mixing. Dallas Sound Lab is designed to meet the complete needs of clientele dealing with any aspect of audio for video or film production.

•••• DIGITAL SERVICES RECORDING

REMOTE RECORDING only

2001 Kirby, Suite 1001, Houston, TX 77019

(713) 520-0201 (24 hours)

Owner: John A Moran

Studio Manager: Houston John Moran, Nashville Tom Semmes
Engineers: John Moran, Tom Semmes, various independents

Dimensions of Studios: 30 foot C50 track
Dimensions of Control Rooms: 550 square foot control and editing room
Tape Recorders: (2) Sony PCM 3324 24 track digital; Otari MTR90 24 track analog; Sony PCM 1610 2 track digital, Sony SAE 1100 digital editor; Sony PCM100 2 track digital; Sony PCM F1 2 track digital; Otari 5050B 2 track analog
Mixing Consoles: Neve 5442, MCI 636, 32 in x 24 out, automated.

Monitor Amplifiers: Phase Linear, Crest
Monitor Speakers: Klein & Hummel, MDM-4, ADL 4311, & Auratones.

Echo, Reverb, and Delay Systems: Sony DRE 2000 digital reverb, MICMIX, Masterroom 300, ADR complete Scamp system.

Other Outboard Equipment: If we don't have it, we can get it.
Rates: Less than you would expect for this kind of equipment
Extras: All our equipment is available for use anywhere at any time at any place. We format any material for compact digital disk and also do sound for video, as well as produce the best sounding records imaginable.

Direction: Clients: Frank Zappa, Neil Young, Chicago Opera, Earl Thomas Conley, Donne Warwick, The Krayolas, Dr. Rockit, Barbara Mandrel, T.G. Sheppard, lots more.

•••• GILLEY'S
 4500 Spencer Hwy., Pasadena, TX 77504
 (713) 941-7193
 Owner: Mickey Gilley, Sherwood Cryer
 Studio Manager: Bert Frlot

•••• HENDERSON RECORDING STUDIO
 3849 S. Cravens Rd., Ft. Worth, TX
 (817) 451-7247

•••• INERGI RECORDING STUDIO
 15825 Memorial Dr., Houston, TX 77079
 (713) 493-1533
 Owner: Vincent Kickenllo
 Studio Manager: Gen. Mgr. Chief Engineer - David Kealey
 Engineers: David Kealey
Dimensions of Studios: 25 x 40 w/18 foot ceiling
Dimensions of Control Rooms: 18 x 19 w/12 foot ceiling
Tape Recorders: MCI JH114, 24 track, (2) MCI JH110 2 tracks ¼", MCI JH110 ½" 2 track, (3) MCI JH110, 2 track.



Mixing Consoles: MCI JH536-C, 36 in x 32 out automated
Monitor Amplifiers: BGW
Monitor Speakers: Audicon, JBL 4313s, Auratone, UREI 813
Echo, Reverb, and Delay Systems: (2) EMT 240s, Lexicon and Eventide delay, Lexicon 224 digital reverb
Other Outboard Equipment: Scamp rack, Aphex model 602, Marshall Time Modulators, dbx & UREI compressor/limiter, ADR Vocal Stressor, parametric equalization, Dolby noise reduction on all equipment, automation
Microphones: Neumann U47s, U87s; KM84s, KM86, AKG 414, 452s, Sennheiser 421D, Beyers, Sony, Crown PZM, Shure SM56, Electro-Voice HE 16, RE-20
Instruments Available: Yamaha grand piano, Fender Rhodes, Clavinet, ARP Strng Ensemble, Music Man guitar amps, Pearl drums
Rates: On request

•••• JANUARY SOUND STUDIOS
 also REMOTE RECORDING
 3341 Towerwood, Suite 206, Dallas, TX 75234
 (214) 243-3735
 Owner: Fairbanks Broadcasting, Inc
 Studio Manager: Les Studdard
Engineers: Linda Adelfoff, Tom Adler, Thom Caccetta, Russell Alvey
Dimensions of Studios: Studio A 30 x 36, Studio B 15 x 15
Dimensions of Control Rooms: Studio A 15 x 20, Studio B



JANUARY SOUND STUDIOS
 Dallas, TX

16 x 24
Tape Recorders: (2) MCI 24 tracks, MCI 16 track, MCI 2 track; Electro-sound mono
Mixing Consoles: MCI 536, 32 in x 24 out, Audionics 501, 26 in x 24 out
Monitor Amplifiers: BGW, McIntosh, Crown, Phase Linear
Monitor Speakers: UREI Time Aligns, JBL, Altec (with Mastering Lab crossovers), Visonik
Echo, Reverb, and Delay Systems: EMT, MICMIX, Lexicon, Harmonizer
Other Outboard Equipment: Dolby and dbx noise reduction, UREI, compressor/limiters, dbx limiters, Gain Brains, Kepex's, Orban De-Esser, Orban parametrics; MCI Videosync
Microphones: Neumann, AKG, Sennheiser, Sony, Shure, Electro-Voice, RCA
Instruments Available: Steinway 9' grand piano, Fender Rhodes, Clavinet, Crummar w/Leslie, Ovation guitar, Gibson 355 stereo guitar
Video Equipment & Services: Sony BVU 800 VCR ¼", MCI JH 45 & 48 interlock system, SMPTE code generator
Rates: Studio A \$120 (including engineer), Studio B \$95 (including engineer)

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•••• JASPER SOUND STUDIO
 3401 Harpers Ferry, Austin, TX 78745
 (512) 282-2734
 Owner: Chuck Sugar
 Studio Manager: Chuck Sugar

•••• KLUDGIT SOUND, INC.
 also REMOTE RECORDING
 Box 171, Cerrillos, NM 87010
 (505) 471-0051
 Owner: Baird Banner
 Studio Manager: Janet Persons
 Engineers: Baird Banner chief engineer, Joseph Schlick
 Dimensions of Studios: 27 x 17 drum booth 10 x 7
 Dimensions of Control Rooms: 18 x 15
 Tape Recorders: Otari MTR 90 24 track, MCI JH110 2 track, Ampex ATR 102 2 track, (2) Aiwa 3800 cassette decks, Otari MX5050 2 track, Pioneer RT701 2 track
 Mixing Consoles: Sound Workshop 4036, 30 in x 24 out, with 32 channel ARMS automation, Soundcraft 24 2, 24 in x 2 out
 Monitor Amplifiers: (2) BGW 500/250, UREI 6500 power amp
 Monitor Speakers: JBL 4430 biradials, UREI 828 Time Aligned, SPICA Auratone & SC 50s, Tannoy
 Echo, Reverb, and Delay Systems: Lexicon 224 digital reverb Echo Plate reverb, Lexicon 102 stereo digital delay, Eventide Clockworks #910 Harmonizer, Roland Space Echo RE201, Mutron Hi Phase, MXR phase, MICMIX
 Other Outboard Equipment: (2) UREI 539 room EQs, UREI 527 1/3 octave EQ, (4) Valley People Kepex IIs, (2) UREI LA4 compressors, dbx 162 stereo compressor/limiter, Dolby A noise reduction, EXR Exciter, UREI 545 parametric EQ, (2) UREI 1176 LN limiters
 Microphones: Shure SM81, SM57, 58, 59s, Neumann U47, U48s, Crown PZMs, AKG 451, E-V RE20s, Beyerdynamic, Beyerdynamic ribbon, Sennheiser 421 & 441
 Instruments Available: Linn Drum LM2 synthesizer, Kawai grand piano, Wurlitzer electric piano, assorted drums and percussion, other instruments available by appointment
 Video Equipment & Services: Engineers have extensive experience in audio recording for video, we will in the near future have sweetening capabilities
 Rates: \$80/hr 24 track, \$60/hr 16 track, \$35/hr 2 track, please call for more information on block discounts & accommodations
 Extras: Kitchen, sauna, guest houses, quiet country atmosphere
 Direction: The only full production 24 track studio currently in New Mexico, we also offer PA, consultation and installation serv-



ices to regional clubs and theatres. Partial credits include: Flora Purim & Airto Moreira, Bow Wow Wow for RCA Records, The Grandmothers, Michael Murphy

•••• LAS VEGAS RECORDING STUDIO
 3977 Vegas Valley Dr., Las Vegas, NV 89121
 (702) 457-4365
 Owner: Hank Castro
 Studio Manager: Hank Castro

•••• LONGBRANCH STUDIOS
 also REMOTE RECORDING
 6314 E. 13th, Tulsa, OK 74112
 (918) 832-7640
 Owner: Bill Belknap, Walt Banfield
 Studio Manager: Bill Belknap
 Engineers: Bill Belknap, Walt Banfield and freelancers. Film sound engineer: Greg Gardner
 Dimensions of Studios: 80 x 50 w/40 foot ceiling. Biggest studio in the Southwest
 Dimensions of Control Rooms: 25 x 30
 Tape Recorders: Ampex MM1200 24 track, Ampex MM1200 16 track, (2) Ampex ATR102 mixdown 1/2 tracks, Ampex AG440A 2 track, Nagra 4s
 Mixing Consoles: Automated Processes Inc., 24 in x 24 out with additional 8 channels for mixing, portable 8 channel w/API parts

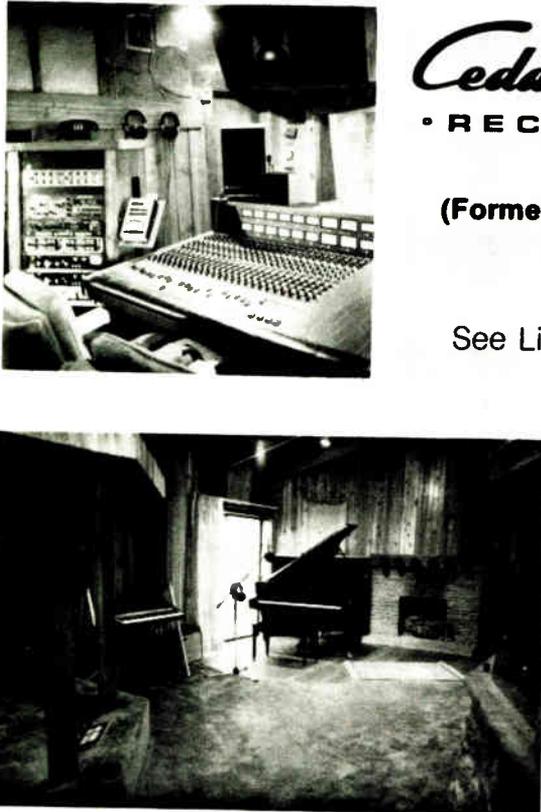
Monitor Amplifiers: McIntosh MC-2300 Crown D-153, Crown 300-A, BGW 100, Phase Linear 930
 Monitor Speakers: Studio Altec Super Reas, Control Room Big Reds, Century 100-A, Auratones
 Echo, Reverb, and Delay Systems: EMT plate, AKG BX 10, MICMIX, Eventide Harmonizer, room delay Cooper Time Cube
 Other Outboard Equipment: Graphic equalizers, sublimator control, UREI LA 3A compressor/limiters, UREI 1176 compressors, API 525 compressor/limiters, instant flangers, notch filter, Kepex's
 Microphones: Neumann, Sennheiser, Shure, Electro-Voice, Crown PZM, RCA, Beyerdynamic, AKG, Sony large selection of each
 Instruments Available: Yamaha 9' grand, Yamaha CP-30 electric piano, Jupiter 4 synthesizer, Camco studio drums, various percussion
 Rates: 24 track \$90/hr, (block time \$80/hr); 16 track \$80/hr (block time \$70/hr), 8 track \$70/hr (block time \$60/hr); 2 track \$50/hr, radio production \$40/hr, freelance engineer rates on request, film sound and mixing rates upon request



LUXURY AUDIO WORKSHOP
 Las Vegas, NV

•••• LUXURY AUDIO WORKSHOP, INC.
 also REMOTE RECORDING
 2570 E. Tropicana Ave., #19, Las Vegas, NV 89121
 (702) 451-6767
 Owner: I. A. W. Inc.
 Studio Manager: Lee Walters
 Engineers: Chief engineer: Al Schmitt, Jr., Michael Martin, Jerry Hall, Jim Root, Lee Walters, Chris Bex, Randy Kluruk, Bill Shostak. Independent engineers, Reggie Dozer, Bob Brown
 Dimensions of Studios: Studio A 1000 sq. ft. Studio B 18 x 19
 Dimensions of Control Rooms: Studio A 20 x 16, Studio B 13 x 13
 Tape Recorders: 3M M79 24 track, MCI JH114 24 track, 3M M79 2 track, MCI JH110 2 track
 Mixing Consoles: Studio A API 36x24, 36 in x 24 cut; Studio B Spectra Sonics 2424, 24 in x 24 out
 Monitor Amplifiers: Yamaha, BGW
 Monitor Speakers: Studio A Lakeside LM 1 Auratones, Studio B, JBL custom, Auratones
 Echo, Reverb, and Delay Systems: Lexicon 224 digital reverb, AKG BX10, Lexicon Prime Time, Lexicon PCM 41 DDL
 Other Outboard Equipment: Kepex II, JFEI 1176LN, UREI LA3A, dbx 160, ADR Vocal Stresser, Eventide Harmonizer, phasers, flangers, ADR parametric EQ, Gain Train, Orban De-esser
 Microphones: Neumann U67 tube, U47 FET, U47, KM84, Sennheiser 441, 421, AKG 414, 451, D12, E-V RE20 RE16, Crown PZM, RCA 77DX, Shure SM81, SM57, SM58, SM56
 Instruments Available: Studio A Yamaha 6' grand, Studio B Kawai 5' grand, Yamaha drums, Yamaha amps, sequential Circuits Prophet 5, Rhodes 88, Hammond B3 organ w/Leslie, ARP Omni, most synthesizers available
 Rates: Studio A \$100/hr Studio B \$60/hr w/ engineer
 Extras: Two lounges one for each studio, refrigerator, TV, and private phone, coffee bar, game room, restaurant next to studio, limousine service to and from airport and hotels available
 Direction: L.A.W. is one of the finest state-of-the-art recording studios in Las Vegas. We have recorded such artists as Gladys Knight & the Pips, Paul Anka, Waylon Jennings, Jim Stafford, Eddie Rabbit, Doc Severinsen, James Best, and many others. Our staff is highly qualified to insure a smooth session. With our two 24 track studios we have time available for you. L.A.W. would like to thank all the artists and producers that have selected our studios

•••• MIDCOM, INC.
 REMOTE RECORDING only
 2231 E. Division St., Arlington, TX 76011
 (817) 461-2211 metro
 Owner: Mike Simpson
 Engineers: Mark Allison, chief engineer, Mike Simpson, Jim Fitzgerald
 Dimensions of Control Rooms: 7 1/2 wide x 23 1/2 long x 7 3/4 tall



Cedar Creek

• RECORDING •

(Formerly Ruff Cedar)

See Listing For Info.

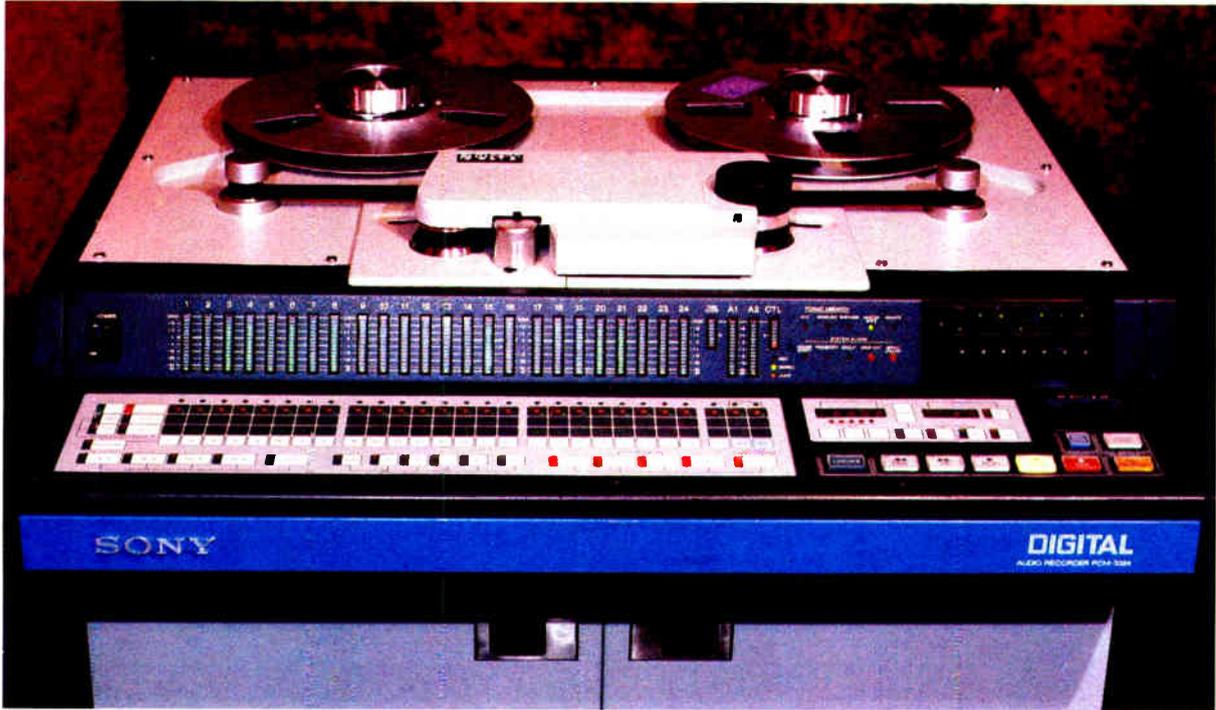
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Chrome Audio & Video Tapes

Circle #030 on Reader Service Card

World Radio History

(interior of truck control room)

Tape Recorders: MCI JH 4 24 24 track Studer A810 2 track with center time code Studer A7.0 cassette 2 track Revox PR99 2 track ITC Series 99 cart machines 2 track

Mixing Consoles: Soundcraft Series 2400 2B in 24 out 2 out (also 56 line in) Soundcraft Series 400 2B in 8 out 2 out

Monitor Amplifiers: BGW 750 and BGW 750

Monitor Speakers: JBL 4410 bi-radial with one sixth octave EQ via White Instruments EQs

Echo, Reverb, and Delay Systems: Lexicon Model 224X digital reverb MICMIX Model XL210 spring reverb Eventide Model H910 Harmonizer

Other Outboard Equipment: dbx Series 900 frame equipped with Model 903 compressor limiters Model 904 noise gates and MICMIX Dynaflex Cards RTS intercom system Clear Com intercom system HTS 4 channel I/B system and full duplex communications system via FM business band and motion picture service radio system

Microphones: AKG C414 EB P48s Shure SM58s & 57s Beyer M201s Sennheiser MD441Us AKG CKB shotguns, Crown PZM GPH 40s and Beyer MCE 511s Other microphones such as U47s U87s and U89s are available upon request

Video Equipment & Services: BTX Shadow Time Code synchronizers interlaced to our JH24 24 or our Studer A810 as slaves Master machine is Sony VO 5600 U-Matic 3/4" video recorder/player Truck is also equipped with a Sony CVM 1900 monitor receiver, (2) 4 B&W monitors, and a 10 input synchronized monitor switcher

Rates: \$1800/day for 24 track recording \$1200/day for video or 2 track mix (Rates are based on 10 hour production day) \$145/mile over 50 miles

Extras: Credits CBS-TV 25th Annual Grammy Awards, ABC-TV World Gymnastics Championships Oak Ridge Boys, Galin Brothers Band, Alabama at the Stars for Children telecast on WFAA-TV, Miss Texas USA Pageant 1982 Siempre en Domingo in Austin for Televisa S.A., Moe Bandy, Joe Stampley, and Larry Galin and the Galin Brothers Band 'Live at Six Flags Over Texas' for KIX-106 radio

•••• DALE MULLINS RECORDING STUDIO

also REMOTE RECORDING

8377 Westview Drive, Houston, TX 77055

(713) 465-6554

Owner: Dale Mullins

Studio Manager: Doug Morrison

•••• MUSICIAN'S RECORDING STUDIO

1423 Richmond Ave., Houston, TX 77006

(713) 521-9887

Owner: Music Resource Services, Inc

Studio Manager: Bill Wade

Engineers: Bill Wade, Bobby Ginsburg, Roger Tausz

Dimensions of Studios: Studio A 36 x 22, Studio B (live)

22 x 19

Dimensions of Control Rooms: 17 x 12

Tape Recorders: Studer A 80 24/16 track, Otari MX-5050 B track, Otari (2) MX-5050B 2 tracks, Technics M 218 & M-14 cassette decks

Mixing Consoles: Quad/Eight Pacifica, 28 in x 24 out

Monitor Amplifiers: SAE 2500 (2), SAE 2400, Kenwood 7400 (phones)

Monitor Speakers: UREI 813s, JBL 4313s, JBL L-100s (foldback), Auratones

Echo, Reverb, and Delay Systems: Lexicon 224 digital reverb with all programs, DeltaLab DL-1 DL-2, MICMIX Super C Master-Room, Orban stereo reverb, live room for foldback or cutting

Other Outboard Equipment: White room EQ, limiters and noise gates by Quad Eight UREI and dbx, Omnipressor, dbx noise reduction

Microphones: AKG 414s & 451s, Beyer M-500s, E.V RE-20s, Crown PZMs, Neumann U-87s, KM-84s, 86, 88, Sennheiser 421s, 441s, Shure SM-57s, 58s, 54s, 81s, Sony 22-Ps, 50-Ps, RCA 77-DX

Instruments Available: Sonor drums, Kawai grand piano, Fender Pre-CBS Super Reverb, Fender 4'10" Bassman, Hammond C 2 w/Leslie Fender Precision Bass, any percussion and synthesizers available by appointment

Rates: 24 16 track \$85/hr 8 2 track rates upon request Available 24 hrs/day 7 days/week

Extras: Two separate and isolated rehearsal halls for recording or stage show rehearsals Also suitable for video and promotional shoots Complete monitor system with four independent mixes in-to four floor and two sidefill monitors, 3K watts of Crown and Crest power Full stage lighting on 6 channel controller with three Berkeley spots

Direction: Musician's Recording Studio continues as one of the Southwest's finest music recording facilities with work ranging from the rock 'n' roll of Jim Dandy to the Jamaican reggae of the International Yard Band With an eye on the future, MRS plans to move into video production by the year's end

•••• OMEGA AUDIO & PRODUCTIONS, INC.

also REMOTE RECORDING

8036 Aviation Place, Box 71, Dallas, TX 75235

(214) 350-9066

Owner: Paul A Christensen, Russell L Hearn

Studio Manager: Paul A Christensen

Engineers: David Buell, Marvin Hlavinka, and some of Dallas'



The Southwest 24 Track



OMEGA AUDIO & PRODUCTIONS
Dallas, TX

finest freelance engineers: Buford Jones, Bob Singleton, Phil York, Ron Lagerloff

Dimensions of Studios: Studio A 35 x 40 Studio B 12 x 15
Remote Recording Truck: B x 15

Dimensions of Control Rooms: 22 x 20

Tape Recorders: Otari MTR90 24 track (2) Otari MTH10 2/4 track Otari MX5050 B 2 track, Studer/Revox A 77 2 track, Furia cassette, Autogram stereo cart

Mixing Consoles: Amek M2500, 36 in x 24 out, Custom 30 in x 24 out

Monitor Amplifiers: Crown PSA 2 (4) Crown D 150A Crown D 40

Monitor Speakers: JBL 4435 Bi radial, JBL 4313 JBL 4311 and Auratone

Echo, Reverb, and Delay Systems: LP140 reverb plate Echo plate II Master Room reverb ADA stereo tapped delay DeltaLab DL2 digital delay

Other Outboard Equipment: Eventide H 949 Harmonizer with Digilitch Card, Scamp rack w 17 modules Gotham TTM NR rack w/dbx K9-22 cards, BTX 4600 4 machine controller w Shadow interlock BTX 5100 time code generator UREI 565T Little Dipper UREI digital metronome HTS stereo phono preamp, Denon DP1100 turntable

Microphones: Varied selection of over 70 mikes including Neumann U87, U47, AKG 414 451, CKB Shure SM81 57 53 58 Beyer M201, Sennheiser 441, E.V RE20 Sony 22P ECM50 ECM21, AKG D12E, Crown PZM

Instruments Available: Baldwin 7' grand, various synthesizers and guitars

Video Equipment & Services: Co located and interlocked with Video Post & Transfer, state-of-the-art 1" CMX video editing and film transfer facility, Omega offers 32-track interlock to picture for computerized audio editing and mixing to picture

Rates: Studio audio only 24 track \$100/hr, audio video interlock \$125/hr Remote recording \$1,800/day, plus travel expenses

Extras: Through an association with Clearwater Teleproductions of Dallas, a network 5 color camera 1" video mobile unit Omega Audio handles video music projects from concept to completion

Direction: Partial credits Johnny Cash, Bob Hope, Helen Reddy, Anne Murray, Al Jarreau, Spyro Gyra, Willie Nelson, the Oak Ridge Boys, Randy Meisner Quarterflash, Hall & Oates, NBC TV (Silvio Calanchini, producer), CBS-TV (Joseph Cates, producer), MTV (Gowers, Fields & Flattery, producer), PBS-TV (WNET)

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•••• PANTEGO SOUND STUDIO
2210 Rapier Blvd., Arlington, TX 76013
(817) 461-8481
Owner: Charles Stewart
Studio Manager: Jerry Hudson

•••• PANTHEON RECORDING STUDIOS
6325 N. Invergordon Road, Scottsdale, AZ 85253
(602) 948-5883
Owner: Dennis Alexander
Studio Manager: Santo "Tito" Bombaci
Engineers: Steve Escalier, Dennis Alexander, Ralph Osborn
Dimensions of Studios: Studio A 40 x 22, Studio B 3 separate rooms totaling 22 x 17
Dimensions of Control Rooms: Studio A 18 x 18, Studio B 15 x 13, with video monitors
Tape Recorders: Lyrec (Neve) 24 track, Ampex ATR 100 2 track, Technics 2 track, MCJ 16/8 track, Scully, Sony
Mixing Consoles: Studio A Amek transformerless 8064 28 in x 24 out; Studio B Spectrasoons 22 in x 16 out
Monitor Amplifiers: BGW 750 C, Crown DC300s
Monitor Speakers: A Altec 604E w/Mastering Lab Crossover, B Altec 604E bi-amp w/new advanced technology cone #524, Auratones, Klipsch, 4310s, 4330s
Echo, Reverb, and Delay Systems: Quad Eight digital reverb, AKG BX-10, Echoplate, stalls and hallways for echoes
Other Outboard Equipment: 24 track dbx and Doiby, UREI 1176 limiters, dbx 160 limiter, noise gates, 8 channel Omni-Craft GT-4s, Eventide Flanger, Eventide Harmonizers, Orban De-Esser, (2) Inovonics 201 peak limiters, CPR 16 digital delay and effects micro-processor, MXR Pitch Transposer, Lexicon
Microphones: Neumann U87s, AKGs; E-Vs, Shures, Sony's, Sennheiser 451s
Instruments Available: Yamaha 6' grand piano, 7' 1936 B Steinway grand piano, Yamaha CS-80 synthesizer, new 5 piece Gretsch drum set, Synergy, assorted guitars & basses, RMI keyboard computer, ARP Axxe, assorted percussion, other instruments on request
Rates: Upon request

•••• PECAN STREET STUDIOS
1500 Summit St., Austin, TX 78741
(512) 443-6155
Owner: Stephen Shields
Studio Manager: Greg Klinginsmith
Direction: Opening (new facilities) fall 1983 — fully automated 32 track digital and analog 24 track; digital and analog 2 track mastering. Production credits: Christopher Cross, Carol King, Joe Ely, Jerry Jeff Walter, etc

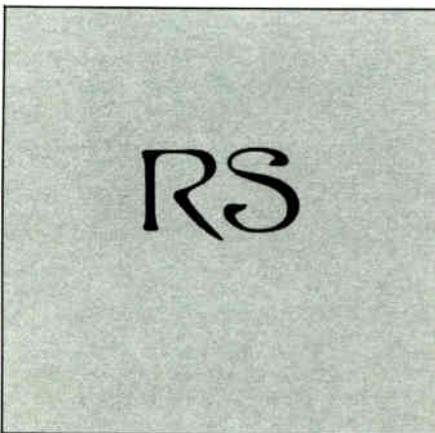
•••• PLATINUM CITY
2107 N. Haskell, Dallas, TX 76013
(214) 826-0762
Owner: Arns Wheaton
Studio Manager: Arns Wheaton

•••• POWERHOUSE RECORDING
3111 S. Valley View Blvd., Suite K-101,
Las Vegas, NV 89102
(702) 871-6200
Owner: Doug Weiss, Terry Kellman & Scott Langsner
Studio Manager: Scott Spain

•••• PRECISION AUDIO, INC.
11171 Harry Hines, Suite 119, Dallas, TX 75229
(214) 243-2997
Owner: Precision Audio, Inc
Studio Manager: Rick Sheppard
Engineers: Rick Sheppard, Stacy Brownrigg
Dimensions of Studios: 25 x 25 x 11 ceiling
Dimensions of Control Rooms: A 15 x 15 x 11 ceiling, B 13 x 13 x 8 ceiling
Tape Recorders: MCJ JH114 24 track, (2) Scully 280 2 track, (3) Crown 722 2 track, TEAC 38 8 track, (2) TEAC 3340 4 track
Mixing Consoles: A Custom built, 28 in x 28 out, w/8 mixing busses; Tascam Model 10, modified B Custom built 12 in x 12 out, w/8 mixing busses, Tascam Model 10, modified
Monitor Amplifiers: Crown, Southwest Tech, ILP
Monitor Speakers: UREI 811s with matching custom built UREI sub-woofer system, Speakerlab Super 7s
Echo, Reverb, and Delay Systems: EMT stereo plate model 140, MICMIX Model III, Lexicon Prime Time digital delay, Effercon ADM 245 digital delay, Tapco 4400, tape delay echo
Other Outboard Equipment: UREI 539 room EQs, (3) MXR 2/3 octave dual EQ, 48 channels STC noise reduction, 8 channels dbx noise reduction, UREI LA3A compressor/limiters, (2) MXR dual limiters #136, (4) PAIA custom limiters
Microphones: (2) Neumann U87, KM88, (2) Sennheiser 441, (5) 421U, (3) AKG C451E, (4) Sony ECM22P; (2) AKG D224E, (4) D1000E, (3) Shure SM53; E-V 635A
Instruments Available: Yamaha C3 conservatory grand piano, 11 piece Ludwig trap set, Yamaha 115B bass amp, (2) Checkmate guitar amps, Vox continental organ, Hammond M3, Gibson Grabber bass, Gibson ES 340TD electric, acoustic guitars by Yamaha, Epiphone & Dobro, Kramer electric, Soundchaser/Apple II plus digital synthesizer, large custom built two keyboard studio synthesizer, ARP string ensemble
Rates: 24 track \$90/hr, 16 track \$75/hr, 8 track \$50/hr Call for any current specials



•••• RAINBOW SOUND INC
1316 Inwood Rd., Dallas, TX 75247
(214) 638-7712
Owner: Rainbow Sound, Inc
Studio Manager: David M Boothe



RAMPART STUDIOS
Houston, TX

•••• RAMPART STUDIOS
also REMOTE RECORDING
6105 Jessamine, Houston, TX 77081
(713) 772-6939
Owner: Steve Ames
Engineers: Steve Ames, various independents
Dimensions of Studios: 40 x 24 (drum room, vocal booth, iso room)
Dimensions of Control Rooms: 12 x 18
Tape Recorders: Soundcraft 24 track, 3M 16 track, 3M 2 track, Ampex 2 track, Sony 1/4 track, Technics cassette deck
Mixing Consoles: Soundcraft Model 1624 (16x24x2) 56 channel re-mix
Monitor Amplifiers: Crown DC300A, Crown D150, Crown D60
Monitor Speakers: JBL 4430s, Auratones
Echo, Reverb, and Delay Systems: EMT 140 stereo plate, Lexicon #91 DDL, Lexicon PCM41, Eventide DDL, VSO tape delay
Other Outboard Equipment: Aphex Aural Exciter, Eventide Harmonizer, Aphex CX-1 CMP/EXP, UREI 1176 comp/limiters, UREI 1178 comp/limiters, Orban parametric EQ, Lang (tube) EQ, dbx & Quad-Eight noise gates, MXR flanger, Crown SL2 pre-amp, Denon TT, Gold Line RTA
Microphones: Neumann U87s, KM84s; AKG 414s, 451s; Sennheiser 421s, 441s; Beyer M160s, 201s, E-V RE20s, Sony 22P, RCA 77s, etc
Instruments Available: Kawai grand piano, Fender Rhodes piano, Sequential Circuits Prophet & Mini-Moog synthesizers, Drumulator and Roland drum computers, Rogers drum set, LP congas, complete percussion
Video Equipment & Services: Scoring, sweetening, etc
Rates: Hr/rates, Blk/rates Available upon request
Extras: Coffee bar, lounge area, etc
Direction: Rampart is a creative environment for both artists and producers, with an experienced professional staff. Specialists in record, jungle, and demo projects. Clients include ZZ Top, The Judy's, Z-Rocks, Columbia Records, Atlantic Records, Exxon, Foley's, and many more

•••• REAL TO REEL STUDIOS INC.
2545 N. Fitzhugh, Dallas, TX 75204
(214) 827-7170
Owner: Corporate
Studio Manager: Ron Morgan

•••• REELSOUND RECORDING CO.
REMOTE RECORDING only
P.O. Box 280, Manchaca, TX 78652
(512) 472-3325 or 282-0713
Owner: Malcolm H Harper, Jr
Studio Manager: Malcolm Harper, Jr

•••• RIVENDELL RECORDERS
2223 Strawberry Village, Pasadena, TX 77502
(713) 472-5082
Owner: Rivendell Recorders, Inc
Studio Manager: G Brian Tankersley
Engineers: Paul Mills, G Brian Tankersley
Dimensions of Studios: 28 x 42 x 14
Dimensions of Control Rooms: 18 x 20 x 11
Tape Recorders: Studer A80 Mk III 24 track, Ampex ATR102 1/4" and 1/2", Otari MTR10 2 track, Technics RS1520 2 track, Technics RS1506 2 track
Mixing Consoles: Trident Series 80, 32 in x 24 out
Monitor Amplifiers: H&H V800, AB, Crown, HK
Monitor Speakers: UREI 813, Yamaha NS10, Auratone
Echo, Reverb, and Delay Systems: AMS RMX 16, EMT 140ST (tube), (2) DeltaLab DL-1
Other Outboard Equipment: Eventide 949 Harmonizer, Lexicon Prime Time, Marshall Modulator, EXR Exciter, (2) LA2, (2) LASA, (2) 1176, (2) dbx 165, (2) ADR Complex limiter, ADR Vocal Stressor; (4) Kepex II; various graphics and parametrics
Microphones: Telefunken U47; Neumann U67, U87, KM84, (2) AKG C414, Sennheiser 441, 421, Shure SM81, E-V RE20, various Shure
Instruments Available: Kawai grand, Yamaha drums, Hammond B3
Rates: Call for information
Extras: Jacket art direction, manufacturing, arranging, producing, contracting



RIVENDELL RECORDERS
Pasadena, TX

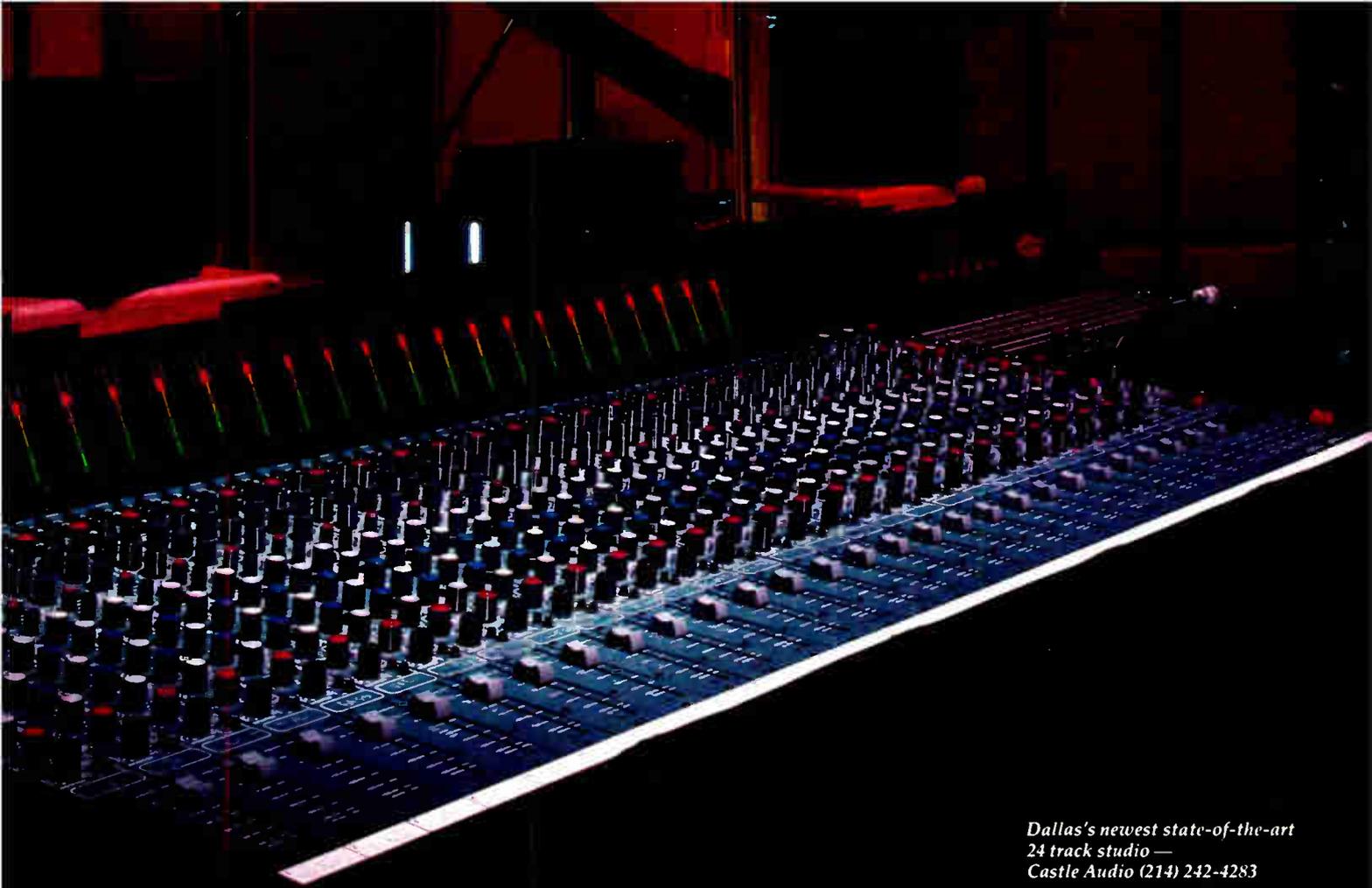
•••• ROBIN HOOD STUDIOS
2200 Sunnybrook, Tyler, TX 75701
(214) 592-7677
Owner: Robin Hood Brans
Studio Manager: Robin Hood Brans

•••• R.M.S. STUDIO
4620 W. Blue Diamond, Las Vegas, NV 89118
(702) 361-1559
Owner: Lou Carto, Joe Carto
Studio Manager: Lou Carto



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•••• SIERRA RECORDING
669 Seminary South, Fort Worth, TX 76113
(817) 921-3881



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Board, Gold Pin Edge Connectors, and her amplifiers are 5532-4s and TLO 74s and she has a Perfectly Rigid Carbon Steel Chassis. Sound appealing? To find out more about ANGELA or to arrange a personal demonstration, contact us at (213) 508-9788 for the name of your nearest AMEK dealer.

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(213) 508-9788

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- Switchable PPM VU light meters
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- In place solo
- Fader reverse
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- A one year parts and 6 month labor warranty

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- Full VCA Automation
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- Additional VU and Phase Meters
- Available in one piece "in line" or two piece "L" shaped chassis
- Separate 24 Track Monitor Mixer mounted in producer's desk

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Circle #033 on Reader Service Card

World Radio History



The Southwest 24 Track

Owner: Maximo Corporation
Studio Manager: Randy Adams
Engineers: Tony Rodriguez, Randy Adams, Tim Hood, Andres Gamon
Dimensions of Studios: 42 x 30 main room, 10 x 14 iso booth
Dimensions of Control Rooms: 28 x 20 LEDE control room
Tape Recorders: Stephens B21B 24 track, Ampex 102 2 track, MCI JH110 2 track, Technics M85 cassette, Nakamichi 550 cassette, Tascam 3340 4 track
Mixing Consoles: Neotek Series III, 28 in x 24 out
Monitor Amplifiers: UREI Crown
Monitor Speakers: UREI 8, 4 JBL 4311, Auratone, Yamaha
Echo, Reverb, and Delay Systems: MasterRoom XL515, Lexicon Super Prime Time Harmonizer H910
Other Outboard Equipment: UREI 1176 limiters, Eventide Omnipressor, Korgex Stamp Rack, Multimax compressors
Microphones: Neumann U87, Sennheiser 421, Crown PZM, AKG 414, 451, 452, D12, Wright, Beyer 260, 500
Instruments Available: 74" Kawai grand piano, Fender Rhodes, Sequential Circuits Prophet 5, Eika, ARP Omni 2, Mini Korg synthesizers, Slingerland drums, C&G bass, Guild and Martin guitars
Rates: Available upon request

•••• **SOUND ARTS RECORDING STUDIO**
also REMOTE RECORDING
 2036 Paskett, Suite A, Houston, TX 77092
 (713) 688-8067
Owner: Jeff Wells
Studio Manager: Barbara Pennington
Direction: Sound Arts offers high quality recording at reasonable rates equipped with a 48 channel console and a 24 track Ampex machine. Using its state-of-the-art 24 track studio as a vehicle for achieving national quality master tapes. The studio also has a wet bar, showering facilities, and an outdoor courtyard patio for a relaxed atmosphere. Sound Arts has plenty of outboard equipment including several digital delay lines, noise gates, compressors, limiters, flangers and (2) AKG reverbs using an Altec 604 system for monitoring. Other services include publishing, block rates, and we own our own record label, Earth Records. Call us for more information.

•••• **STUDIO SOUTH**
also REMOTE RECORDING
 308 W. 6th St., Austin, TX 78701
 (512) 472-4807
Owner: Windsong Corp
Studio Manager: James Tuttle

•••• **SUMET-BERNET SOUND STUDIOS INC.**
 7027 Twin Hills Ave., Dallas, TX 75231
 (214) 691-0001
Owner: Ed N. Bernet
Studio Manager: Ed Bernet

•••• **SUNRISE SOUND STUDIOS, INC.**
also REMOTE RECORDING
 3330 Walnut Bend Lane, Houston, TX 77042
 (713) 977-9165
Owner: Chip Stanberry, Les Williams, Mark Richardson
Studio Manager: Mark Richardson
Engineers: Les Williams, Mark Richardson
Dimensions of Studios: 29 x 32 x 12
Dimensions of Control Rooms: 17 x 22 x 10
Tape Recorders: Otari MTR 90 24 track, Otari MTR 10, 2 track, Studer Revox A 700 2 track
Mixing Consoles: Tangent 3216A 28 in x 24 out
Monitor Amplifiers: Hafler 500
Monitor Speakers: JBL 4313, Auratone, Toby Advent JBL 4440
Echo, Reverb, and Delay Systems: Lexicon 224 digital reverb, Echoplex II plate reverb, DeltaLab DL-2 Acoustic computer/digital delay, Roland 555 Chorus Echo, MXR digital time delay
Other Outboard Equipment: EXR Exciter, Aphex Aural Exciter dbx 165 compressor limiters, full complement of noise gates and equalizers, Roland Dimension D, Orban De Esser, cassette and 1/4 track reel copy machines
Microphones: Neumann U87, AKG C414EB, C451, C452, Sennheiser 421, 441, EV PL 20, PL 77, PL 91, Crown PZM, Shure SM-57, SM 58, Neumann KM 84, U47

Instruments Available: Yamaha C7B, 74" grand piano, Oberheim OB8B voice synthesizer, Prophet 5 synthesizer, ARP String Ensemble, Oberheim DMX drum machine, TAMA drum kit, Rhodes stereo electric piano, Roland guitar synthesizer, amplifiers by MESA Boogie, Fender and Music Man, Hammond B3 organ & Leslie speaker, EMU Systems Emulator
Video Equipment & Services: SMPTE time code generation available at extra charge
Rates: Upon request
Extras: Wet bar and lounge area, shower, video & film services available, live studio recording area for strings and brass, complete production, arranging and copyrights services, in-house publishing company
Direction: We have extensive experience in both album productions and commercially aired jingles. We also are currently involved with major Los Angeles based producers on a recording and publishing basis. Our goal is to encourage and attract national caliber artists and producers to the Houston area. We feel our facilities offer the opportunity to record any type of material on a caliber equal to the current major recording centers. Brook Benton, Arthur Prysock, Johnny Nash, Ed Townsend and Clarence M. Donald are among last year's better known clients.

•••• **TELE IMAGE, INC.**
 2225 Bellline, Ste. 321, Carrollton, TX 75006
 (214) 245-3561
Owner: Bob Schutt, Pres., Chris Nicolau, V.P.
Studio Manager: Diane Bernard

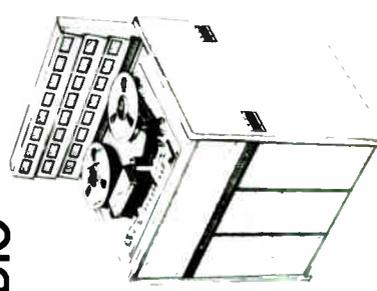
Texas Recording & Disc Center

TEXAS RECORDING CENTER
 Ft. Worth, TX

•••• **TEXAS RECORDING CENTER**
also REMOTE RECORDING
 829 N. Sylvania St., Ft. Worth, TX 76111
 (817) 838-0036
Owner: Charlie Taylor
Studio Manager: Wanda Findley
Engineers: Ron Dulio, chief eng., Charlie Taylor, audio supervisor, Carrol Murphy, H. Gregory, and freelance engineers on call
Dimensions of Studios: A 24 x 34 x 12 w/iso for drums room, piano and string room
Dimensions of Control Rooms: 18 x 18 x 12
Tape Recorders: Ampex MM1200 24 track w/ Audio Kinetics Autolocator, Ampex 440 4/2/mono, Scully 280 2 track, Nakamichi 700 Aiwa cassette w/remote
Mixing Consoles: by Don McLaughlin, 24 in x 16 out
Monitor Amplifiers: Crown DC300, McIntosh 250, McIntosh (tube) 275, SAE 400
Monitor Speakers: (4) Altec 9845A, (4) Altec 604E, Big Reds, (2) JBL 4311, (4) Auratone cube
Echo, Reverb, and Delay Systems: MICMIX MasterRoom plate/Concord Hall, from west Germany RCL spring reverb w/damper, Fairchild spring reverb, Cooper Time Cube and live chamber
Other Outboard Equipment: (2) Audio Arts parametric EQ, (7) SAE stereo octave EQ, (2) UREI 527 1/2 octave graphic EQ, (2) Lange program EQ, UREI 1176LN limiter/comp., vocal stressers, Orban 3 ch. De Esser, Teletronix LA2A leveling amps, Langevin filter, UREI Little Dipper filter set, Allison Gain Brains, Korgex Eventide 949 Harmonizer flanger, Countryman, phaser, Lexicon #93 digital delay, UREI digital metronome
Microphones: Neumann U47, U67, U87, KM84, KM86, Telefunken U47, Sony ECM333P, C500, Sennheiser 421, 441, RCA 77DX, 77D, Altec 663, Shure 548, SM7, SM57, SM58, AKG D200, D202E, D1000E, 224, 414Eb, 451, 452, Beyer 160, 260, 500, EV RE16 15 RE20, Crown PZM 30, American, Turner, Best and 85 other mikes
Instruments Available: Steinway 7' fast action grand, Baldwin 9' grand 1, Bushle upright tack piano, Rhodes 88 piano, Hammond B3 w/ Leslie, Musser Century vibes, Oberheim synthesizer, full set of Sonor drums, percussion, Syndrums, lots of guitars, dobros, basses and vintage amps

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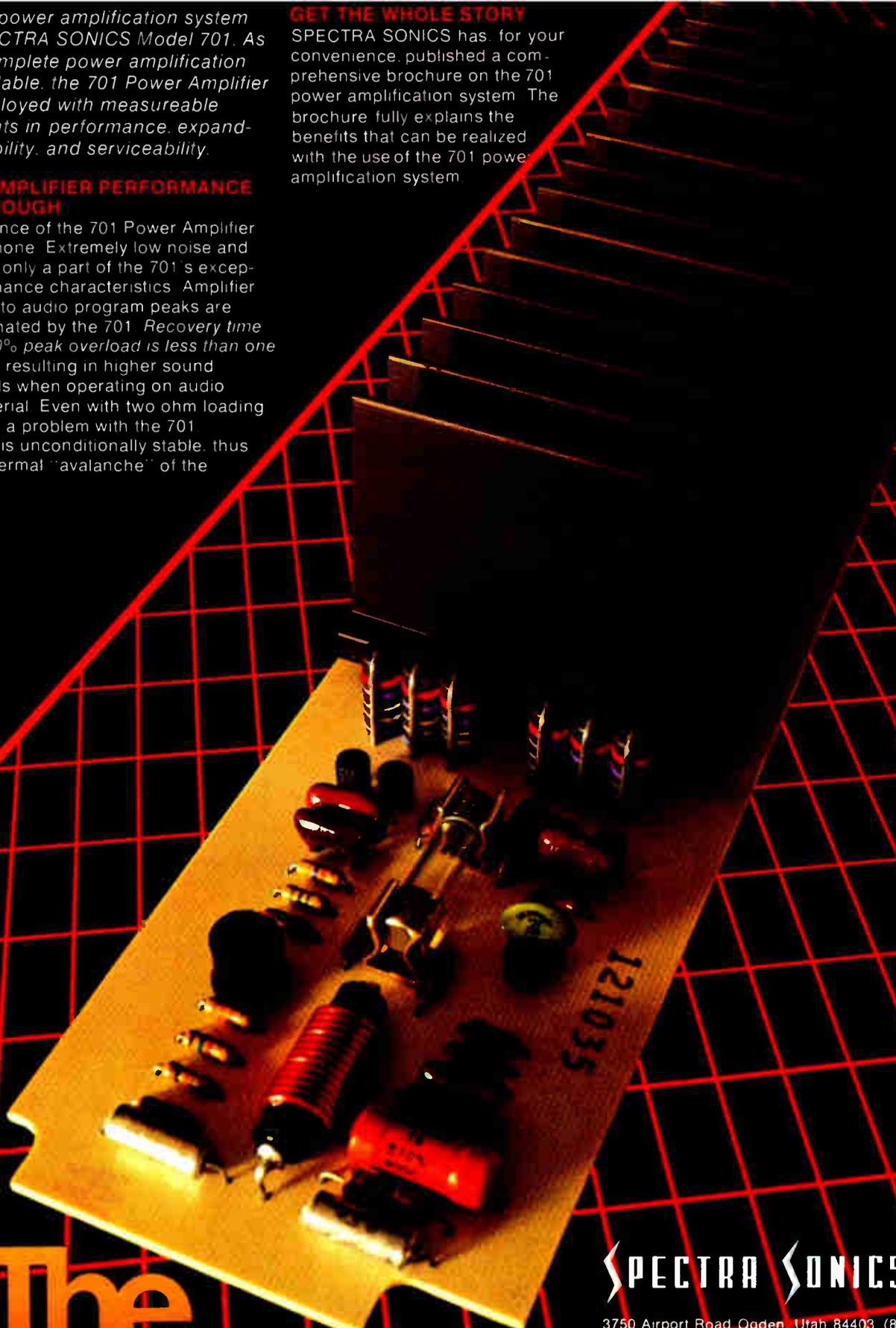
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Circle #035 on Reader Service Card

World Radio History

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The Southwest 24 Track

Direction: State-of-the-arts recording, disc and copy service, artist management and music publishing. You are welcome — all under one roof with The Texas Stars Hall of Fame.

•••• THE THIRD COAST SOUND, INC.
501 NORTH IH-35, Austin, TX 78702
(512) 478-0019

Owner: Michael Block

Studio Manager: Bruce E. Truitt

Engineers: Vince McGarry, Patterson Barrett, Larry Lawrence

Dimensions of Studios: 18 x 21 x 14, 16 x 8 & 130,000 cubic foot live soundstage for cutting and chamber use.

Dimensions of Control Rooms: 18 x 16 x 23

Tape Recorders: MCI JH2424 track & MCI JH114 24/16 track with both MCI time code lock and Q Lock interface for audio/video sync (2) MCI 110B 2 track, Ampex 440C 4 track, Ampex 350 2 track, Studer A67 2 track, JVC, RCA & Sony 1/4 and 1/2" VTRs in sync.

Mixing Consoles: MCI 532B with Allison automation

Monitor Amplifiers: 2300 MAC (2), 750 BGW, 240 MAC, 225 MAC, DC300 Crown, 5150 MAC, Quad Eight, NAD

Monitor Speakers: UREI 813, JBL 4313, E-V Interface 1 Big Red, Auratone.

Echo, Reverb, and Delay Systems: Lexicon 224X, Lexicon Prime Time, DeltaLab DL2, Eventide Harmonizer, 130,000 cubic foot live chamber w/sends to Big Reds & 360 degree curtains available.

Other Outboard Equipment: UREI LA3s, LA4s, and 1176s, Little Dippers, 527As, Scamp gates, parametrics, and compressors Allison rack, Lang & Pultec EQs, Eventide Omnipressor 2 track Dolby A, 4 machine sync for slap

Microphones: AKG, Neumann, Sony, Sennheiser, Shure, Audio Technica, Capps, Beyer, RCA, Countryman, E-V, Schoeps, Crown PZM.

Instruments Available: Yamaha 6' grand, 1863 Bosendorfer 6' grand, misc guitars, basses, amps, drums and ethnic instruments Jupiter 4 & 8 synths. Virtually anything on request.

Video Equipment and Services: RCA 1" VTRs (5) under CMX 340X control, Grass Valley 3000 and Ampex A D O.

Rates: From DC to light we're easy. Contact Third Coast Systems 512-478-0019 or 512-476-INFO.

•••• UNDERGROUND STUDIOS
4420 E. Thomas Rd., Phoenix, AZ 85018
(602) 840-2007

Owner: Charlie Eyanson

•••• UNITED AUDIO RECORDING
also REMOTE RECORDING
8535 Fairhaven, San Antonio, TX 78229
(512) 690-8888

Owner: Robert Bruce

Studio Manager: John Whipple

Engineers: Manus Perron, BS EE, MS EE, Robert Bruce, ASCAP, SBE, John Whipple, Terry Osborne, Video: Ken Ashe, Mike Bowie

Dimensions of Studios: A 35 x 34 x 20 (height), B 20 x 15

Dimensions of Control Rooms: A 23 x 25, B 20 x 15. New mixing room designed by Lakeside Associates.

Tape Recorders: 3M M79 24 track, Ampex ATR100 4 track, Ampex ATR100 2 track, 1/2" mastering; Ampex ATR100 2 track, Scully (6 ea.) 280B 2 track, Scully 280B 4 track

Mixing Consoles: A. Spectrasonics with Valley People automation, model 1024-24, 24 in x 24 out, B. Interface Electronics 100, 16 in x 4 out

Monitor Amplifiers: Crown, Spectrasonics, BGW

Monitor Speakers: UREI 813B Time Aligned, Auratone, E-V Sentry 100, Yamaha NS10M

Echo, Reverb, and Delay Systems: Eventide Harmonizer, Lexicon 224 digital, Ursa Major Space Station, Lexicon Super Prime Time, AKG BX10, MasterRoom MR-III, EMT 140ST

Other Outboard Equipment: UREI 1178 limiters, LA4 compressors, Universal Audio LA2 compressors, Allison Gain Brains & Kepex, dbx 165 UREI graphics 1/3 octave, Orban parametric

Orban De-Esser, UREI notch filter set

Microphones: Neumann UB7, U86, U47, KM84, KM88, KM86, AKG C414, E-V RE20 HE16, HE15, Shure SM81, SM77/57, E-V CS15, Sennheiser 441 421, Beyer, Crown PZM, E-V RE55

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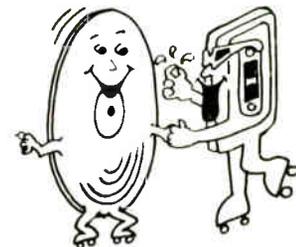
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TIMOTHY LEARY

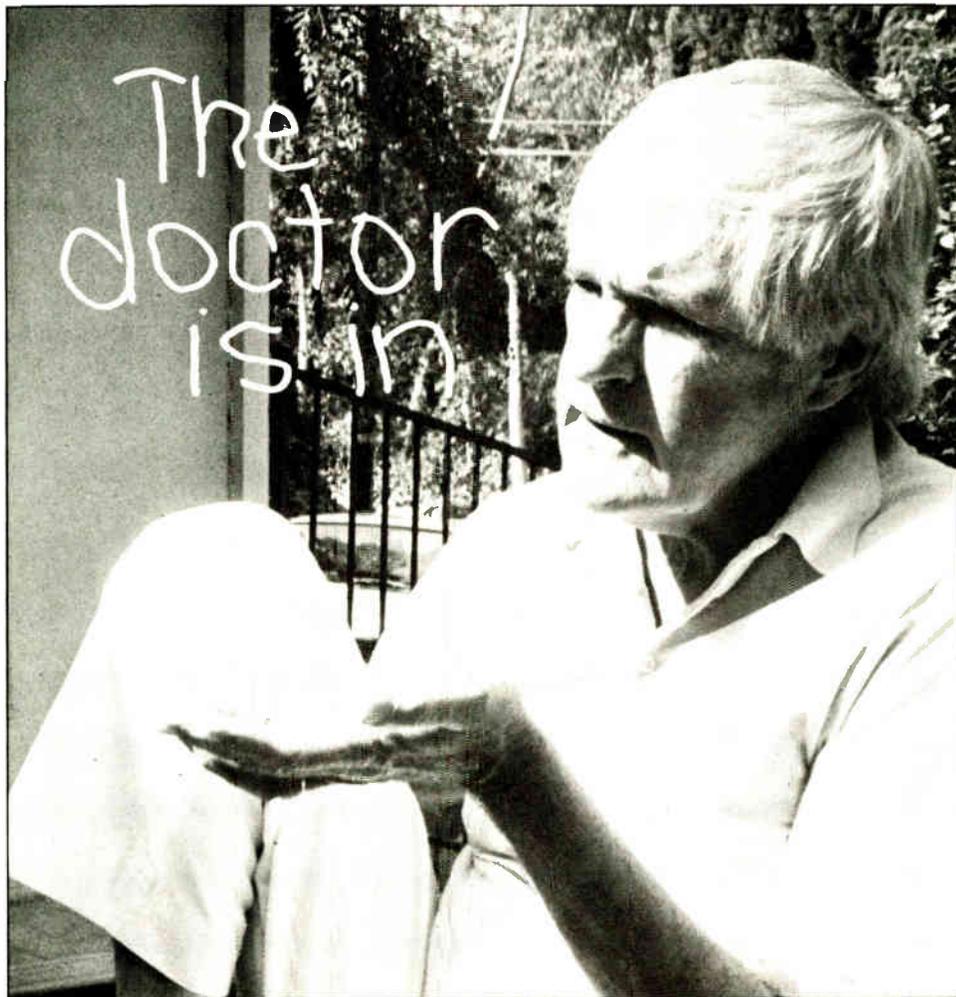
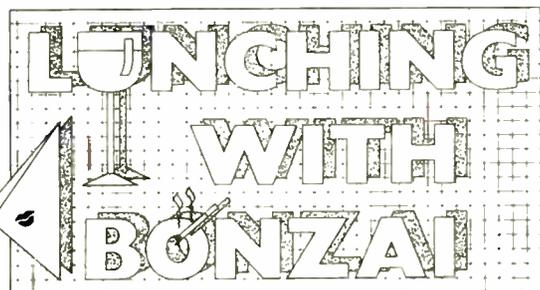


PHOTO MR. BONZAI

by Mr. Bonzai

While most of us are satisfied with a fast-food menu of life's cuisine, Timothy Leary has chosen a banquet at a madhouse. He has gone from an appetizer of academia as a Harvard professor, to a goulash of high priest drug guru, jester of the court, social and political exile, to dessert in jail, and is now sipping some brandy as an author and film personality. And the meal is just beginning.

The film, "Return Engagement," directed by Alan Rudolph and to be released this summer, is a playful documentary focusing on the recent debate tours of Leary and Gordon Liddy. It observes the yins and yangs of outrageous fortune.



Leary's insightful autobiography, *Flashbacks*, has just been published. Recently, he and Richard Alpert—a.k.a. Baba Ram Dass—were invited to speak at Harvard by the professor who fired them.

To have survived such a dynamic range of ironies, glory, and abuse is the indication of a great spirit.

My lunching with Timothy Leary was a shockingly normal experience – a cup of coffee and a chat on the patio of a modest home in the Hollywood hills, a glass of beaujolais, a baseball game with his nine year old son, Zak. But the main course of our conversation took us through some very novel ways of looking at paranoia, humor, drugs, music, life extension and . . .

Bonzai: Irreverence has always appealed to me – my heroes are people like Henry Miller . . .

Leary: Oh, god, isn't he the most underestimated figure? I believe that irreverent humor is a central strand of civilization. It always appears in the barrios, and the ghettos, and the underworld – or it's cleaned up and sanitized, as in the case of the court jester who is able to say things that nobody else could. I feel that American literature and the American philosophy is centered on Mark Twain – Samuel Clemens is so irreverent. I consider Huckleberry Finn and Tom Sawyer to be my cultural heroes.

Nose thumbing – they broke every rule in the book, even the worst rule of all: freeing a slave. In later years, Twain became increasingly counterculture, and I see him as the father of punk and the father of black humor. His later stuff wasn't as funny, unfortunately, and a lot of it was censored by his family. From Samuel Clemens you go to Henry Miller and you simply can't overestimate his impact on our culture. He was the first person to give that perspective of looking at the Cosmodemonic Telegraph Company – and the way he dealt with the system, the establishment; and, of course, his attitudes towards sex are so refreshingly honest and funny. He's the big one in our century, as Mark Twain was in the preceding. Great prophets.

Bonzai: You may be put into a similar historical perspective – why do people think you're a crackpot?

Leary: Well, number one, because a lot of me is. [Laughs] When they say I'm out to lunch, I'm willing to agree that a lot of the time I'm out to lunch.

Bonzai: You've had an affect on people all over the world – even on people who have never heard about you. What do you think it would have been like if you hadn't come along?

Leary: I believe that the way evolution works – at the right time and place, the highly charged pressure of the situation creates a spokesperson. It's one fish that's pushed out of the water and gets onto the shoreline and smiles and says, "It's nice up here." So, someone has to play those roles.

Bonzai: Does that position get lonely sometimes?

Leary: Is it lonely at the top? [Laughs] I can't say that it's been lonely. I have a tremendous self-confidence in the navigational direction, and I get an enormous amount of feedback. I'm not out there just flying around blindly, six miles high, in a fog. There's an enormous amount of corrective radar beaming in that I can pick up all the time. I've made all the right enemies,

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for example, and for exactly the right reasons. Well, that's comforting. Half the navigational wisdom is to make sure that no system will hire you, no institution will give you a tenured job. That's half the battle; the other half is, of course, to get the navigational feedback. The people whom I really respect, including the valet parker at Ma Maison, but also including Henry Miller – by the way, he sent me many messages of understanding and fraternity. I met him for the first time at The Pear Garden. We were sitting back to back in booths and someone came 'round and asked my permission to meet me—if you can believe that—so, I leaped to my feet and in a millisecond was at his side. Throughout my career I have been in very close contact with people like Arthur Koestler—one of the great underestimated people of his time—and Aldous Huxley, Alan Watts, Gerald Heard, Tom Robbins . . .

Bonzai: How do you deal with the paranoia that must come as a result of your lifestyle?

Leary: Number one, I have nothing to hide, so I'm delighted if they want to tap my phone, or if they want to film, big brother style, what goes on in my house or my bedroom. The irony of secrecy – that's what caused Watergate. Nixon wanted to stop the leaks because people were actually learning what he was doing. He set up the plumbers, a staff that had to be familiar with what he was doing. How sick can you get? Then the plumbers began bugging the Democratic offices, in order to find out what they knew about what *they* were doing. The paranoia of secrecy. If you're



PHOTO: MR. BONZAI

Leary with son Zak

right out front and have nothing to hide, it's a tremendous advantage.

Bonzai: What is the quality of the human race which brings the most optimism?

Leary: That we are equipped with this extraordinary brain – roughly 40 billion neurons, each equivalent to a microcomputer, that we are just now learning how to understand and to use – the ability to use the brain to get smarter, and to reprogram itself – and to keep changing. The great, great asset the human race has is its juvenile quality.

Bonzai: What role has music played in your life?

Leary: Well, it's well known that the music you listen to when you're an adolescent, when you're losing your virginity, always stays with you as the

automatic access code to that big circuit of your brain. That's why grey-haired people go to Las Vegas and cream over Frank Sinatra, because that was the message. I have followed a life pattern of rejuvenization, so that I have gone through adolescence many times, and I own a tremendous debt of gratitude to musicians at each stage of the game. The music is always the key to your adolescent sexuality. It's many others things, too, but that's why the powerful access code is there.

Bonzai: So you have a number of these access codes . . .

Leary: And I could write the autobiography of my life in terms of the sounds I was listening to at the various stages.

Bonzai: Who were you listening to in puberty?

Leary: Well, that was Benny Goodman and Artie Shaw, and Helen O'Connell, and Tommy Dorsey . . . and then jazz came in during the beatnik period in the '50s.

Bonzai: Were you a beatnik?

Leary: No, but what does it mean, anyway? I was listening to the music and reading the poetry and the books. I was actually teaching at Berkeley at the time, so I used to spend a bit of time in San Francisco. That was when Mort Saul was at The Hungry I, and then Lenny Bruce came along . . .

Bonzai: Were you a friend of his?

Leary: I knew him, but by the time I knew him he was pretty far gone into litigation and law.



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Bonzai: Was he someone who couldn't handle the paranoia?

Leary: He was the front line. He stormed the barricades first, by himself, and we came along as a second wave. There were lots more of us because of him. For one Lenny Bruce there were a thousand of us who had the courage or the perception to go where he led us. He was in a lonely position.

Bonzai: To continue the musical train of thought . . .

Leary: When we started running those early [LSD] sessions we got into Ray Charles, rhythm and blues, the basic down stuff like that. Then we were of course influenced by the folk music - chants. If you were taking big drug trips it was comforting to have the African and the Indian chants. And Coltrane was very important. Then the rock and roll wave came - we all remember where we were the first time we heard Sgt. Pepper's. So do The Bee Gees.

I can't finish the musical part without mentioning that David Bowie is our standard of musical accomplishment. We have all his records, we listen to him a lot particularly when we are taking strong drugs. His ability to change and grow and take risks and to keep moving and evolving is at a tremendous level of what anyone can do in any field. Without any publicity gimmicks - the work itself. I have great admiration for him.

Bonzai: You spent some time with The Beatles, didn't you?

Leary: Yes, but I really spent more time with them after they broke up - mainly with John and Ringo. I'm still close with Ringo - he's a fun lover. I always felt that The Beatles were irreverent, but it wasn't a down irreverence as in Dylan. I feel that juvenile irreverence and disrespect for adult authority is the key to individual evolution and species evolution. You've got to laugh at the adults, but you've got to do it in a way that's not destructive, that's not self-destructive or dark. "Animal House" is an incredible film - the early Cheech and Chong films did that.

Bonzai: Who do you think will be the president in the year 2000?

Leary: I think in the year 2000 the presidency will be an honorary position.

Bonzai: Like the British system?

Leary: If you'll excuse the expression, we'll have a queen. Everyone realizes that the president doesn't work anymore. You simply can't run a complex society like ours with a two-party wrestling match that puts one man in

a position - I say man, because that's the way it obviously had to be. The very nature of the presidency is going to become a friendly joke. The principles of the information society of networks and fast-moving communications systems will take the place of representative government and electing partisan people.

Bonzai: How long do you think you'll live?

Leary: Well, I'm very active in the life extension movement. Roy Wolford and Dirk Pearson are the leading writers in the field. They say that within ten or twenty years we'll double the human lifespan. I can see that 20, 30, 50 years ago there was a reason to limit the human lifespan. Our religions and philosophies glorify and prepare you for death. The notion of life extension is actively opposed by the conventional religions because, for obvious reasons, it blows the *raison d'être* - and again there's a great wisdom in every orthodoxy, in every taboo, every superstition. How horrible and depressing they seem to us now. At the time there was a certain reason for it, and until we understand how to reprogram the brain, and rejuvenate the nervous system, and continually refresh and re-approach life with a different perspective - before this period, and we're talking 10, 15, 20 years, longevity was a sort of horror. You'd get so bored. All the models - you look around and you see people aging - it's not encouraging. Any old person - and what's old? Over the age of 40?

Bonzai: Is old when you have trouble getting around?

Leary: Old is when you stop changing your mind. And we now have the techniques for rejuvenation - rejuvenation and reprogramming your brain, and for rethinking, so that there is no reason why a person of elderly years can't learn how to change and start new perspectives. But all these barriers are up - they don't like rock and roll, or they don't like video games, or they don't like drugs, or they don't want to change. The defenses put up against the future, basically.

Bonzai: Tell me a little about your autobiography.

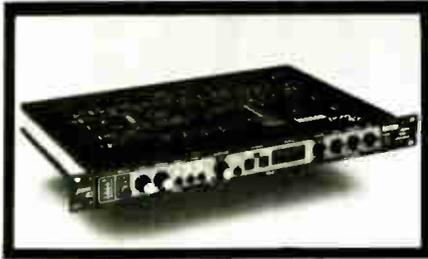
Leary: The book has an enormous amount of texture and information. It starts with me as a sperm in my mother's Fallopian tube and goes on from there. It also reads like an adventure story. I tried to write it so the reader has to turn pages. So far, the responses have been very rewarding.

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Lexicon PCM-42 digital processor

by Ken Pohlmann

Apparently a good performance of a good song isn't enough any more. To hear some people tell it, a hook isn't even enough to grab the listener; these days a tune will absolutely never make a bullet on the charts unless it has - special effects. In the early days, a little equalization and panning, and some compression, reverberation and delay, and the tune was polished enough. Today the trend is unmistakably toward higher degrees of signal processing; in some techno-wave tunes there is little else *but* signal processing.

Most control rooms are steadily accumulating the peripheral devices required to accomplish the new sounds sought by engineers and producers. Of course, digital technology has led the way in this development, and the real impact of digital processing will not be felt until we have passed into the final phase of studio evolution - the total



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digital studio. At that point, any process mathematically conceivable could be accomplished to produce any sound generation and processing. As we will see, the studio computer is already a reality, but let's begin with a look at some of the more familiar effects devices.

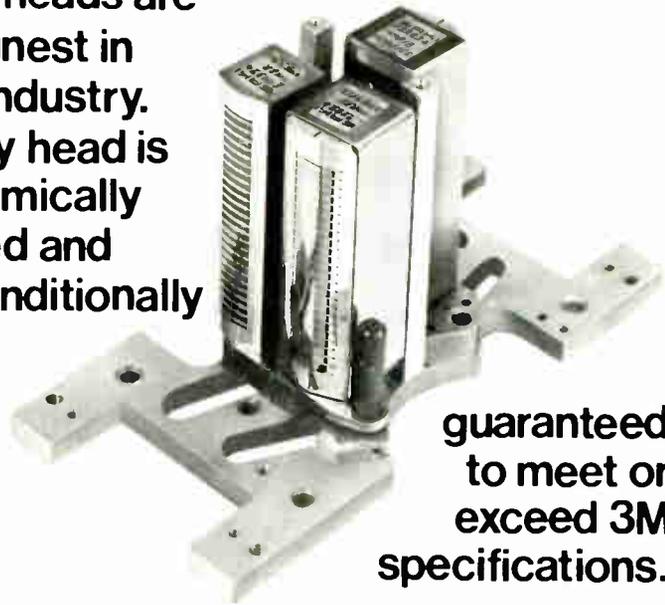
Delay lines aren't what they used to be. In the first place most of them are digital now, and once the signal has been converted into the digital domain, it is a relatively easy matter to accomplish additional modifications other than simple delay to the signal. Devices such as the DeltaLab DL-4 provide long delay times (up to 2.5 seconds) as well as infinite repeat, flanging, doubling, chorusing, and echo. It is interesting to note that one of the world's first effects, flanging, which originated with two tape machines recording in parallel while the speed on one machine was varied (e.g. thumb on flange), has evolved into a special

digital processor which goes to great lengths to simulate the effect of a simple tape trick. More than anything, that illustrates the essence of today's special effects devices - apparently it's cheaper to do it digitally.

Similarly, reverberation effects methods have changed considerably over the years. Now, more often than not, a dedicated digital device is used to create the effect. For example, the Ursa Major Space Station SST-282 accepts an input signal, and can generate reverberation effects, as well as pure delay and echo. The unit uses 16 delay programs and a patented randomizing algorithm to return sound back to the feedback loop. Equalization simulates the effect of reflections returning from variably reflective walls. A number of delay programs are user selected to provide a menu of sounds; everything from a mellow room to the ricochet of space repeats is obtainable from the basic working set of delay elements.

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This points up the inherent flexibility of digital systems – the programmability of the device overcomes all of the limitations of hard-wired analog devices to permit wide-ranging results from a set of relatively simple processing hardware.

Occasionally, dedicated devices have been designed to generate specific effects, and the resulting sound has become so identifiable that it is included in a mix for the simple reason that it is a standard.

The Eventide Harmonizer is an example of this phenomenon; the characteristic sound of its pitch changing, doubling, and delay produces a characteristic feel which producers might believe to be essential to properly cap-



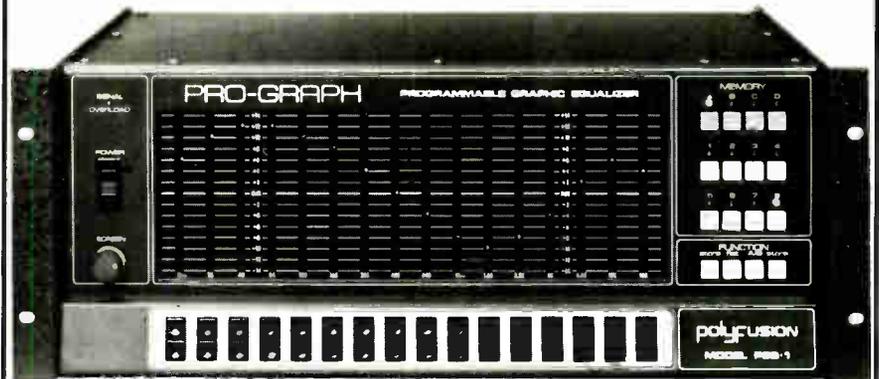
DeltaLab DL-4

ture a certain idiom. Ironically, its ability to produce believable harmonies is limited, and its real strength perhaps lies in its singular reverberation effect.

Another example of a combination effects unit is the Eventide SP2016 effects processor. It features reverberation effects, echo and comb, delay, and phasing and flanging. Perhaps of greatest interest is its programmability. The device incorporates plug-in software modules. Users enter into a kind of a ROM-of-the-month club in which the manufacturer updates and supplements a library of effects programs. A simple chip change realizes a new sound; sophisticated users have the opportunity of writing their own software and burning their own ROMs. I expect that in the future successful producers will bring their own secret ROMs to their sessions, and software theft/piracy could take on new dimensions.

Another example of a dedicat-

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ed effects device is the Lexicon Super Prime Time. Once again the building blocks of delay hardware have been extended to produce a variety of effects. Flanging, chorusing, echo, etc. are available from this device, but its programmability includes the ability to store and recall a sequence of effects events. Thirty-two effects can be recalled from the front panel, or in the case of a live performer, from a footswitch. This illustrates another

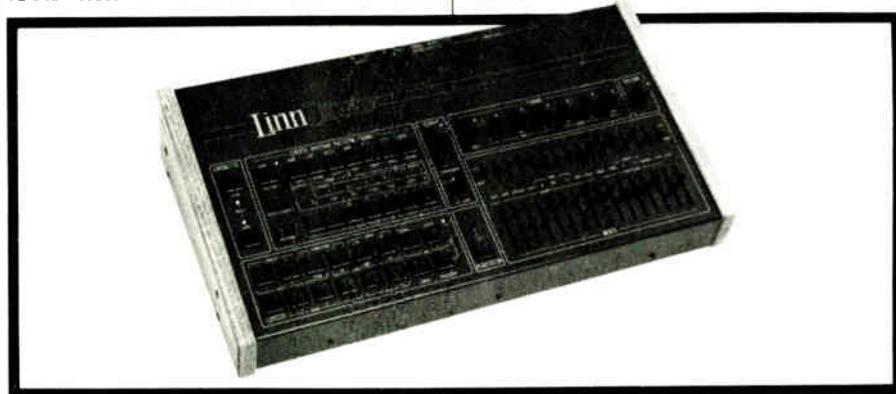
be more efficient to sometimes be able to share resources between the modules. For example, several years ago, Audio + Design considered introducing a shared access memory system in which a single computer controlled a modularly-constructed memory. Perhaps the idea was ahead of its time - for now and in the future, it seems that dedicated hardware will be competing against general, programmable systems.

processing of acoustic sounds, with playback on a music keyboard. Or sounds may be drawn by the user and directly synthesized by the machine.

Extensive mixing and editing of sounds is also possible with sophisticated interactive video techniques such as light pens, etc. Keyboard sequences may be stored in memory for playback. Inner functions such as attack and decay of waveshape envelopes can be controlled, and music composition languages permit the entering of notes, time values and expressions. Synchronizing with film, video, and audio tape machines is easily accomplished. Also, several of the systems, most notably the McLeyvier, offer music copying facilities with a graphics plotter.

The DMX-1010 manufactured by Digital Music Systems, is a computer sound processor specifically designed around an LSI-11 microcomputer and uses this general purpose computer as a general purpose audio computer. As a synthesizer it utilizes either additive synthesis or frequency modulation synthesis. It encompasses even greater flexibility than other digital synthesizers. For example, it can accomplish digital speech synthesis. As a sound processor, the 1010 can be programmed to function as a delay line, phaser, flanger, echo, reverberator, equalizer, compressor, etc., and thus could be used to replace all of those conventional studio devices. It uses 16 bit converters and arithmetic throughout for high fidelity of processing. Of course, since its utility is based on the software programs written for the LSI-11 mini, it may be revised and updated, and expanded at will (or at least as willfully as your programmer permits). For anyone who might wish to enter the studio, and begin studying the possibilities of sound generation and processing, and never come out again, these digital synthesizer/processor systems are recommended. They represent veritable universes unto themselves with respect to sound production possibilities.

And now that we've talked our way up to the \$35,000 price tag processors, we might conclude by considering the possibilities of the \$0 price processors. For example, consider the old standby: record your vocals on a piece of scratch tape. Play the tape backwards, and make a new recording. Give the backwards recording to the band, and have them learn how to sing these backwards lyrics (not easy!). Bring them back into the studio, and record their backwards vocals. Now play the tape backwards again, and sync it back into the tune. Now that's an effect that will cost you nothing, and I defy any processor, computer or otherwise, to create anything as strange. I mean, we're talking *gold* here. ■



LinnDrum by Linn Electronics

aspect of digital processing: not only can one device serve many functions, but its specific function may be rapidly altered. Moreover, its changes may be pre-programmed to occur within a musical context.

In my mind, this is a clue pointing to the future development of signal processing devices - general purpose digital systems communicating with the console and tape machine to incur processing much like an automated console is programmed to, and later processes the music program.

The Prime Time illustrates another interesting feature, which supports the trend toward an all-automated processing system, in which the user can store a library of effects on tape. The programs can be downloaded onto tape, and used interchangeably between Prime Times - again enter the producer with his secret effects

A variation on the dedicated effects boxes described above is the modular concept in which dedicated modules are plugged into a mainframe. The Audio + Design Scamp rack is an example of this concept. Choice of modules includes a compressor/limiter, transformerless microphone preamp, sweep equalizer, parametric equalizer, dynamic noise filter, octave equalizer, distribution amplifier, pan effects, flanging, vocal stressor, de-esser, noise gate, and expander gate. All of these modules occupy one rack space in a 27 space rack, and a remote power supply powers all the modules.

Such a system is ideal for a wide variety of effects in a small space. But the independence of the effects is achieved at a price. It would perhaps

Especially interesting effects (and good drum parts) are obtainable from the drum machines. More and more drum tracks are synthesized, or synthesized drums are being mixed with live drums. As the sophistication of the machines increases, it is becoming increasingly difficult to distinguish the machines from the drummers. The Linn Drum Machine and Roland Compu-drummer are examples of synthesized percussion devices which never drag or rush the beat. Drum sounds have been recorded, and transferred to ROMs for playback by the machine in patterns and tempi which are programmable by the user. Although the line level output may be fed directly into the mixer, some engineers prefer to apply the signal to a speaker, and mike the speaker. Synthesized bass drum parts are sometimes recorded this way, and ambience is sometimes conveniently recorded for direct-in synthesized drum tracks by applying a sub mix to speakers in a medium live room, and miking the acoustic result with a pair of stereo microphones. Of course, digital reverb-eration works equally well for digital drums.

Synthesizers perhaps best represent the new creativity in signal processing available to studio users. Virtually any sound in the far excesses of imagination may be implemented on the new breed of digital synthesizers. Instruments such as the New England Digital Synclavier II, Fairlight CMI, and the McLeyvier offer unprecedented processing opportunities and flexibility of applications. The Synclavier and the CMI, as well as the Emulator by E-mu Systems, permit digital recording and

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DIGITAL DISCUSSIONS

PART 10

A/D AND D/A CONVERSIONS

by Ken Pohlmann

Some people think that digital technology is unnatural. They point out that natural, organic things seem to be analog - most processes and functions occur continuously in time over an analog and infinite number of amplitudes and times. It might appear that discrete measuring systems somehow violate our basic laws and must inevitably lose information originally present in the analog. Some people might ask, how can a finite amount of data compare with an infinite amount of data? I would respond by saying that paradoxically, discrete techniques yield more information about analog experiences than analog measurements. The trick is that to know something, it must be quantified.

Just as a continuous strip of film fed through a projector would yield a helpless blur, but a sequence of discrete frames yields the full reality of a continuous event, so digital permits us more meaningfully to quantify analog information. As early Digital Discussions stated, the name of the game is information. Our analog world is unintelligible

unless its information can somehow be extracted - and today's most effective means of utilizing information is, of course, digital means.

On the other hand, our quest to understand the information contained in our analog world is immediately faced with the difficulty of the incongruence of the two systems. Somehow, the analog world must be digitized, the information must be digitally processed, and often it must be undigitized and placed back in the analog domain. Thus, one of the fundamental problems facing our analog world, with its digital computers, is the task of converting analog to digital, and back again.

That problem is of great concern to the digital audio community. Whether acoustic or electric, sound usually begins as an analog event, and must ultimately be reproduced in analog. Parenthetically, I should mention that it has been suggested that we might try bypassing our ears and plug directly into the brain - this would eliminate the need for output conversion since the brain is a digital device. (If digital is unnatural, we're in more trouble than

we thought.) Meanwhile, conversion requirements command considerable attention with digital audio engineers. Just as audio transducers have always been stumbling blocks, A/D and D/A conversion, which is strikingly similar to transducing, has presented serious difficulties. The unofficial professional audio standard of a linear 16 bit word is about the present resolution limit for mass-produced affordable converters, and fortunately it narrowly satisfies our criteria for fidelity in digitally recorded music. This squeeze is especially felt in the manufacture of A/D converters; they are inherently more aggravating to build to tolerance.

It's very fortunate for long-suffering audio consumers that A/Ds are needed only in the record side, and not the reproducing side of the audio chain. That saves the sticky side of the process for those who make digital recordings; but for reasons to be made clear.

Let's begin this month's discussion with a look at D/A converters.

A digital-to-analog converter takes an input digital word and converts it to an output analog voltage or current that is proportional to the input word. To accomplish this, all conventional D/As contain a set of switches and resistors, a reference voltage, and a voltage scaler - it's very simple. In fact, out of curiosity, I once posed this design problem to a nine year old kid and he produced a drawing very similar to the one shown in Fig. 1 - a basic weighted resistor D/A converter. Each switch represents an input bit and the corresponding weighted resistors keep track of the binary value of the bits. An input logical one bit closes a switch and contributes a current to the summing buss while a switch remains open for a logical zero bit, and no current is contributed. The output op amp converts from current to voltage. The feedback resistor around the op amp acts as a multiplier and scales the output voltage to the specified levels, and the reference voltage provides the current flow across each of the weighted resistors. Its operation can be summarized by this equation:

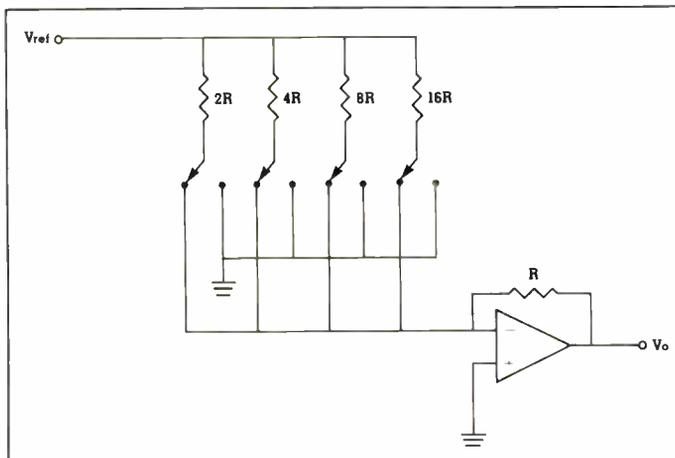
$$E_{out} = \frac{R_i E_{ref}}{R} \times \left(\frac{B_1}{1} + \frac{B_2}{2} + \frac{B_3}{4} + \frac{B_4}{8} + \frac{B_5}{16} + \frac{B_6}{32} + \frac{B_7}{64} + \frac{B_8}{128} \right)$$

where B1 through B8 represent the input binary digits. For example, suppose the input word is 11010011, $E_{ref} = 10$ volts, $R_i = 1.28$ kilohms, and $R = 10$ kilohms. The output voltage would be:

$$\left(\frac{1.28 \times 10^3 \times 10}{10^4} \right) \left(1 + \frac{1}{2} + 0 + \frac{1}{8} + 0 + 0 + \frac{1}{64} + \frac{1}{128} \right) = 2.11 \text{ volts}$$

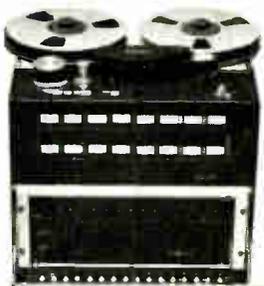
While this design looks good enough on paper, it is rarely used practically because of the complexity of manufacturing resistors with powers of two values, in multiples of the basic R. Specifically, when attempting to manufacture such a

Fig. 1:
Weighted
resistor D/A



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design using monolithic or hybrid techniques, the wide resistance values cannot be accomplished. Since the LSB is 2 to the power of n times greater than the MSB resistor value, it would have to be 4096 megohms for a 10 kilohm MSB resistor; this is too big to fabricate on a chip. Discrete designs are seldom used for this application, or any other converter - differences in tolerance, tracking, and stability with temperature severely limit the device's accuracy.

A more suitable design approach for a D/A converter is the R-2R resistor ladder method shown in Fig. 2. This circuit contains switches, op amp, and a reference voltage, but there are now two resistors per bit, one in series with the switch, and a one-half valued resistor in the summing line to form a pi network. Once again, each switch contributes its appropriately weighted component to the output - the current splits at each node of the ladder resulting in currents through the switch resistors that are weighted by binary powers of two. If a current I flows from the reference voltage, $I/2$ flows through the first switch, $I/4$ through the second, $I/8$ through the third, etc. The R-2R network is preferred because of ease of manufacture - only two values of resistors are needed - R and $2R$ - and some designers use only one value resistor, with two resistors in series to obtain $2R$. Fabrication is uncomplicated because the resistor values are small. Furthermore, matching is only critical for the more significant bits.

Although the R-2R design has gained almost universal popularity, a uniquely simple approach known as the $2^n - 2R$ method has been used for some applications; it is shown in Fig. 3. An n bit converter requires 2^n equal value resistors, and $2^{n+1} - 2$ switches; this is a large number of components, but they can be economically manufactured on a chip with MOS LSI techniques. The digital input code tree structure controls the voltage dividers such that each word generates a unique path through the divider, and a unique analog output voltage.

The other side of the coin is the input process of analog-to-digital conversion. This task is inherently more complicated than digital-to-analog conversion. Indeed, some A/D designers use D/As as component parts within A/Ds. Two fundamental A/D design philosophies prevail: the analog input signal is converted to a set of pulses whose frequency is measured to provide a digital output, or the input analog signal is compared against a variable reference voltage within a feedback loop to determine the output word. Voltage-to-frequency, ramp, and integration methods are examples of the former, successive approximation and parallel are examples of the latter.

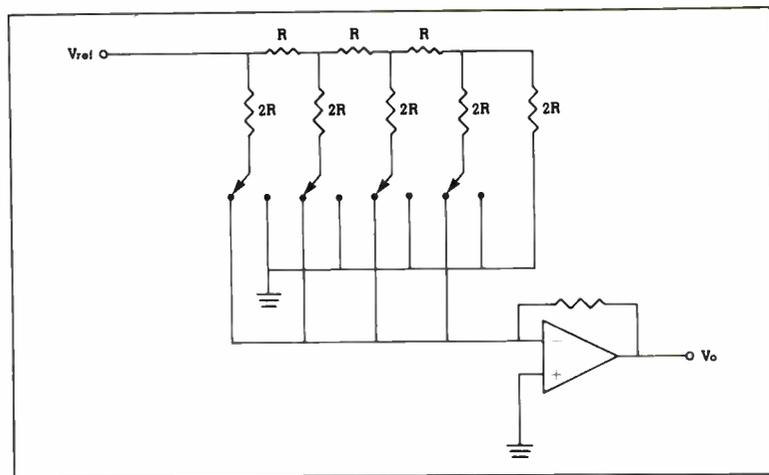


Fig. 2: R-2R D/A converter

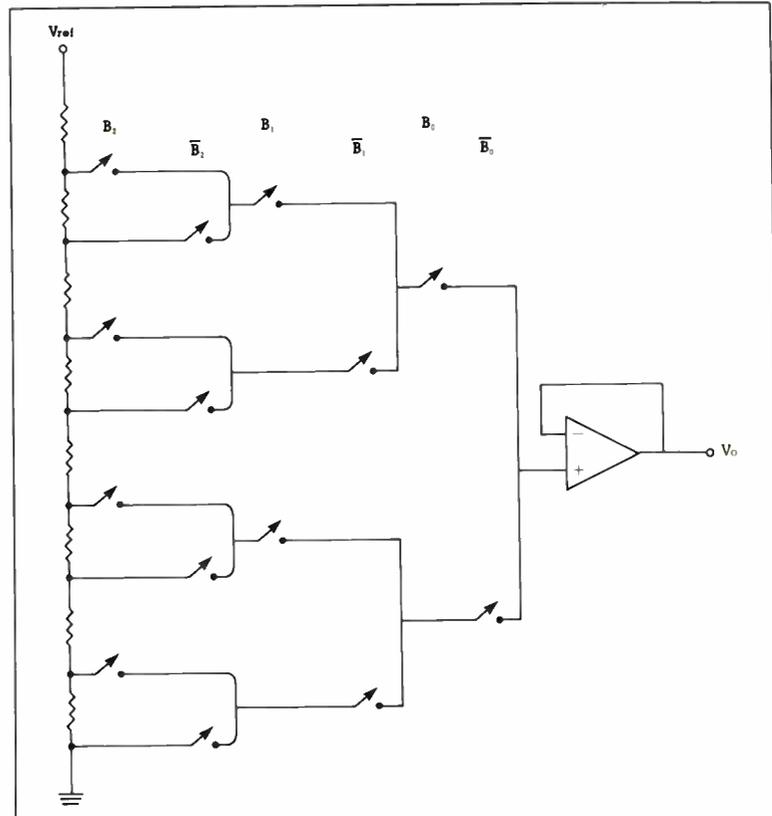


Fig. 3: Three bit $2^n R$ D/A converter

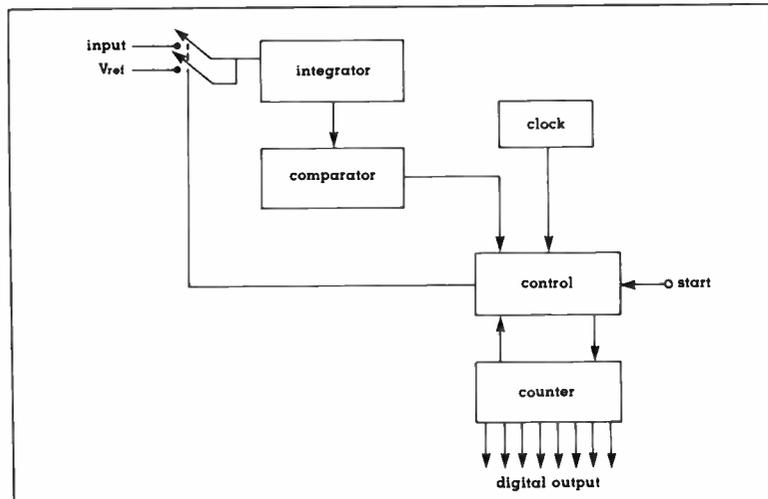


Fig. 4: Dual slope integrating A/D converter

A dual-slope integrating A/D is shown in Fig. 4. Initially the analog signal is switched into the integrator where it is integrated while a digital counter times the duration by counting clock pulses. When the counter overflows, the analog signal is removed from the integrator and a reference signal is negatively integrated while the counter again begins counting from zero. When the integrated value of the reference reaches zero, the counter is halted and the resultant digital word represents the analog input. Thus the time required to count down from the integrated amplitude of the analog input, as measured by a counter, determines the output digital word. This type of converter offers excellent noise rejection (an integrator is essentially a low pass filter) and stability, but it is too slow for most computer applications due to the integration times involved - two clock periods times the number of quantizing levels. For example, a 12 bit converter clocked at one megaHertz would require $2 \times 1 \text{ microsecond} \times 4096$ or 8.19 milliseconds for conversion. That's too slow for music, but the design, with its excellent noise rejection specifications, makes it a good choice for use in digital volt meters.

Another type of converter uses a voltage-to-frequency method in which the analog signal is integrated

and applied to a comparator. As the comparator changes state, the integrator is reset and the cycle is reinitiated. A counter counts the number of cycles (frequency) to provide a digital word output. Once again, this bit-serial method is too slow for music applications.

A faster and overall more satisfactory converter uses the successive approximation technique. This converter employs a D/A in a feedback loop, a comparator, shift register, output latches, clock and a control section as shown in Fig. 5. In essence, this converter compares the analog input with its interim digital word converted to analog, until the two agree. In operation, the device is strictly synchronous and follows an algorithm which bit by bit sets the output digital word to match the analog input. For example, let's assume an analog input of 6.6 volts. The most significant bit in the SAR is set to 1, with the other bits still at zero; thus, the word 10000000 is applied to the internal D/A. This word places the D/A output at its half value of 5 volts. Since the input analog voltage is greater than the D/A output, the comparator remains high; bit one is latched at logical one. The next most significant bit is set to 1, and the word 11000000 is applied to the D/A, and in interim output of 7.5 volts appears. This is too high, so the second bit is reset to zero and latched.

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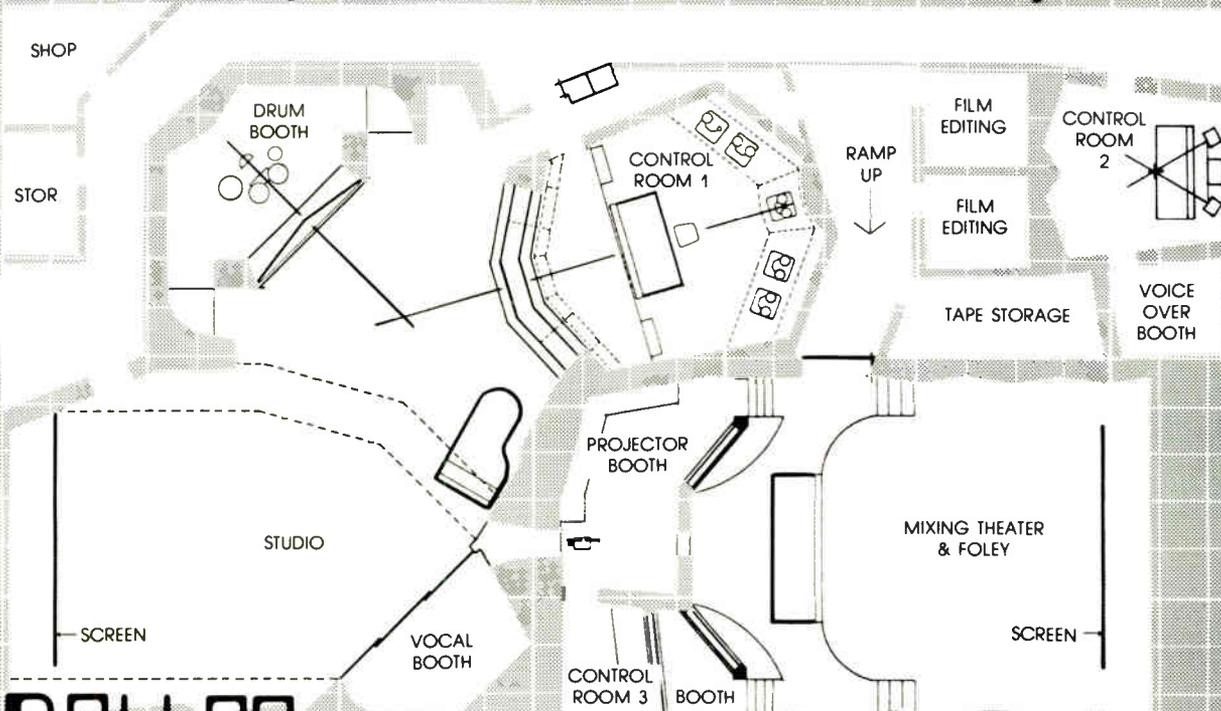
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Fig. 5:
(top) SAR A/D
converter

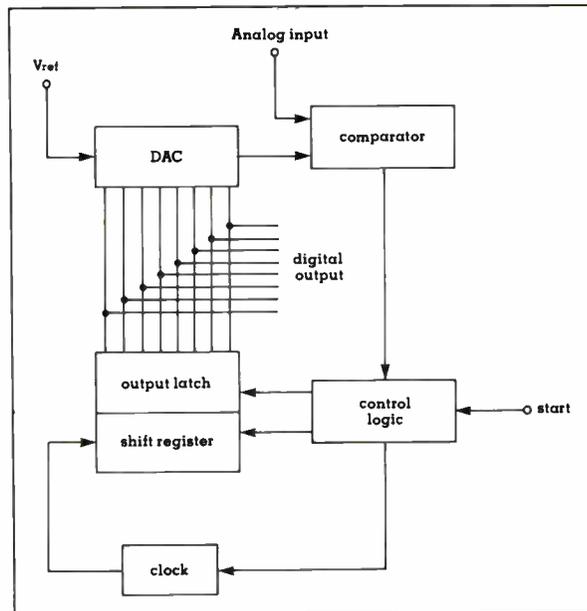


Fig. 6:
(center) Parallel A/D
conversion

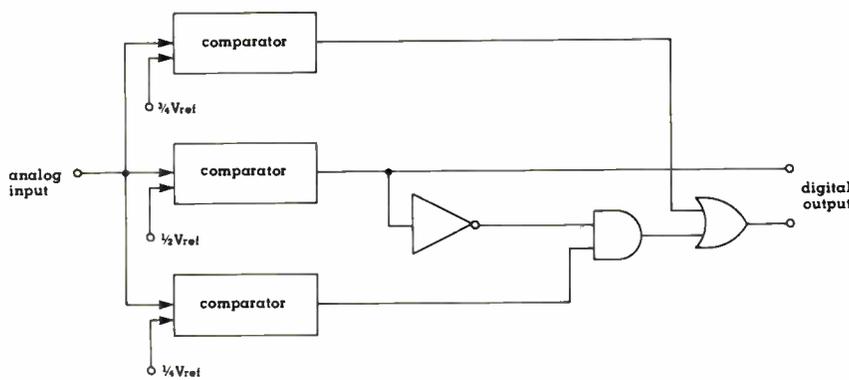
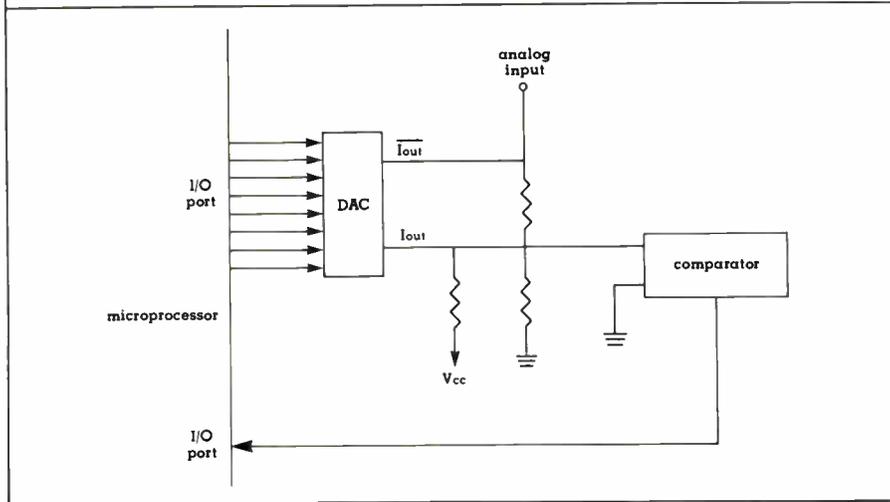


Fig. 7:
(bottom) Software
A/D conversion



over 50 million samples per second are obtainable, but the hardware cost for more than a few bits is rarely cost effective. Modified parallel designs yield a good trade-off between hardware complexity and speed; conversion rates of several hundred thousand per second, with 16 bit resolution, are possible. Such a parallel-serial design might use blocks of 4 bit parallel converters; their outputs are converted back to analog, and subtracted from the input to the next stage, until the complete conversion is obtained.

Finally, we should consider the design strategy in which software is used to replace much of the conversion hardware. The A/D system shown in Fig. 7 uses a comparator to examine the output of a D/A converter and the analog input voltage. A microprocessor controls the system in which I/O ports are utilized to read the comparator's output, and write data to the D/A. The system's conversion scheme depends on the algorithm programming. For example, an SAR algorithm could be used with a dedicated microprocessor to achieve very efficient conversion.

We have seen that a wide variety of design techniques exist for the two fundamental I/O operations in any digital audio system - analog-to-digital, and digital-to-analog conversion. The complexity of accomplishing these conversions has meant that the potential of digital processing has only recently been brought within reach of commercial audio. Still more recently, and partly still to come, are further significant cost reductions; LSI integration of this hardware is bringing down the cost of digital audio players and recorders to promote direct competition with analog equipment. Much of this is possible because manufacturers have solved the problems of the conversion of the audio signal.

Next month we'll examine some more bits and pieces which contribute small yet vital functions in a digital audio system, in further preparation of our completed hypothetical design of such a system. ■

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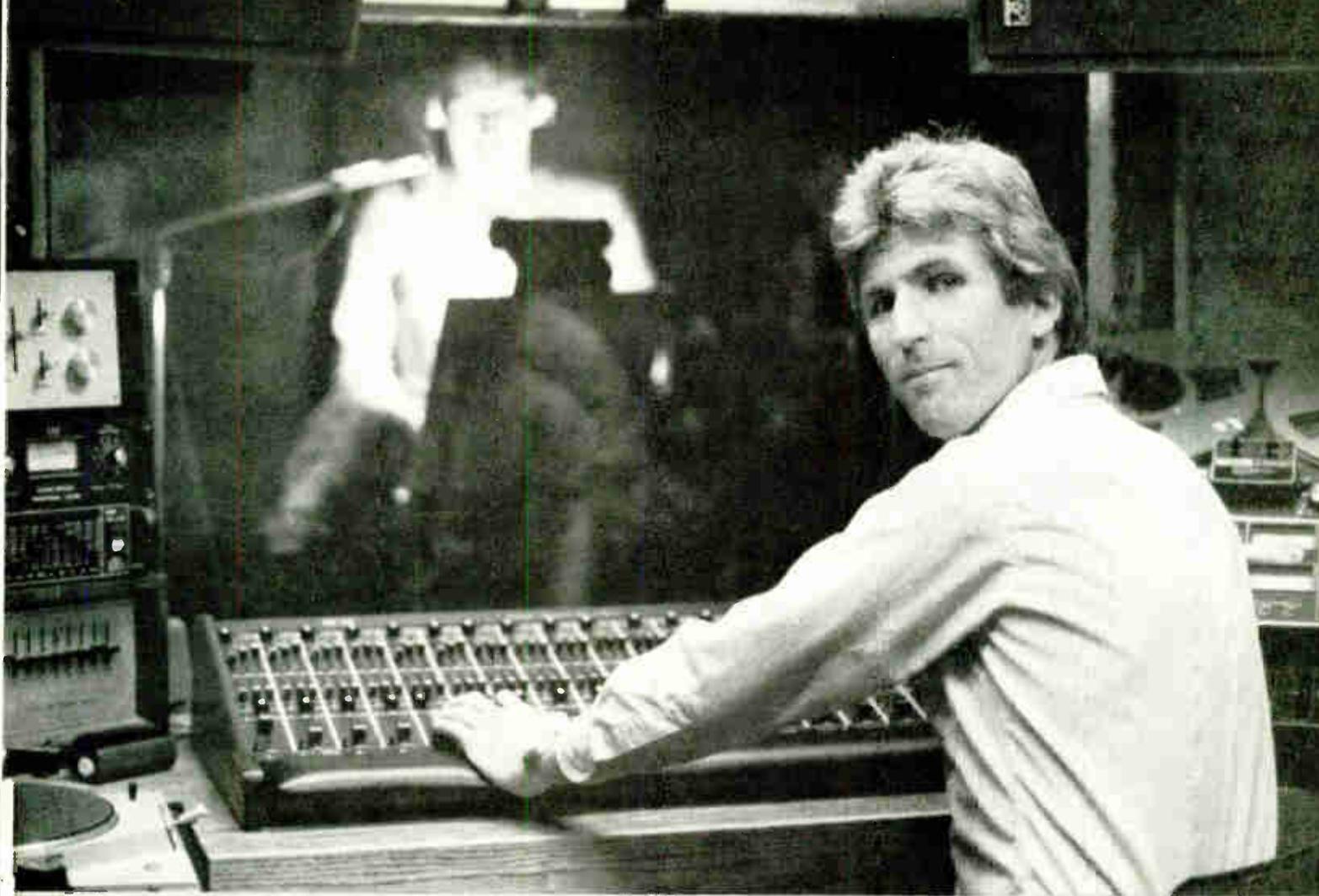
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The third bit is set to 1, and the word 10100000 is applied to the D/A, which produces 6.25 volts, so the third bit remains high.

This process continues until the least significant bit is latched and the digital word 10101001 (representing a converted 6.6 volts) is output from the A/D. This successive approximation method requires $n + 1$ clock pulses, where n is the number of bits in the output word, and the internal D/A must perform n D/A conversions for every one A/D conversion. In spite of this recursion, SAR converters offer rela-

tively high conversion speed and are very cost effective because they can convert n bits for the cost of one bit's worth of converter. The SAR has thus gained almost universal acceptance.

Parallel A/D converters use a conversion channel for each bit and thus can operate at extremely high speed, at the disadvantage of higher price. This streamlined method uses a comparator for every binary-weighted network, as shown in Fig. 6; the only other hardware required is decoding logic for the comparator outputs. Because of the straightforward design,



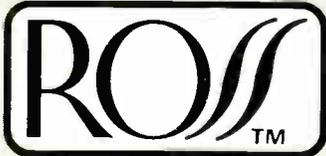
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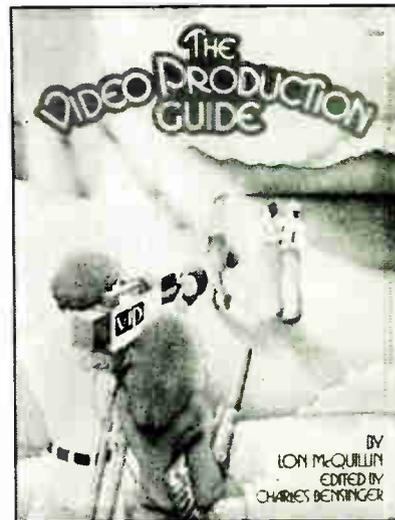
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Book of the Month



The Video Production Guide by Lon McQuillan Howard W. Sams & Co., Inc.

Having been an avid reader of "how-to" video and audio books for some time, it was a pleasure to read such an up-to-date account of the fast-moving world of professional video. Lon McQuillan's *Video Production Guide* is an informative and complete manual that could be a real asset to anyone with an interest in video production - whatever their level of involvement or expertise.

Video Production Guide begins with pre-production planning and leads the reader through to post production techniques and distribution. The text covers such items as budgeting, selecting the right equipment, location recording, sweetening, editing and special effects systems, and how to get started.

Although not everyone will be interested in all the information available here, the book is written in a style that allows quick access to answers for most production situations. It also approaches this subject from the viewpoint of independent production rather than that of network broadcasting.

Many books have attempted to explain the more complicated technical aspects of video, but *Video Production Guide* is one of the few that really succeeds in presenting this information in an uncomplicated way. Whether for the student or working professional in the field, this guide provides new information and ideas in a very accessible way.

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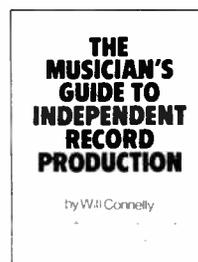
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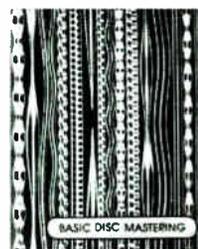
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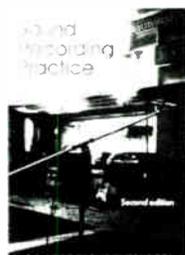
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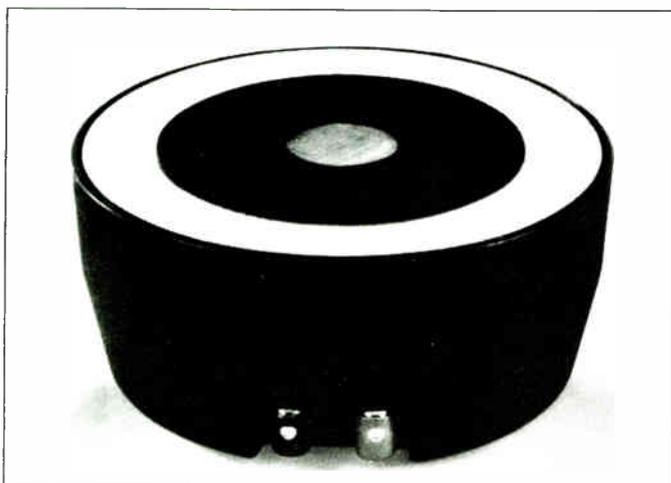
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EAW/RCF COMPRESSION DRIVER

The principal performance feature of Eastern Acoustic Works' new N-480 driver is its extended high frequency response of -3 dB to -6 dB (depending on horn) at 18,000 Hz. This results from the use of an exceptionally high flux magnetic assembly producing 19,500 gauss-in the gap, and the precision phase plug. Maximum versatility in horn driver interface is provided by the use of a universal 5 bolt pattern enabling the driver to mate with all international standard 1" entry horns, including the 2 bolt "Altec Standard," the 3 bolt "JBL Standard" and the 4 bolt "European Standard." The EAW/RCF N-480 driver carries a retail price of \$110 each.

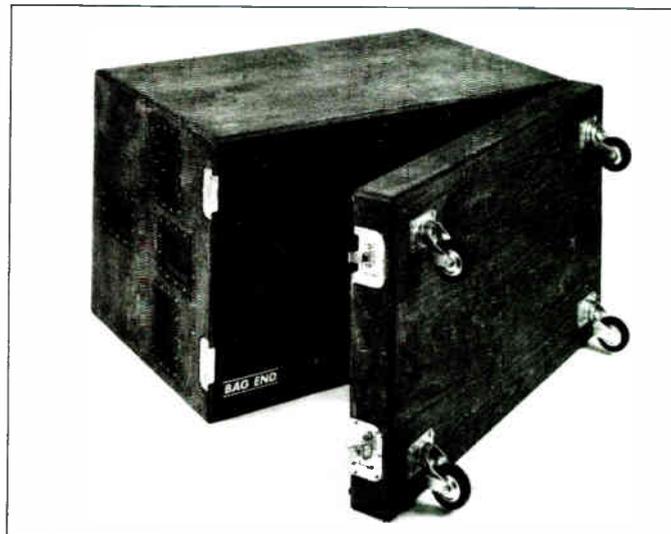
Circle #049 on Reader Service Card



PAS TIME OFFSET CORRECTOR

Professional Audio Systems has recently introduced TOC™ 23 designed to correct loudspeaker time offset by providing an active delay that creates an identical acoustic source for the low, mid and high frequency components. Standard features include special filters for plate group delay through the crossover points, equal group delay in all outputs in both 2 way and 3 way modes, and adjustable time offset correction in low and midrange outputs.

Circle #050 on Reader Service Card



BAG END'S NEW AF-1

The all new bi-amped AF-1 loudspeaker systems from Bag End employ a 3-way system with single proprietary 18 and 12" isolated drivers, and a constant-directivity horn/tweeter. Passively crossed over at 3500 Hz, and electronically crossed at a recommended 125 Hz, the AF-1s were originally developed to complete a custom-ordered sound reinforcement package for the United States Air Force.

Offered in four different models, the AF-1 enclosures come in a vertical or horizontal format, finished with either a rugged textured black paint, or a rich dark brown walnut stain. The unit alone measures 22³/₄" high x 37¹/₂" wide x 24" deep. The AF-1s range in price from \$980 to \$1,360, depending upon options.

Circle #051 on Reader Service Card



SONY CASSETTE DUPLICATING SYSTEM

A new high speed audio cassette duplicating system has been announced by Sony, and will be distributed by Educational Electronics Corp. The CCP-13B series is a 4 track/4-channel mono/stereo cassette to cassette, or reel to cassette system, which is expandable to 43 copies. The new "B" series duplicators feature dramatically improved cross-talk specifications, plug-in circuit boards, and a new capstan and pinch roller design which improves head-to-tape contact.

Circle #052 on Reader Service Card



TIMES ONE POWER AMPS

By incorporating a class A amplifier with a class AB amplifier using radio frequency techniques, Times One has engineered three professional power amplifiers with clear open sound, wide stage imaging and stability under load. Features include: slew rate - 130 volts per microsecond; THD - .01 to .05% from 1 watt to full power, 20 Hz to 20 kHz; damping factor - 1000, from 60 Hz to 10 kHz; phase delay - 6°, 20 Hz to 20 kHz; DC offset speaker protection, temperature status indicators and dual mono construction.

Circle #053 on Reader Service Card



TELEFUNKEN MAGNETOPHON M 21

AEG Telefunken has introduced a new professional audio tape recorder, model M 21, for broadcasting, sound recording and remote recording applications. This new generation "magnetophon" employs complete microprocessor control of all tape transport functions as well as audio amplifier adjustments. Information on tape speed, tape type, equalization, etc. are entered via keypad into the microprocessor control system which automatically makes the necessary adjustments in level, bias, motor speed, tape tension, etc. Standard features of the M 21 include 12½" reels, return to zero locator, LCD display of functions and tape position, ± 10% vari-speed and four tape speeds. Delivery is mid 1983, price depending upon configuration: \$7,500.

Circle #054 on Reader Service Card



ASTATIC BL94 VOCAL MICROPHONE

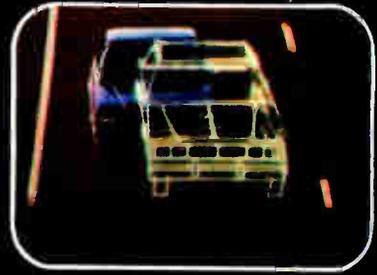
The new Astatic BL94 dynamic cardioid microphone was designed for brass as well as demanding vocal.

SYSTEM IV ANIMATION

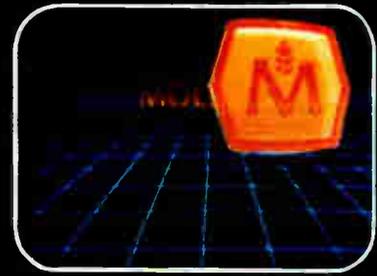
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'REAL TIME' ANIMATION



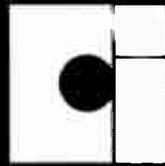
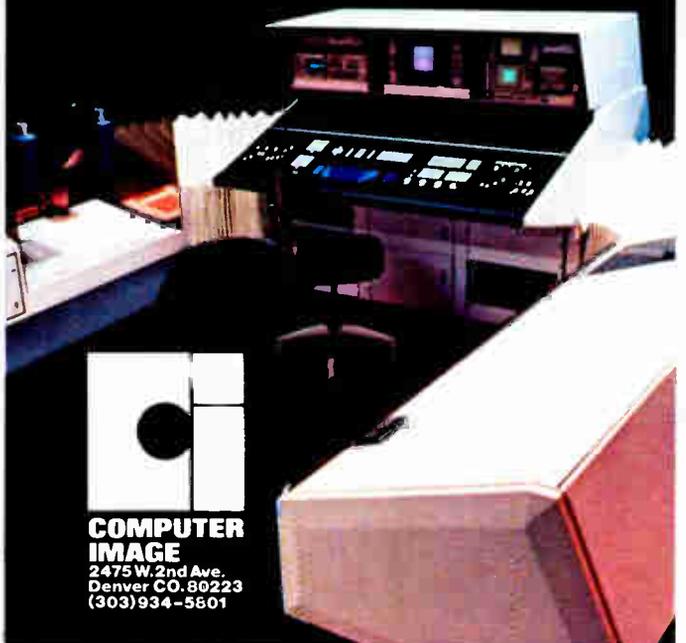
CBC 9, CANADA



LEAN MACHINE, CHEVRON



MOLSON BEER, CANADA



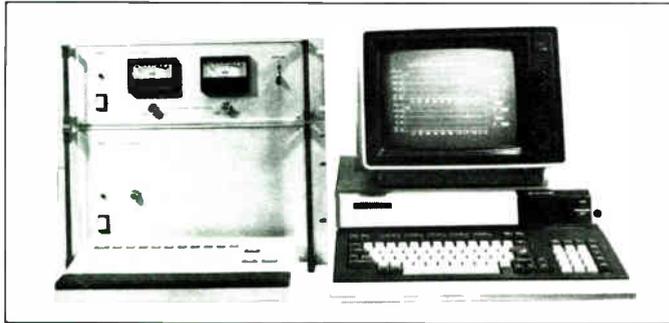
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Denver CO. 80223
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Circle #055 on Reader Service Card

PREVIEW

applications. Its slight high end presence boost adds punch and projection and a specially designed element shock mount reduces standard handling noise. The BL94 is the top of the line of Astatic's newly introduced Blue Line-Pro Series of professionally oriented vocal and instrumental microphones.

Circle #056 on Reader Service Card

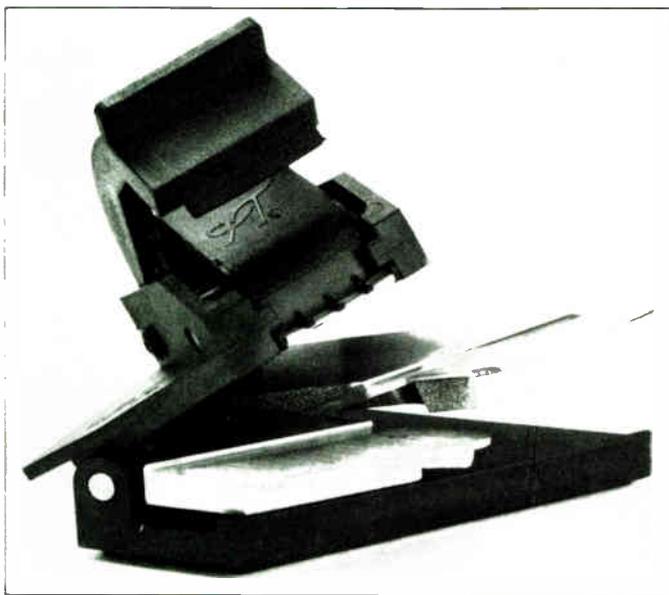


NEC DG-802X DIGITAL GRAPHIC EQUALIZER

With NEC's new DG-802X Digital Graphic Equalizer, a "soft touch" key pad electronically controls phase and amplitude independently of one another at 10 center frequencies. Used in conjunction with a personal computer, the DG-802X 2-channel system provides a sophisticated graphic display for tracing active sound fields. Both phase and amplitude at each frequency are graphically displayed. A wave form memory can store up to 9 wave forms. Random access to the memory allows for instant recall by pushing a single button.

The DG-802X Digital Graphic Equalizer has a dynamic range of more than 90 dB, and separation between the 2 channels is better than 90 dB. Distortion is less than 0.01%.

Circle #057 on Reader Service Card



THE CAT™ SPLICER

The CAT™ Splicer, by Soundsplice, Inc., is an automatic splicing machine for 1/4" magnetic recording tape. The base assembly performs the cutting operation and consists of a base tray with two cutting plates. The plates are precision machined of anti-magnetic steel with self-sharpening cutting edges. A channel 1/4" wide across the top surface of both plates provides an angle cut of 45° (a unit cutting at 60° will be available in the spring of 1983). A clean cut at the precise angle automatically holds, aligns and abutts both ends to be joined. The joining tab assembly dispenses a pre-cut splicing tab over the two ends of the recording tape to be joined, with the tab automatically centered and aligned. Price: under \$100 per unit.

BTX SOFTOUCH™ TRANSPORT CONTROLLER

Softouch applies BTX's extensive experience with SMPTE time code systems to provide cost-effective multi-machine control for such functions as: direct access to record in/out; automatic dialog replacement, i.e., the ability to loop with beep tones; sound effects editing, requiring a multi-machine edit controller. Softkeys™ allow the unit to learn and permanently store up to sixteen production sequences simultaneously. Recall and execution of these is accomplished at the touch of a key. Softouch interfaces to all presently installed Shadow synchronizers and Cypher time code systems.

Circle #059 on Reader Service Card

WHIRLWIND DIRECT BOX

Whirlwind Music Inc. recently introduced a new direct box named The Director, which employs Whirlwind's new TRHL-M transformer and is part of a new series of professionally-oriented products that Whirlwind is currently introducing. Some of The Director's features include its ability to handle instrument, line level and speaker level inputs while providing a clean Lo-Z signal output. The Director is equipped with a ground lift switch and a hi-pass filter. Frequency response is flat from 20 Hz to 32 kHz and The Director can handle 6 volts at input before saturation.



WATERS WHISPER GLIDE AUDIO FADER

The new "Whisper Glide" audio fader from Waters Manufacturing, Inc., combines the company's Mystr® conductive plastic elements with a new, smoother action designed to meet the needs of the recording and broadcasting industries. The Whisper Glide fader uses a stable, glass-hard resistance element with a compatible precious-metal contact to provide long service life without contact noise. The Whisper Glide fader is equipped with gold-plated multi-pin connectors for quick installation or replacement without the use of solder. The Whisper Glide fader is available in 100 and 65 millimeter sizes.

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JULY 1983

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 140 16-track 310 Retailer
 140 24-track 410 Mfr's. representative
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 175 Sound Reinforcement Other _____

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005	025	045	065	085	105	125
006	026	046	066	086	106	126
007	027	047	067	087	107	127
008	028	048	068	088	108	128
009	029	049	069	089	109	129
010	030	050	070	090	110	130
011	031	051	071	091	111	131
012	032	052	072	092	112	132
013	033	053	073	093	113	133
014	034	054	074	094	114	134
015	035	055	075	095	115	135
016	036	056	076	096	116	136
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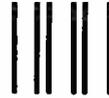
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005	025	045	065	085	105	125
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011	031	051	071	091	111	131
012	032	052	072	092	112	132
013	033	053	073	093	113	133
014	034	054	074	094	114	134
015	035	055	075	095	115	135
016	036	056	076	096	116	136
017	037	057	077	097	117	137
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The 6120 is an original — not just a warmed-over copy of some other duplicator. It's brand new, and offers you more time-saving, quality features in one compact package than any other duplicator on the market today.

FAST

16-to-1 copying speeds from reel or cassette. Reel modules run at either 60 or 120 ips and cassettes run at 30 ips, which means you can copy up to eleven one hour programs in less than two minutes!

EFFICIENT

The 6120 accepts either 7" (178 mm) or 10½" (267 mm) reels, so you don't waste time rethreading from one reel format to another. All key setups and adjustments are made easily from the front of the system, so you don't have to waste time moving or disassembling the 6120. Accurate monitoring and precise adjustments of audio and bias levels are made possible even at high speeds, because of quick response LED level indicators. All cassette slaves are independent, so a jammed tape won't shut down the entire system, and a LED indicator warns you of an incomplete copy in case a cassette tape jams or ends before the master.

If you want good duplicates start with a great original

The new Telex 6120

EASY AUTOMATED OPERATION

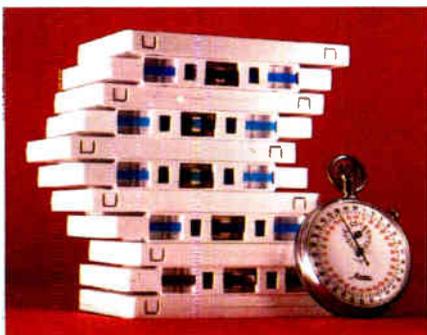
The 6120 practically runs itself. The system features automatic end-of-tape stop and auto recue on the reel master, and a choice of manual or auto rewind on the cassette master, providing virtually uninterrupted operation. Changes in equalization are made automatically when you change speeds on the reel master, thereby reducing setup time and avoiding errors.

EXPANDABLE

The modular, building block concept lets you buy just what you need today and expand the system to meet your growing needs tomorrow. Modules simply plug together. There's no need to add people or space as the system grows, because the 6120 is so compact that even a full system can be operated by one person.

QUALITY TRADITION

For over 20 years now, Telex has been the choice of those who are fussy about the quality of their duplicate tapes. The brand new 6120 is made in the U.S.A. in the Telex tradition of quality, so parts and service are always available. To learn more about the 6120, write today for complete specifications and production capabilities. While you're at it, make an appointment to see our special 6120 video tape presentation entitled "Beating Real Time".



You can produce eleven C-60 cassette tapes in less than two minutes!



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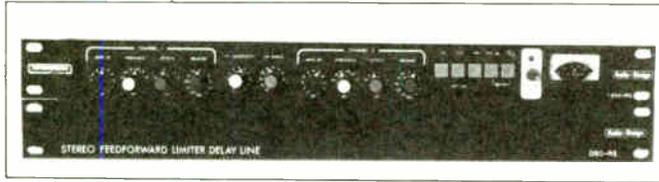
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PREVIEW



A+D LIMITER DELAY LINE OPTION

Audio + Design has unveiled their D60 Stereo Feedforward Limiter Delay Line Option, for use with the F601 limiter line. The D60, priced at \$540, consists of a delay path and a master control VCA providing control voltage for the limiter, and eliminates clipping problems when used with the F601.

Circle #089 on Reader Service Card

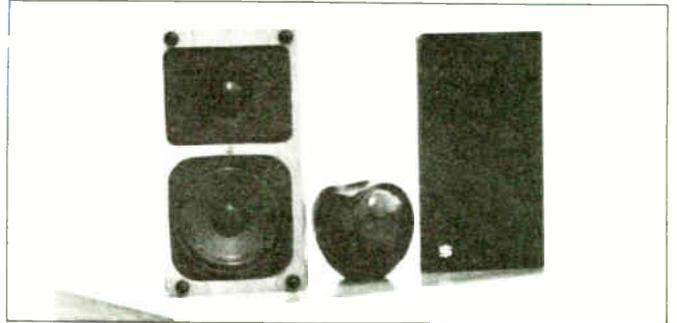
LIFE PLUS™ AUDIO HEADS

Minneapolis Magnetics, Inc., a manufacturer of high quality replacement tape heads for professional audio broadcast equipment, announces the introduction of Life Plus record, playback and erase heads.

According to MMI, the new tape head design utilizes laminate and material structures which substantially increase the life and the electrical performance of their

magnetic heads. Head core losses are negligible from 0-25 kHz, thus requiring less corrective equalization. The Life Plus head is designed for retrofit installation, without need of additional kits.

Circle #090 on Reader Service Card



DL SYSTEMS' ULTRA MINIATURE LOUDSPEAKER SYSTEM

DL Systems has announced their new DLS-1, an ultra miniature monitor loudspeaker system of high efficiency with high power handling capabilities. DLS-1s can deliver 100 dB SPL at one meter with peaks in excess of 113 dB.

The DLS-1 is a 3-way stereo speaker system consisting of two 2-way desktop speakers and one subwoofer containing two low frequency drivers. The entire 3-way system displaces only 0.54 cubic feet and weighs in at 27.5 pounds. Usable frequency range of the DLS-1 is 60 Hz to 18 kHz and sensitivity is 87 dB/1W/1M. Power amplifiers from 20 to 500 watts RMS per channel may be used with excellent performance. Prices range from \$525 for ash and oak to \$1,600 for the complete system in solid rosewood.

Circle #091 on Reader Service Card

COME WITH US TO AES!

This October, in conjunction with the 74th Convention of the Audio Engineering Society in New York City, MIX will publish the biggest Show Issue in its history! Among many other features, our AES Special Issue will include:

- AES/New Products Directory for 1984.
- Special Report on equipment maintenance and modifications.
- Digital Recording Update.
- MIX Spotlight on Audio for Video.

Don't miss this opportunity to be part of the Industry's biggest annual event, in its leading magazine—MIX!

Deadline for space reservations: August 7th
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Call (415) 843-7901 for more information today!

DOCTOR CLICK

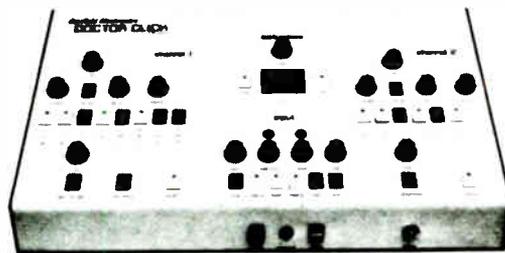
The Doctor Click Rhythm Controller makes it possible for the first time to synchronize the world of sequencer, drum machine, synthesizer composition with any one of the systems on the market or combinations of the systems on the market. Furthermore, the Doctor Click will cause sequencers, drum machines and synthesizers to play in time with a human drummer. It will also read click tracks and sync codes. The internal metronome provides both beats per minute and frames per beat calibrations.

THE DOCTOR CLICK RHYTHM CONTROLLER BREAKS THE BRAND BARRIER

SEQUENCERS		DRUM MACHINES		SYNTHESIZERS*	
DSX	Bass Line TB303	Linn LM-1	CR5000	Prophet 5	Modular Moog Juno 6
Prophet 10	CSQ600	LinnDrum	CR8000	Prophet 10	OBX Juno 60
Polysequencer	SH101	DMX	CR68	Prophet 600	OBXa Polysix
Pro One	Emulator	Drumulator	CR78	Prophet T8	OB8 Poly 61
Model 800	Fairlight	TR808	KPR-77	Minimoog	JP4 Voyetra-8
Microcomposer MC4	Synclavier	Drumatics TR606		Memorymoog	JP8
Chroma					

*(VCA, VCF, VCO, Gate, Trigger or Arpeggiator as provided on each unit.)

Measures
17½" x 11" x 4½" x 2½".
Weight is 8 pounds.



Warranty is one year.
Call or write for location
of your nearest dealer

ONE DOCTOR CLICK CONTAINS ALL OF THESE PROBLEM SOLVING DEVICES

4 Fixed Clock Outputs
2 Variable Clock Outputs
2 Metronomes
2 FSK Sync Code Decoders
(Covers Linn, Oberheim, Roland)

2 Rhythm Envelopes
Pulse Counter
Pulse Shaper
Gate Output

Headphone/Speaker Output
Roland 5 Pin DIN Sync Output
External Clock Input
Footswitch Controls

The brand to brand problems of timebase, voltage level and polarity are solved by the Doctor Click's diverse output capability.

The ability of the Doctor Click to connect to many units at once coupled with its footswitch control capability makes it ideal for multiple sequencer, drum machine, synthesizer live applications.

Since the Doctor Click metronome produces beats per minute and frames per beat calibrations it is always convenient to get just the tempo you need. It is even possible to get fractional tempos such as 118½ beats per minute.

The Doctor Click's two independent rhythm actuated envelopes allow VCF, VCA and VCO parameters of synthesizers to be modulated in 32 rhythm values ranging from four measure cycle to 64th note triplet with variable attack, decay, sustain and amount. This eliminates the problem of rhythmic drift when using a conventional LFO.

The ability of the Doctor Click to transform metronome click tracks into timebase clocks allows frames per beat music film work to be

done with virtually any sequencer, drum machine or synthesizer.

The ability of the Doctor Click to read live tracks allows sequencers, drum machines and synthesizers to play in sync with the varying tempos of a human drummer or a built click track.

The ability of the Doctor Click to accept external clocking or either of the types of FSK sync to tape codes allows sequencers, drum machines and synthesizers to be synced to any existing track.

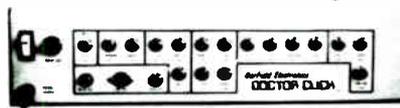
The pulse shaper circuit turns a pulse from an instrument into a trigger waveform allowing synthesizers to sync to a drum fill.

The headphone output allows click tracks in multiples of the tempo to be generated and is capable of driving a speaker.

The pulse counter can be used to program sequencers in higher timebases, quickly combining greater rhythmic resolution with step programming accuracy.

The step programming switch can be used to step program sequencers that normally do not have this capability.

Used on tracks by Brian Banks, Tony Basil, John Berkman, Michael Boddicker, Kim Carnes, Suzanne Ciani, Joe Conlan, Chris Cross, Bill Cuomo, Jim Cypher, Paul Delph, Barry DeVorzon, Don Felder, Paul Fox, Dominic Frontier, Terry Fryer, Alby Galuten, Lou Garisto, Herbie Hancock, Johnny Harris, Hawk, James Horner, Thelma Houston, Michael Jackson, Quincy Jones, Jeffrey Kawalek, Gordon Lightfoot, Jerry Lilledahl, Johnny Mandel, Manhattan Transfer, Paul Marcus, Jason Miles, NBC Movie of the Week, Randy Newman, Keith Olsen, Paramount, Joel Peskin, Oscar Peterson, Greg Phillingaines, Jean-Luc Ponté, Steve Porcaro, Phil Ramone, Lee Ritenour, Steve Schaeffer, Mike Sembello, Mark Shifman, John Steinhoff, Sound Arts, Ian Underwood, Universal, Donna Washington, Stevie Winwood, Pia Zadora.



GARFIELD ELECTRONICS P.O.B. 1941, BURBANK, CA 91507 (213) 840-8939

LIZARD ROCK

At The Plant

by David Gans

The installation of Lizard Rock's 24-track studio equipment in Sausalito's Plant (formerly the Record Plant) is a classic marriage of convenience, even though Lizard Rock's proprietors live 400 miles away in southern California. "It gives The Plant a third room, and it gives us a good working relationship with professional recording people," explains Lizard Rock partner Keith Knudsen. "Our equipment is better off for it, and so are we - and so is The Plant."

Lizard Rock began as a partnership between former Doobie Brothers' drummer Knudsen and guitarist/stringsman John McFee, who have been friends since long before McFee joined the Doobies in 1979 (Knudsen was a Doobie from 1973 until the band's retirement in 1982). "The original Lizard Rock was an 8-track board, rewired and fixed up for 16," says Knudsen. "We bought the 16-track machine that the Doobies did 'Listen to the Music' on from Warner Bros." The equipment was eventually installed in a room above the garage at Knudsen's house in the hills of Marin County north of Sausalito, which he sold last year before moving to Los Angeles.

"Keith and I took the step of getting ready for 24-track by buying a Neotek console," McFee explains. "Then Tim Goodman came along and joined our crowd with his 3M 24-track. Eventually, we ended up with two studios' worth of stuff."

Goodman's first album, *Footsteps*, was produced by McFee, and Knudsen and several other Doobies

played on the tracks. "These guys were on the road a lot with the Doobies at the time. When they decided to move up to 24 tracks and pulled out the 16-track stuff, I said, 'How about letting me take it home? I'll maintain it for you.' That's how the 'Listen to the Music' machine ended up in my living room." The 16-track half of Lizard Rock will eventually be installed in the studio McFee is build-

(l to r) Tim Goodman, Keith Knudsen, John McFee, Paul Broucek



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ing at his home north of Los Angeles.



oving Lizard Rock into The Plant and creating Studio C was the brainstorm of Laurie Necochea, The Plant's owner and a friend of Goodman, Knudsen and McFee. "She said, 'I've got this space I'm not using, and you've got equipment that you don't use half the time,'" McFee recalls. "She suggested we put it together and make something out of it."

"We had a lot of space going to waste," notes Paul Broucek, General Manager of The Plant. "What is now

Studio C was at one time 'The Pit,' a room with quite a lot of history to it. Gary Kellgren [the late co-founder of The Record Plant] and Sly Stone came up with this revolutionary idea whereby the engineer could be an integral part of the creative process: they built a sunken control room right in the middle of the studio.

"A lot of Sly's post-Family Stone albums were recorded there, and Van Morrison did some work in that room; Bill Wyman made his first solo album, *Monkey Grip*, in The Pit," Broucek adds. "About four years ago the pit was filled in and the studio was converted into a pre-production rehearsal room. It was a great idea, but

not very successful: it turned out to be cheaper for the producer to go to where the band was for rehearsals than to bring everyone to the studio before they were ready to record."

Construction on Studio C began around the first of this year, under the supervision of contractor Craig Sams. "He's worked on several studios in the Bay Area, but this is his first shot as 'fearless leader,'" says Broucek. "He's done a great job."

"Sly Stone had a bedroom behind The Pit, famous for its mouth-shaped bed. We took that out, opened up the space and built a new control room from the ground up." The design of Studio C is based on Studios A and B, which are virtual mirror-images, built by Tom Hidley. "We measured the other rooms and scaled it down to what we had to work with in C," says Broucek.



major benefit to the owners of Lizard Rock is the care their machinery will get at The Plant. "If we were in a building in LA, say, we wouldn't be able to have a maintenance guy come in to make sure everything's working right every day," notes Goodman.

Broucek adds, "The association with a state-of-the-art recording complex means they have the services of an excellent maintenance staff and engineers - and the other things that come with that: security, phones answered, a relationship with other projects that are going on here, and so on."

But why so far from home? "When an artist has a studio in his home, it's often hard to focus on the work," Broucek explains, "because it's *always* available. This arrangement requires a bit of discipline, because Keith, John and Tim will have to commit to a certain number of days ahead of time."

Lizard Rock's proprietors will have preferential treatment in the booking of Studio C, but Knudsen hastens to add that they'll still have to book the room in advance. "I know what it's like to be elbowed out of a studio," he says, "because it's been done many times to me. So whether it's a new band, an album projects or a garage band or whatever, we won't be pre-empting them."

"We'll be able to do things in an environment we're comfortable in," adds McFee. "At the same time, our equipment won't be just sitting there. Our investment will be utilized even when we're not here, so everybody comes out ahead."

"It's to The Plant's benefit to make it work for these guys, and it's to their benefit, too," says Broucek. "We're all going to get what we need out of it—and it's really easy." ■

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Avant Garde Mixing Techniques

by Ed Bogus

The poet Ezra Pound was also a music composer who wrote a whole opera. True to the 20th century avant garde, it was "chance" music - notes were chosen by criteria external to traditional music, such as the number of letters in the words being sung.

When I abandoned "serious" music to go into what sells, I thought I had bid goodbye to such experimental techniques. Not so.

Once the records that I produced began to average around a hundred thousand (that is, 100 + 1000) I sensibly went into film, TV, and commercials. And there I was reunited with the avant garde - not in the music, but in the mix.

Without mentioning any names (I would like to keep the job if possible!) I would like to catalog the modern mixing techniques I have learned in the past 10 years. Maybe it will inspire even more far-reaching experiments. Perhaps someday we will be able to mix soundtracks without listening to them at all!

I. The Steady-State Mix

For years I scored a certain well-known TV series. In all those years, they never liked my mix. "Too much drum," they would say about one show. So I would drop the drums. "Too much bass." Drop the bass. "Too much guitar," and so on.

Finally I cracked the code. The series was heavy on dialogue and effects. The mixer would set the music level under them and leave it there 95% of the time. So unless everything was absolutely even at low levels, something would poke out. So I mixed at whisper level. "Good mix," they said.

II. The Sweetener Mix



San Francisco composer and arranger Ed Bogus

I was scoring an industrial film. In one long sequence, the director wanted a rhythmic piece, the producer wanted sweet strings. After the first mix, the producer wanted a remix of that sequence, and kept pushing the whole-note string sweetener until the rhythm was inaudible. "Good mix," he said. And it went in the film that way. The producer usually wins.

III. The Captain of the Ship Mix

Clients who don't get in the studio much, particularly the younger ones, may *enjoy* sitting there saying "more bass." There's nothing wrong with that, of course, but in order to justify the remixes they have to find a reason. That is why, on one long afternoon, we emerged with a mix in which the balance turned around every other bar. It's a good idea on days like this to keep the first mix on tape somewhere.

IV. The Missing Word Mix

One morning I was mixing a commercial. The client wasn't hearing a particular word, so we kept pushing the voice. We kept pushing it to the point that what had begun as a show tune with tap dancers, singers, and pit band became a show tune with singers and tap dancers - NO MUSIC. The client thought it was a good mix.

V. The Split-Second Mix

I was doing a commercial. The producer had a stop-watch and I was forced to fade, punch, push and scrape

things unnaturally to meet his internal timings. One spot ended up being *sped up* at the head and gradually slowed down toward the end to meet the time considerations.

These days I do everything I can to score TV spots to picture using a *synchronizer*.

VI. The Telephone Mix

Very often the head guy calls up to hear the mix. Now you must make adjustments based on what can be heard over the telephone. So you blast the melody. Good mix.

VII. The Picky Mix

Sometimes little points get so much attention that major errors slip by unnoticed. The horns get left out, the echo is forgotten, etc.

I get a headache every time I remember one of these.

But enough complaining.

We producers learn avant-garde techniques of our own, to confuse and confound those we work for and get *our* mix through, despite what *they* want. These are mostly PLAYBACK techniques, and I offer a few modest examples.

I. The Client Playback

Quite simply stated, too loud or too soft. It is important to keep a straight face whilst the clients either cover their ears or strain to listen.

—page 88

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—from page 87, *Mixing Techniques*

II. The Modern Technology Playback

The trick here is to focus attention on some outboard gadget such as a vocal stressor or vocoder. Keep talking about some inaudible subtlety and you may sneak the mix by.

III. The Telephone Playback

This requires an accomplice. Have somebody call the client just as the playback starts and keep it running. Sometimes you get away with it.

IV. The Chorus Line Playback

Ask all the musicians and singers to hang around. At the crucial moment, they appear to "hear the mix," backslapping, smiling, and waving victory symbols.

Wait! What am I doing, revealing my secrets like this? I'll be ruined! MIX, don't publish this!

As a producer/composer, Ed Bogus has worked with such artists as Country Joe and the Fish, Big Brother and the Holding Company, Bob Weir, and Don McLean, and has scored many films including "Fritz the Cat," "Heavy Traffic" and "Payday." In his spare time he reportedly attempts to solve Fermat's last theorem.

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CATCH IT IN THE MIX!

by Josef Woodard

The phenomenon of the group Weather Report is one bound for the annals of jazz history. An eclectic unit fed by myriad ethnic strains and rhythms as much as by jazz tradition, Weather Report has, in the past several years, broken with the concept of jazz vows of poverty. Their unprecedented, global audience—evidenced through poll sweeps, concert sellouts and pop megastar-level record sales—might lead the wizened reader to smell compromise (read: sellout).

Yet Weather Report remains remarkably unspoiled by success. You can sense it on the new album, *Procession*, which, despite its wealth of charging rhythms, enveloping synthesizer parts and even vocal appearances by Manhattan Transfer, has the central enigma found on the debut album in 1971. Reports of their unbending resolve are further confirmed in talking to Josef Zawinul, the hardy Austrian keyboardist who founded the group with saxophone legend Wayne Shorter. In discussing his stellar group, Zawinul takes on the stance of a heavyweight—full of an imposing self-confidence. And, judging from his track record, Zawinul has the musical might to support all claims.

Weaned on American jazz, the indigenous music of Austria and whatever other musical fiber he encountered, Zawinul emigrated to America

Josef Zawinul

DOING SOMETHING ABOUT THE

Weather

in 1959 to attend Berklee and play with the Maynard Ferguson band. After a stint with Dinah Washington, Zawinul landed the keyboard chair with Cannonball Adderly, a relationship that proved fruitful throughout the '60s. It was with Adderly that Zawinul introduced his classic R&B tune "Mercy, Mercy, Mercy," and honed his distinctive touch on electric piano (then novel in jazz). He was in on the ground floor of Miles Davis' foray into rock territory, penning "In a Silent Way" and other Miles stock material and supplying much of the harmonic heat on *Bitches Brew*. Out of the Miles connection, Zawinul and Shorter forged Weather Report and became a lasting cornerstone of the meteoric fusion movement of the '70s

(fusion, a term Zawinul shrugs off as so much semantic helium).

The project seemed blessed from the start; the material, both propulsive and probing—like music that takes shape before our ears—won a faithful following that blew skyward with the release of *Heavy Weather* (1977). The catalyst was the infectious tune "Birdland," later covered by Manhattan Transfer (I could have sworn I heard a generic version in the elevator yesterday). The next year's *Mr. Gone* rallied critical dissension from those who felt Zawinul's layered synthesizers muffled Shorter's poignant sax.

But *Procession*—the twelfth record in as many years together—is a splendid work that spotlights, among other things, Zawinul's innately musical use of synthesizers. A premier synthesist as well as a stylistic maverick, Zawinul is one of the handful of musicians who can deploy the cutting edge of musical electronics as a sounding board from the heart, rather than as devices to satisfy a technological fetish. Listen to the radiant melodic creature that emerges out of the ancient swamp of synthesized drones opening the title cut. The album also introduces a fresh rhythm section, with percussionist Jose Rossy, drummer Omar Hakim and bassist Victor Bailey (the new bass-drum polarity seems a reversal of the old guard; Hakim is more expansive, generally, than Peter Erskine was, while Bailey is more reserved than his forebearer Jaco Pastorius).

Zawinul has gained a carnivorous reputation with journalists, often ricocheting back their skepticism with venom. On the phone this Monday morning toward the end of a long tour, though, Zawinul was generally open and willing to shed light on methods and philosophies. Of course, Zawinul saves his truest colors, his rugged eloquence, for the music itself. And for many of us, that's the most persuasive power life has to offer.



Weather Report captured live: (left to right) Victor Bailey, Wayne Shorter, Omar Hakim, Josef Zawinul, Jose Rossy.

Mix: Is the live experience integral to your musical process?

Zawinul: It's very important. You've got to play in front of people. It's like a fighter, you know; he cannot always be in the gym.

Mix: Does it help your writing much? Are you inspired to write on the road?

Zawinul: No. I hardly ever write when I'm on the road. There's just too much concentration to get the music which has already been written down correctly, you know. And we need a lot of time to rest. When you play every night, you do need rest.

Mix: I was impressed with your tour of about 2 years ago, in which you worked in some multi-media effects – slides coinciding with music. Do you plan to do anything more along those lines?

Zawinul: In the future, when we get a little more off the ground. We had a little bad luck with our last record because we didn't travel with it, you know, and it came out at a funny time, so it didn't materialize. But eventually . . . for instance, now, traveling with this record, the record is selling incredibly. Within 3 weeks, it jumped

to number 2 on the jazz charts. Last week it was 32, this week it's number 2. In the pop charts it's in the top 100. Those are the things that are actually important to us right now – to make what you call sophisticated, great music and still sell records, and eventually we are able to stretch out and put that extra money or whatever into being able to entertain better.

Mix: Wasn't it the album *Heavy Weather* that gave the group the big push?

Zawinul: Yeah. That was the last record, by the way, that we traveled with. We went on tour when the record was released and all that, and I believe that was one of the main reasons it became such a big record.

Mix: Do you feel sometimes that a tune, such as "Birdland" in your case, sort of haunts you, in that it's the most popular, the most requested in a crossover market?

Zawinul: I sure would like to have another one, you know. Another tune, but of that strength, I would love to have another one.

Mix: So you still feel strongly about it?

Zawinul: Sure, it's a great tune. That

is what we are into. If we can make complex and fine music to be a success, that's a success not only for us, but for the whole music business.

Mix: Do you feel any pressures imposed by the status of being the most popular jazz group?

Zawinul: No. None at all.

Mix: You've got one of the unique writing styles on the jazz scene. It has a spontaneity that seems to write itself in a way.

Zawinul: I can tell you very quickly what I'm doing. All my music is improvised. I put it on tape and just play. I don't know what it is, I just play. I find some sounds or whatever, maybe just an acoustic piano, anything. When I fool around with the sound I have the tape recorder on and I play. I might make 5 or 6 cassettes in one day, of all kinds of different things. Whatever just comes into my head. And then I write it down note by note without changing anything, and I edit. If there's one section of the improvisation which I feel could be real good for the band to play, I write it down note for note without changing anything. That's why it sounds so natural. It's all written improvisations.

Mix: Have you always worked that way?

Zawinul: Well, pretty much, yeah. Since we've had tape recorders, you know. Before that I had to do some real fast writing.

Mix: Your first big tune was "Mercy, Mercy, Mercy." Have you written any soul tunes since then?

Zawinul: I write a lot of soul tunes, you know. I've got 2500 cassettes full of music I can use. So, I have a lot of soul tunes; I've got all kinds. It's just the way it feels, you know.

Mix: How much time do you spend writing at home?

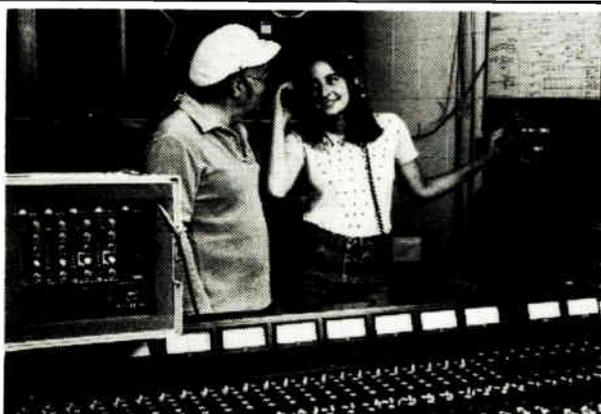
Zawinul: Well, like I said before, the composing part doesn't take any time – just the time it takes to play a tune. Then the copying down note for note. That takes some work.

Mix: Have you considered one of the new systems that will notate music?

Zawinul: You better believe it [laughs]. But then I'll tell you something. It's very important to be able to analyze your own music, you know. There is great fun for me to write this stuff down. I really listen to it and then I look at the music. It's kind of amazing how the stuff gets there. I wonder sometimes how it gets there – a perfect composition without even thinking



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about it. And that's nice, it's a good feeling. That makes you believe in yourself. I'm not religious, but it does make me trust in some creative power up there somewhere higher than ourselves.

Mix: Do you listen to much music?

Zawinul: Hardly any.

Mix: No pop music, funk . . .

Zawinul: No. My sons listen to it, so I get glimpses. I have 3 sons and they all listen to music. It's chaotic sometimes - from each room something else coming out. But that's fine.

Mix: What's your impression of the music that you do hear?

Zawinul: I don't like it, most of it. But there are some things out there. I don't on the whole . . . there's very few things, but here and there you hear a tune that's kind of nice.

Mix: Who did you listen to in your early years?

Zawinul: Oh, I listened to quite a good amount of music. That's probably why I don't listen to music any more. Louis Armstrong was the most incredible melody player. I listened a lot to Billie Holiday. I listened to Charlie Parker day and night.

Mix: Did you listen to Monk much?

Zawinul: A lot, 'cause Monk was a personal friend of mine. I love Thelonious Monk's music and him as a human being - he was a wonderful human being. The guys I played with, man . . . Cannonball Adderly was one of the greatest musicians ever on this planet. I spent a lot of time listening to records, and after I kind of got my own thing together, I stopped listening to records. I have a lot of records at home right now. Bruce Lundvall [head of Musician Records] just sent Wayne and me several selections from his new company, some real beautiful reissues of Charlie Parker's music. I haven't had a chance to listen to them; that's one thing I'm going to listen to. And unreleased Clifford Brown things.

Mix: Some of your rhythms are vaguely Afro-Cuban.

Zawinul: I love Africa, man. I love the Africans.

Mix: And yet there are Austrian colors in there.

Zawinul: Now you're talking. That was always my master plan, to have myself, my thing, my blood and my bone . . . I don't ever listen to African

music, but I remember from many years ago, African guys came to Austria, to the club where I was playing, talking and singing some stuff. It was amazing. I've always liked the Africans. They have total freedom in playing, and yet they have the organization. There's always a beautiful melody or chant on top of it and the rhythms are organized. Also in Cuba. It doesn't influence me in that I would want to take the rhythm of this thing. I would never want to do that. But it just probably has a subconscious influence, too. I couldn't even figure out what these guys in Cuba were playing, they were playing so many difficult things.

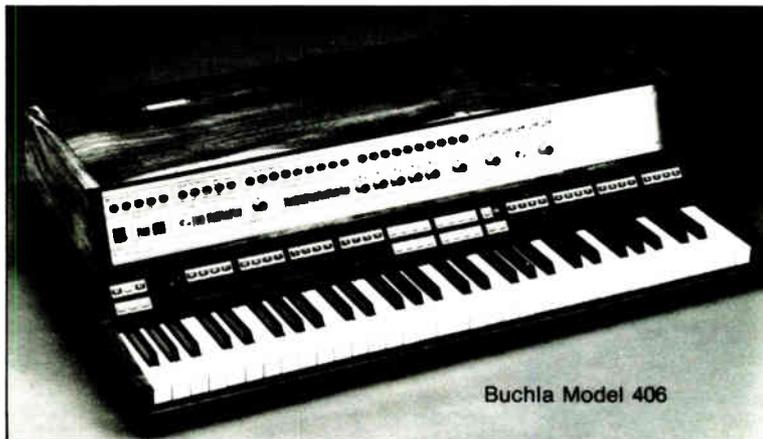
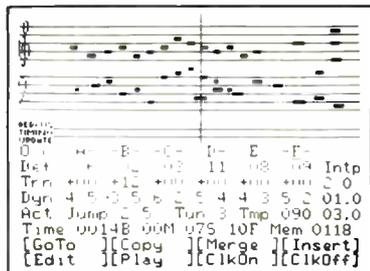
Mix: On the new album, the song "Two Lines" has a winding melody that takes a while in stating itself. How did that come about?

Zawinul: Well, I put that drum rhythm together and then improvised on top of it and that's it. It just falls rhythmically very funny because it's a 10-bar rhythm. But I put the rhythm down with the Linn Drum machine first and then let the tape run and recorded on top of it.

Mix: You've always kept on top of synthesizer technology. What is its

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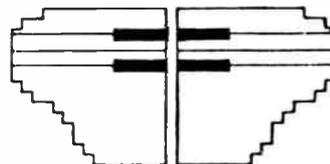
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current state; what kind of equipment are you using now?

Zawinul: I have a Chroma. I have an Emulator, which is incredible. You know what an Emulator can do? It's a digital synthesizer, and you can program any sound in it and it will duplicate it. I have a lot of instruments at home which I have collected over the years, that my wife bought me, that people had bought me - I've got hundreds of instruments at home. Different string instruments and all that. And I started, just before the tour started—I didn't get the Emulator but a week before the tour started—and put in about 20 or 30 of those instruments. And it's incredible; it's exactly like I would have them there with me, you know.

Mix: When did your love affair with synthesizers begin?

Zawinul: I was interested in electronic music all my life. In 1944 I went to school in Czechoslovakia, in the last year of the war. There was an organ professor there, and I was fascinated with the pipe organ. This guy was modern; he could really play some fantastic stuff on the pipe organ. He had different stops, not just all that whining stuff. He made real incredible sounds. And I was watching him. Then after the war, I played for the American soldiers. In a church in Austria, they had a Hammond B3 organ and I was always messing with it.

I was an accordion player originally. Many, many years ago I had a pickup for the accordion to get something different going. To me the accordion was the original synthesizer.

Mix: So that was the instrument you started on?

Zawinul: Right. I always enjoyed this instrument. As a matter of fact, on one of the new tunes, I play a little accordion solo.

Mix: The concertina bit?

Zawinul: No, Jose plays the concertina melody on the tango, "Plaza Real," but there's one part, where Wayne is whistling; I play some accordion interludes. That's an accordion Jaco bought me for my 49th birthday. He bought me a gigantic Italian accordion as a birthday present, and it's a great instrument so I played a little bit on the last album.

Mix: When *Mr. Gone* came out, you got some critical flack. How do you respond to the whole synthesizer vs. jazz issue? Do you feel the two are completely compatible?

Zawinul: Well, the way I use synthesizers, anyhow, it's all very naturalistic sounding stuff. It is not anything all that industrial sounding. I find my

own trumpet sounds and my own clarinet sounds, whatever, you see. They are all natural sounds; they are just different a little bit. But I have exact sounds, too. An exact clarinet sound, bassoon sound or whatever, you know. So, I think it's all bullshit. I mean it has nothing to do with music. You can play something on the fucking suitcase, you know, and if it is good music or good rhythm, it is always gonna be valid.

Now I have a total acoustic piano sound. I have Wayne's saxophone sound in there. It's scary because I can play with Wayne's tone, but even more perfect. Why? Because he's giving me his perfect note, and every other note on that keyboard is just as perfect as this. There's no saxophone player in the world who has every note as perfect. It's just the nature of the instrument. You understand what I'm saying? You're always gonna find people who don't like this or don't like that, and that's healthy. I thought the whole *Mr. Gone* thing was a healthy thing. I still believe it's a great record.

Mix: You've produced the past several records...

Zawinul: I produced all the records.

Mix: Is it just that you haven't found anybody with your overview, or do you just like the control?

Zawinul: The only producer of that band can be me, and with Wayne's help. When Jaco was in the band he helped me. But the main thing I always did because 90% is my music and that's what a production is - it's in the music.

Mix: How do you feel about the new band?

Zawinul: I like it a lot.

Mix: The chemistry is different. Is this going to affect the way you write?

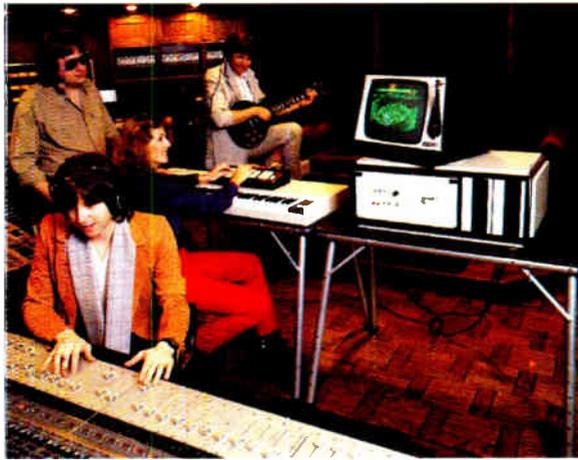
Zawinul: Well, it has to. But when I sit at home and do my thing, it doesn't affect me. I have my drum machine. Sometimes I start with a rhythm line of something. I write down the rhythms for the guys to play. Like "Two Lines" is totally written on the drum machine. And "Where the Moon Goes" is a written-down rhythm. I'm doing more of that on the new music you're going to hear.

Mix: Where do you feel the new music going? What's the direction?

Zawinul: Oh, I don't know. It's just another step further. Getting older. Getting better.

Mix: You've been compared to Duke Ellington in that he wrote specifically

—page 99



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PHOTO: DAVID GANS

Catero Records: Building a Strong Catalog

Major record labels are cutting back drastically on their operations; independent distributors are closing their doors; record retailers are looking to computer software and video-game cartridges for revenue. So why in the world would Fred Catero want to risk his personal assets by starting a record company now?

"This is the best time," asserts

the veteran engineer and producer. "I've been doing this for other people for 34 years, and the opportunity to do it for myself won't come again."

The reason the big labels are floundering, says Catero, is that "they have put their focus on the teenage market *exclusively* since the early '60s. Before that, they had big catalogs with a cross section of styles that appealed to a broad spectrum of the public. Artists like Lawrence Welk always paid for themselves eventually; records had longer commercial life-spans back then."

Rock 'n' roll changed the record companies, starting in the early

—page 98

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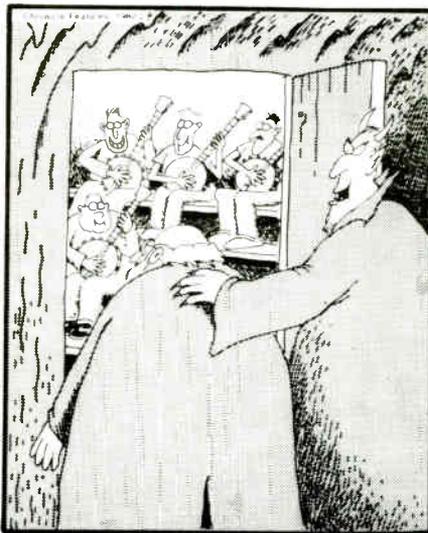
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THE FAR SIDE

By GARY LARSON



"Your room is right in here, Maestro"

Commentary CDs Raise Some Questions

David Haynes worked in the Audio division of Ampex Corporation for five years before moving over to the Video Research department. His work in audio includes development of Ampex's mastering digital delay (for which he holds the patent) and development of the ATR-800. An active AES member, Haynes is in charge of the Digital Measurement Techniques subcommittee on Multiple Signal Distortion in Audio Channels. He is also Chief Engineer for Bodacious Audio of Sausalito, CA.

The European AES show was held March 15-18 in Eindhoven, Holland, the home of Philips—co-developer, with Sony, of the digital Compact Disc. Haynes attended, and offers the following comments on some questions raised by the imminent entry of CDs into the consumer market.

PIRACY

Having had a CD player for many months now, I must say some fears about the new technology are just not valid, especially in reference to piracy. Many people are afraid that once the professional pirates get their hands on master quality material there will be no stopping them. Also, with the advent of relatively inexpensive digital recorders, home taping will expand to the point where the record companies will go down the tubes. One person from Philips told me one record company he knew of deliberately reduces the quality of the material released on CD so they have complete control over the highest quality master. If this is true, it must not be tolerated.

I don't think the professional pirates are concerned about quality. A clean vinyl disc provides them with a totally adequate source of material. I even know of one case where a legitimate record company lost a master tape and had to use a record to remaster a lacquer, and the results were perfectly acceptable. The point is the professional pirate concerns himself with distribution and secrecy, not quality.

HOME TAPING

Because digital recording makes possible infinite replication without deterioration of sound quality, it has been suggested that digital outputs shouldn't be allowed on CD players. With the obvious professional need for digital outputs and an AES-recommended format in the wings, most players will have digital output, and soon. There is no way to stop home taping by legal methods, but it is possible to create a situation where it is more desirable to buy the original music.

What about the positives the CD can offer us in terms of home taping and illegal duplication? It's not likely that people will be making CDs in their garages; at an approximate start-up cost of \$300,000-\$500,000 for a mastering facility and \$2-4 million for the replication facility, even the major labels aren't ready to jump in. By the time these costs come down significantly, our distribution system will probably have radically changed.

The home taping problem—which record companies say has cost them

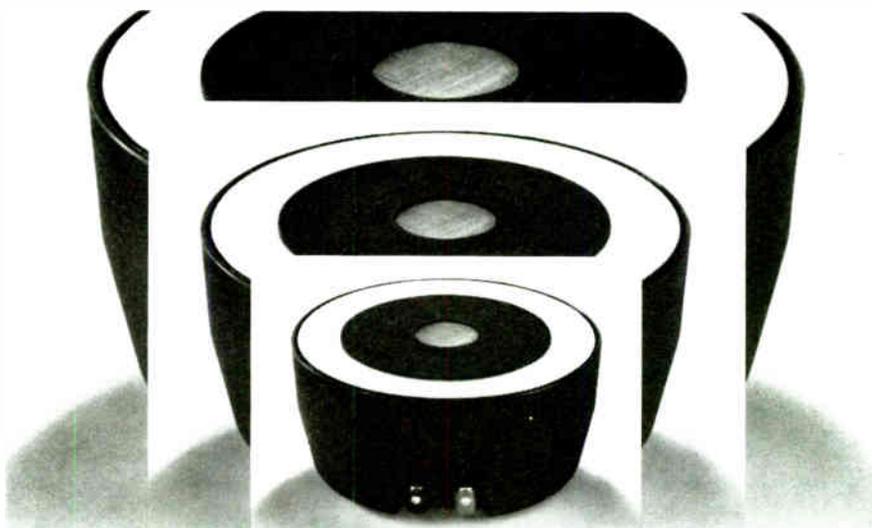
millions—is where I see the CD technology helping the most. The excellent quality of sound is most important to the recording/audiophile community, but to those other millions upon millions of people, it's features and convenience that sell. Over an hour of uninterrupted music, programmable music access and audible searching will win their approval; durability, immunity to fingerprints—and yes, even the rainbow light refraction from the disc—will help make this new format popular in the coming years, because tape just cannot compete with such convenience. I could

record other people's CDs on my Sony F1, but at \$13-\$15 for an hour of music, I would just as soon have my own disc, thank you.

THE FUTURE

If I may be permitted to logically daydream for a minute, the next step has to be easily recordable CDs. Many companies both in the U.S. and overseas have been working overtime on erasable optical storage technology. When it becomes available, this will be the cornerstone of the major distribu-

—page 96



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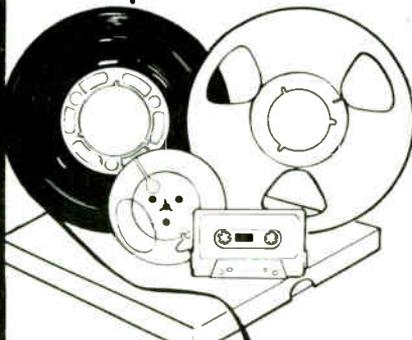
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MUSICNOTES

tion change people have been talking about for years. The theory goes, you call up the local "music store" (probably on your home computer) to request a selection; it responds with the next broadcast time, loads your recorder with a special code, and charges you appropriately if the handshake and transmission are successful. The broadcast will be digital and include subcodes so the disc will have all the necessary information such as song titles, length of cuts, etc. Since it is done digitally and decoded with VLSI chips, the sender will have complete control and

traceability of the information. Of course, once it's analog again anyone can re-record it, but they won't have the subcodes! I feel this is a convenience people will insist on.

These new technologies should help bring control of the music back to the artist. With the Compact Disc leading the way to renewed consumer spending and more money going to the people responsible for the music rather than to middle men, our industry may be in for the best economic times it's ever had.

—David Haynes



PHOTO: DAVID GANS

Rock 'n' Roll Tonite

Rock'n'Roll Tonite is a no-nonsense concert show airing late Friday and Saturday nights (and simulcast in stereo in most major markets) across the country. Taped in front of an audience at Pasadena's Perkins Palace (with audio recorded by the Record Plant remote), the show emphasizes live performance and eschews fancy video trickery and babbling hosts. Each 90-minute show features two or three bands plus a jam between some famous names. The first show, starring Billy Squier, was capped by dueling guitarists Jeff Beck and Les Paul, aided and abetted by the house ensemble, Mike Finnegan and the Right Band.

Pictured above (front row, left to right) are ex-Band members Richard Manuel and Rick Danko, joined by guitarist Blondie Chaplin, harmonica

champ Paul Butterfield and saxophonist Marty Grebb; (back row) keyboardists William "Smitty" Smith and Mike Finnegan, drummer Rick Jaeger. The jam was climaxed by the appearance of Band keyboardist Garth Hudson, playing accordion on "Shape I'm In."

Was (Not Was): Zengineering Explained

Cruising down Puritan St., on Detroit's near west side, on the way to Sound Suite Recording Studios, you'll pass a few churches, the Hines Rib Shack, and numerous party stores where patrons buy beer and potato chips through thick plexiglass partitions. It's the inner city of Detroit, teeming with energy, and inside an inconspicuous brown building on one of its corners Don Was is thoroughly absorbed in engineering one of the final



David Weiss (l.), Don Fagenson

sessions for the neo-tunk conglomer-
ation known as Was (Not Was).

Signed to Geffen Records in
October 1982, their first album on the
label, *Born to Laugh At Tornadoes*, is
due for release in August. Was has

spent six months on the project, writing
the music and engineering the sessions;
much of that time has been spent be-
tween midnight and dawn in this dark,
textured womb-like studio. On several
of the cuts he played all the instruments
and programmed the LinnDrum com-
puter, but the album still features the
talents of more than forty musicians, in-
cluding Doug (The Knack) Fieger, Mel
Torme and the Motor City's own Mitch
Ryder.

Was and his partner, lyricist
David Was, who currently lives in L.A.,
have been working together since they
were 13. "We always had tape record-
ers, and if we couldn't pick up girls, we
made tapes," Don explains. "We've
always been doing basically the same
thing, messing around with tapes, but
eventually we got to the point where
our technical skills came into line with
what the record companies thought was
commercial."

Their first record, a 12-inch
single with "Wheel Me Out" b/w "Hello
Operator... I Mean Dad... I Mean
Police... I Can't Even Remember Who
I Am," was released on ZE/Antilles in
October 1980. A startling blend of
snappy rhythms, hysterical guitar,

—page 98

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MUSIC NOTES

trumpet, eerie keyboards and tracks of eccentric vocals sporting lyrics of tangled logic, the disk found its place on the British pop charts while engendering a cult following in the States. Its success resulted in the July 1981 release of their first album, *Was (Not Was)*, with its popular cut, "Tell Me That I'm Dreaming."

Danny Heats, new music scout for Geffen Records, booked *Was (Not Was)* into New York City's Mudd Club, and was sufficiently impressed by the show to help persuade Geffen to sign the energetic, charismatic band. With its roster of superstars, some thought it strange that Geffen would be interested in the idiosyncratic likes of *Was (Not Was)*. "I think [the signing] was an accident," laughs Don. "I don't think they knew exactly what they were doing. I guess they wanted to add new blood."

Was seems pleased with the working relationship with Geffen. "The hardest thing about making *Born to Laugh at Tornadoes* was to reconcile what I thought their expectations would be with what we are really doing," he says. "It turned out that they have a very healthy attitude. They told us to take as long as we wanted and to make sure we did exactly what was needed to end up with the album we wanted. It took months for their philosophy to sink in."

"I just wasn't used to it. There were months of false starts. The only way was for us to do the best we could. I talk to the A & R person three times a day now, and I like the fact that they're keeping watch on us. I know that when the album comes out it'll get good care."

While recording, Was tries to adhere to what he calls the "science of zengineering." "The only way to engineer is not to engineer at all," he declares. "I try to make the process of taping as invisible as possible, and to do that I make some sacrifices. Occasionally I don't watch the levels, and if you turn the sound off you can hear the meters pegging in tempo."

In keeping with his low-key approach, Was likes to have the musicians close together while recording. The instruments are usually run direct, allowing him to expand upon an intimate beginning with a variety of techniques. "Sometimes I run those tracks back out through amps and re-record them," says Don. "The bass guitar sound is a composite made from the direct input and the re-recording of that through four amps."

Don Was has spent most of his life in Detroit, and feels that the Midwestern industrial capital has a strong impact on what he produces. "It's a real significant factor, in terms of roots," he explains. "There's a unique blend of influences here. On one hand you've got

rock and roll with the MC5 and Iggy, and on the other hand there's the whole Motown thing. When I grew up you could hear, even on pop radio, a sound that united the two, embodied most by Mitch Ryder. On top of that, this is a provincial area, free from the trendiness of New York or L.A. For lack of a trend, you create your own."

After the release of *Born to Laugh at Tornadoes*, Was will keep busy with more production chores, including the Geffen-backed recording of a Detroit band, the Buzztones, until *Was (Not Was)* hits the road in the fall for a tour that will take them around the U.S., the Europe and Japan.

"Our next album correlates to a film," Don notes. What's it about? "Well, in it David and I become the leaders of Red China . . ." he confesses, with a mischievous gleam in his eye.

—Susan Borey

—from page 94, Fred Catero

'60s. "Rock 'n' roll records sold phenomenal amounts in very short periods because kids had a lot of money and they were very fickle: they'd buy a record, listen to it over and over for a week or two, then they'd go buy another record," Catero explains. The labels began to depend on that fickleness—the heady feeling of quick profits—and eventually lost interest in their old catalog standbys, the steady, if unspectacular, sellers.

Recent years have seen the major labels fall victim to the youth-market fickleness they'd once counted upon, says Catero. "When kids discovered video games, they stopped buying all those albums," but by then the labels were staffed from the mailroom to the executive suite with teen-oriented people. "They're out of touch with the tastes and desires of the adult audience. It's going to take a while for them to rebuild their catalogs."

"Independent labels, not having massive corporate structures to support, can make records for less money—and start seeing profits earlier," Catero points out. "I'm going back to the old way, of building a reputation for consistency and excellence. Rather than cashing in on any one particular style, we'll release any and all kinds of good music—without regard to commerciality." Hence the motto of Catero Records: "If it's commercial, it's probably on the charts; if it's good, it's probably on Catero Records."

Catero hastens to explain that "that doesn't mean commercial records can't be good, and it doesn't mean that Catero Records can't be commercial. It just means that I don't listen for Top 40

potential - I listen for something that moves me. If it moves me, it'll probably move other people."

The first release on the new label is *Twelve Gates to the City*, a live recording by synthesist Don Lewis. "It may not get a vast amount of airplay, but it *will* sell," Catero insists. "LA doesn't know how to present someone like Don, but he obviously has the ability to sell records: he has a personal mailing list of over 5000 names, and he sold over two thousand cassettes at his gigs around San Francisco in 1982."

Other Catero releases will be chosen on the basis of their musical appeal - which isn't to say that Catero doesn't plan to make money for himself and the artists he records. He's just not going to let himself or them become slaves to some investment counselor's notion of what's marketable or musical, and he's seen to that by financing the label entirely on his own. "I don't want big money telling me what to do."

—David Gans

Product News

Mesa Engineering offers the D-180, a 200-watt bass rack with two channels (bass and guitar), switchable tone controls, adjustable effects patching, 3-speed fan, balanced 600-ohm output, all-tube design, etc. A six-band graphic equalizer is available as an option. The D-180 can be used in conjunction with Mesa's RoadReady enclosures, available with one or two EVM 15-L 15" drivers.

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Peterson's new Model 450 Strobe Tuner has an eight-octave range, accuracy to 1/3 of a cent, back-lighted dials, input and output jacks for in-line tuning, built-in condenser mike, etc., with a list price of \$349.

Circle #081 on Reader Service Card

Cerwin-Vega introduces two new two-way PA cabinets, both featuring "second-generation" compression drivers and new 15" high-power woofers. The V-29 is designed for acoustic instruments and vocal sound reinforcement, its compact size making it especially useful for touring. The V31X has a front horn loaded 15" driver in a vented enclosure tuned to 50 Hz; the 1" compression driver (from 1 kHz to over 15 kHz) has a self-resetting relay to protect against inadvertent overpowering.

Circle #082 on Reader Service Card

Latin Percussion offers two new products this spring. Wooden timbales in 14" and 15" diameter, stand-

ard-depth shells, are made of 10-ply maple and the same hardware as used on their Tito Puente model. Wood shells add warmth to the sound, both when hit on the head and when struck on the side (cascara). Timber Timbs are available in standard and tilting configurations.

Esoteric cowbells are "designed to please a changing taste in percussion sounds," according to an LP press release, with their livelier, brighter sound. "They were significantly field tested in important New York City Salsa arenas before design finalization," it says here, and the bells are unfinished "so as not to alter the much sought-after sound." Esoteric cowbells are available in five styles: Agogo, Cha Cha, Bongo (hand) cowbell, Timbale cowbell (heavy gauge), and Timbale cowbell (light gauge).

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Korg's MM-25 is a self-powered monitor amplifier designed for guitar, keyboard and line-level sources such as mixers, tape recorders and the slave outputs of amplifiers. It has a front loaded bass reflex speaker and a 25-watt amplifier; volume control; low and high equalization; a Function Selector with settings for Line, Keyboard Low, Keyboard High, Guitar, Guitar Distortion (for overdrive), and Microphone; input jacks for instrument and line level sources; a line output; and a pair of headphone jacks, one of which turns the speaker off for private listening. The unit is compact and features a built-in handle; it can be used for small PA applications, practice, and stage monitoring.

Circle #091 on Reader Service Card

Aquarian Accessories Corp. announces a new Hi-Energy Miking System for drums, cymbals and percus-

—from page 92, Zawinul

for the players in his band.

Zawinul: Yeah, that I don't actually do. I have so many tunes, I sometimes just take a tape, listen to it, and say, 'This would be a nice tune for this band.' Another piece would be nice for the New York Philharmonic.

Mix: Have you ever considered doing some kind of orchestrated album?

Zawinul: Yeah, I can do that, you know; it's just a matter of time. If you take your profession seriously, it takes so much to put in. To make one good record a year is a killer, and touring and being a family person and all, it takes something, you know. So, I have all this music already on tape.

sion instruments. The AMS160 microphone is specifically designed for close miking of drums and cymbals; specially designed microphone holders clamp onto bass drum hoops, snare and tom rims and cymbals - their shock-proof design providing ample isolation from the instruments themselves. The AMS60C (available in 3- and 6-channel models) is a power supply and dynamic range extender that eliminates the need for padding of the mikes.

Circle #092 on Reader Service Card



Kawai America introduces the new EP-608 Electric Upright Piano, with a 75-note keyboard and a Kawai Ultra-Responsive action with controllable keytouch. The back assembly is patterned after acoustic pianos; three piezoelectric pickups are mounted in the bridge for full harmonic and tonal response; active voicing (selectable on the front panel) comes in three settings -Mellow, Medium and Brilliant—and a phase-shift tremolo has adjustable speed and intensity. The whole thing weighs in at 139 pounds, comes with a self-contained case, and can be set up in about two minutes.

Circle #093 on Reader Service Card

It's just for me to maybe get a year where I don't tour and where I don't necessarily have to come up with a Weather Report record or whatever. I will be able to do that. It will be no problem. I have the music already, and there's always new music coming, too. So it's just a matter of time. I'm not in a hurry.

Mix: Do you suffer from writer's block? You seem to have an endless flow of ideas.

Zawinul: Well, hopefully.

Mix: Do you ever worry about it?

Zawinul: Never worry about it. The reason is: even if I don't ever write a tune again in my life, I've got enough to cover another life.



CARGO
Men At Work
 Columbia QC 38660

Produced and engineered by Peter McIan; recorded at A.A.V., Melbourne, Australia, and Paradise Studios, Sydney, Australia

Another helping of robust, good-natured rock'n'roll from Down Under – a little less heavy on the Oz-isms this time, but no less engaging. "Overkill" and "Dr. Heckyll & Mr. Live" are likely to enter the repertoire of bar-band America along with "Who Can It Be Now?" from the Men's first album, *Business As Usual*. ("Down Under" and "Be Good Johnny," also from the debut, might be a little too idiosyncratic for Americans to sing, but no such problem exists with *Cargo*.)

The thing Men At Work and other Australian bands such as Mental As Anything have going for them is their total lack of dogma, born of their remoteness from the trendiness and demographic stratification of the British and American scenes. Riffs, rhythms and textures from all sorts of styles are assimilated into their music, which is as spirited as Rockpile, as irresistible as The Police and as trivial as Wings.

That's what you get when you spend your dues-paying years playing long nights in front of roomfuls of beer-swilling Aussies: never mind the insights, you learn to be *entertaining!* What Men At Work's songs lack in depth, they more than make up for in engaging, high-grade musicality and just plain fun.

Peter McIan's production is solid, unspectacular and perfectly true to the nature of the band at hand. These songs have such life of their own that it's not necessary to gimmick them up in the studio. *Cargo* is groovy, tight and sly. Right, mate?

—David Gans

MALINALCO
Juanita y Nayo Ulloa
 Senda Records 1001
(distributed by Back Room Records)
Production and arrangements: Juanita and Nayo Ulloa; engineer: Robin Woodland; recorded at Melon Studio, San Francisco, California (side B was recorded live in stereo; side A was overdubbed)

The *quena* (or "flute of the Andes"), an ancient instrument that was once made out of human thigh bone, has long been a vital part of Latin American folk music. But until recently, when its eerie, breathy "voice" provided the haunting music for Peter Weir's *Picnic at Hanging Rock* and the PBS documentary *The Flight of the Condor*, it remained relatively undiscovered by North American musicians. Nayo Ulloa is considered Peru's foremost quena player for his rapid fingering technique and his ability to play in any key. Ulloa and his Mexican wife, Juanita, a gifted soprano and composer who also plays piano and percussion, have attempted to bring an original mix of Latin styles, classical and folkloric, to international attention.

Malinalco, the title of their debut LP on Senda Records, is the name of a small town in Mexico where pre-Columbian artifacts of the Aztec Indians are preserved, unused and hidden away from society. The mythic potential of such an image is brilliantly fulfilled in the Ulloas' unique sound. Juanita's Keith Jarrett-like piano runs chase Nayo's elusive quena in striking tempos underscored by Spanish guitar, *zamponas* (panpipes) and a variety of percussive instruments, most notably the *cajon* or box – an African instrument descendant in Peru from the days of slavery.



Side B of *Malinalco* is devoted to the two types of indigenous music which are the least known outside the country but which are the best loved by the Peruvian people: the highly rhythmic black coastal music and the urban or Lima *vals*. *Vals* is a blend of *altiplano* (the Andean Indian music featured on side A), black coastal, European classical, Spanish flamenco and more recently, jazz. It originated in Lima with the *mestizos*, a people of mixed ancestry and influences.

The Ulloas read together this broad tapestry of styles with their own distinct interpretations and dramatic flair, revealing even to the uninitiated *norteamericano* listener an extraordinary knowledge of and feeling for the music, be it the simple primitive melodies of the mountains or the denser, more complex rhythms from the coast.

—Laurel Taylor



METAL HEALTH
Quiet Riot
 Pasha BFZ 38443

Produced by Spencer Proffer; engineered by Duane Baron at The Pasha Music House, Hollywood

Until now, this Los Angeles hard rock band was best known as the group that spawned Randy Rhoads, the guitar hero whose presence made Ozzy Osbourne's career take off like a rabid bat but who was tragically killed in a plane crash before he could really show his stuff. Bassist Rudy Sarzo also left Quiet Riot to join Osbourne's band, but he rejoined as they were just entering the studio to record their first U.S. release (Quiet Riot had released two LPs on CBS/ Sony during Rhoads's tenure). Quiet Riot co-founder Kevin Dubrow and Sarzo recruited two of LA's most respected metal players, drummer Frankie Banali and guitarist Carlos Cavazo, to form the new and improved Quiet Riot; the vinyl result is *Metal Health*, possibly the strongest debut by an American heavy metal act since Van Halen.

Rather than drawing on the usual metallic musical influences—Zeppelin, Van Halen, AC/DC, Sabbath, etc.—Quiet Riot's inspiration is the raw, raunchy, lewd and obscene pop/metal of long-forgotten English rockers like Slade and Humble Pie. One of Slade's better teen anthems, "Cum On Feel the Noize" is given a rousing resurrection by Quiet Riot. Anthems are what this record is all about, with a bruising paean to head-banging, "Metal Health," a crunching call to chaos and craziness, "Let's Get Crazy," and the venerable Q.R. standby "Slick Black Cadillac."

Quiet Riot may be high on clean fun and craziness, but unfortunately originality is definitely *not* one of their calling cards. Most of the songs sound a bit too familiar for comfort, as the band tends to rely on stock chord changes and (when they're not making use of barroom humor) vapid lyrics. "Breathless," for example, has a pounding double-bass sluggo attack topped with lyrics like, "You leave me breathless, you take my breath away." *Metal Health* may not be as flashy as Van Halen's debut, but it's a great party album for insane rockers committed to crazed head-banging.

—Stu Simone

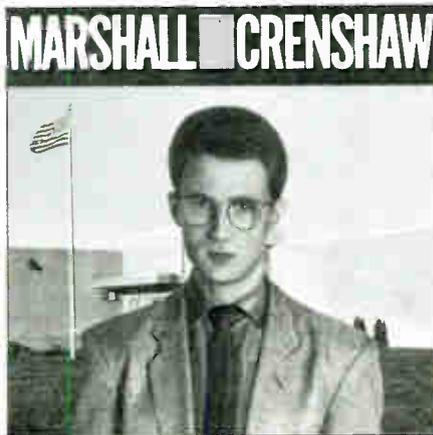
FIELD DAY
Marshall Crenshaw
 Warner Bros. 1 -23873

Produced by Steve Lillywhite for Jevrest, Ltd.; recorded at The Power Station, New York; engineered by Scott Litt, assisted by Garry Rindfuss and Jon Babich; originally mastered by Greg Calbi at Sterling Sound, New York

Despite a debut album last year which left millions (well, thousands) humming, Marshall Crenshaw still has an identity problem. The bespectacled guitarist-songwriter offers concise pop tunes in a Beatles/Buddy Holly mold, and since rock's evolution is currently stuck in the Metal Age, the man's concern with craft and pop perfection make him look, at best, a tad mild-mannered or outdated (it's fitting that in *Superman III* during a flashback to Clark Kent's school days in Smallville, he plays at a high school hop).

Well, on the basis of *Field Day*, there's an angle (gimmicky, it's true) that could be pushed. What the powers-that-be at Warner Bros. should do is sell Crenshaw's music as rock 'n' roll Chinese food. If that seems a trifle outrageous or silly, consider this: you've got a name (amended, of course, to Cren Shaw), that most famous quality of Chinese cooking (an hour later and you're hungry again - for more if you're a fan, and for something else if not) and, with almost every one

of *Field Day's* selections, a choice of one from Column A and one from Column B.

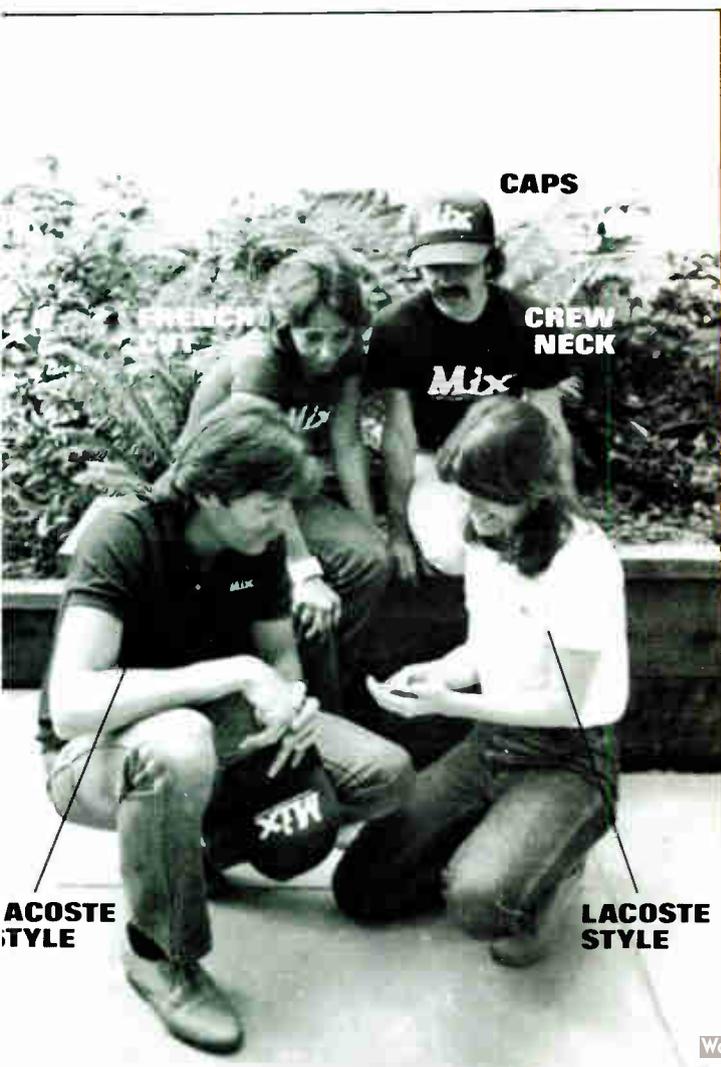


To clarify the above: in order to avoid the sophomore jinx, Crenshaw enlisted Steve Lillywhite to produce his record. Correctly assuming that Lillywhite acclaimed for his work with U2, XTC, Joan Armatrading and others, would bring something new to the mix, Crenshaw also made the effort to go a bit beyond the three-minute range of his previous compositions. The end result is intriguing, if not always satisfying.

The above-mentioned Columns A and B refer to the range of reactions possible here: critical and fan feedback could go from good to bad on most of the songs. Take "Whenever You're on My Mind," for instance: it's a bright, happy song, and would sound great on AM radio all summer; on the other hand, the lyric consists mainly of an endless repetition of the title phrase. "Our Town" has the most addictive chorus of Crenshaw's career, yet trundles on for far too long. "Monday Morning Rock" is less a song than a riff, but it's redeemed by its catchy groove. And the last three songs ("All I Know Right Now," a remake of the Jive Five's 1961 hit, "What Time Is It?," and "Hold It") are too similarly paced to be sequenced together; still, all three have the feeling of quiet summary and assessment, much like "Shake Me, Wake Me (When It's Over)," on *The Four Tops' Greatest Hits*, and end the record somewhere in the long cool of the evening.

Remembering that it's the critic's function to weigh in and make some judgment on a record whose ultimate worth is as elusive as is *Field Day's*, I'll recommend it to any fan of Marshall Crenshaw's art, and to anyone susceptible to the charms of simple songs sung and played with an almost reverential passion for and evocation of the sound of the era which inspired their creation

—Wayne King



TOPS

IN THE BUSINESS

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VIDEO NEWS

by Mia Amato

JOE DEA: Life after "Jeopardy"

If the video promo for "Jeopardy" created national stars out of the *Greg Kihn Band*, it has also made a starmaker out of *Joe Dea*, who directed the horror-wedding spoof. A song by a regional band, "Jeopardy" was plunged into heavy rotation on MTV on the strength of its visuals, and sold records. Lots of records. For Dea, the phone hasn't stopped ringing since the cut hit the national charts. Recent jobs for labels anxious for him to lend the magic touch to other regional acts include *John Butcher Axis'* "Life Takes a Life" for *Polygram*; *Krokus*, a latent heavy metal band signed to *Arista*, and *Shooting Star*, a *CBS/Epic* act big in the midwest. He's also signed as associate director for *Hot Spots*, the Somach-Nelson nightclub series airing on USA Network.

Dea, who once taught classes in Cheap Special Effects to San Francisco's video milieu, has always been a bit of a regional star himself. He was recently awarded a second local Emmy for the Kihn Band's video "Happy Man." His first Emmy was for "Three Triple Cheese, Side Order Fries," a manic classic produced on a miniscule budget for *Commander Cody*.

"Actually I'd like to get out of rock videos as soon as I can," says Dea. "I want to make feature films." The *Krokus* clip, "Screaming in the Night," is only his second filmed promo and was inspired by the Australian film *Road Warrior*. In the Dea style towards funky and elaborate

sets, it's got coffins, explosions, diners, trap doors, a pink Cadillac, blood and mayhem.

"I just try to fill it with as many images as I can," says Dea. "You have to watch the clip more than once to really get the whole idea of what's going on." In Dea's post-apocalypse world people stroll by with cameras and Sony Walkmans, and the tentacle from "Jeopardy" makes a cameo appearance. "The San Francisco Opera just happened to throw out a whole bunch of junk which fit *perfectly*," he adds.

The clip would have been even more spectacular if he hadn't run out of money for props "after the first day." Night scenes in the stockade had to be shot in the daytime; the crew improvised a tent around it by covering it with black garbage bags. ("We were suffocating.") In post production Dea keyed in smoke and altered the scenes so that the sky appears black and the grass magenta.

One of Dea's extraordinary talents is the ability to direct large numbers of extras and get the most from amateur as well as professional talent. Like "Jeopardy," the *Krokus* promo used about sixty extras who go through several costume changes. Careful camera framing and cutaways give it the cast-of-thousands look.

"*Krokus* is the best band I've ever worked with . . . and I've had some prima donnas and people who were just doing it because their manager made them. These guys were really into it. In fact, they played extras when they weren't in key scenes."

According to Dea, the storyline revolves around "two parallel uni-

verses," and was to be the first part of a two-part rock video. The second song, stripped down to a concert-style video, "is supposed to be the sequel, which picks up in the diner and explains the other world. If this one does well on MTV, the plan is I'll write three or four more in continuation, and it'll be a serial."

Shot for \$75,000, "Screaming in the Night" has the same rapid fire mix of the surreal and the familiar, and the homemade, slightly tacky charm reminiscent of the piano-playing French fries in "Triple Cheese." Dea guesses his biggest influence may possibly be *Ernie Kovaks*. He saw the series recently rerun on public TV "for the first time since I was about five," and was amazed to find a number of the late comedian's schticks had resurfaced in early black and white videotapes - made in art school. Dea studied painting and sculpture (he does most of his art direction still) and spent two years in New York "trying to be a video artist," showing at *Global Village* and the *Kitchen* in Soho. He spent three and a half years as a director with San Francisco's *Videowest* before putting out his own shingle.

Now he'd like to make movies and feels the aesthetics of the rock promo are merging with film styles. "One from the Heart was just a big rock video," he observes, "Pink Floyd's movie was just rock videos, too."

He's anxious to dispel the notion that he can only do low-budget horror and sci fi. "I'd do one, just as a stepping stone," he admits. He is working on a comedy horror script,

with **Richard Day** who helped write the storyline for "Jeopardy." Mostly he'd like to "get out of rock videos" and their inherent constraints of time, money and stress.

"One of the reasons the zombie scenes in the church in "Jeopardy" look so good is we were shooting it at four in the morning," he says. "I'd been shooting for 27 hours straight. We put the zombies in their places and put up a little smoke. When I looked at them, their eyes blacked out, they were so tired from going for so long; they **really looked like zombies!** I freaked. I said, 'Wait a minute!' and stepped outside and shook myself, then went back in the church and did the shot."

VIDEO PEOPLE

After a brief stint as president of **Thorn EMI's** delay-plagued VHD disk programs venture, **Gary Dartnell** has been upped to executive chairman, Thorn EMI Video and Film. **Pacific Arts Video** Records has promoted **Nancy Huckaby** to director of manufacturing, to oversee cassette and disk production.

Daniel Sofer recently returned

from a tour of New York and LA clubs, performing synthesizer music with video. **Ron Hays**, who handled the bumpers, logos and visual music sequences for the 1983 **US Festival** has three visual music concerts planned this month at the Hollywood Bowl with the **Los Angeles Philharmonic**. **Pam Susson** was promoted to production manager of music programming at **E.J. Stewart**.

Facilities News: **Regent Sound Studios** has purchased the studio space vacated by Soundmixers in New York's historic Brill Building. Three of the four studios will be renovated for audio-for-video post production. Studio D will be a "budget" audio-video mixing room, says Regent president **Bob Liftin**. Also in New York, **Sigma Sound** has upgraded its video post with an SSL 6000E console; MTI has installed a Harris TV-3 in its new studio. The old Pathe RKO stage up on Park Avenue is now called **MTI Television City**.

ROCK VIDEOS FOR THE DEAF?

Videowest Productions is

putting the finishing touches on a promotional video for **Musign Theatre**, a Berkeley, CA, troupe who dance, mime and "sign" their way through a repertoire of rock, Broadway and '50s tunes for hearing-impaired audiences.

Lip-sync jokes aside, Musign president **Paul Tanzar** explained that the videotape will be sent to booking agents and to augment TV performances. The group combines sign language with choreography to translate tunes like "Rock around the Clock," and the Pretenders' "Brass in Pocket" in its act. "Devo's real popular with our audience, too," says Tanzar. "Songs like 'Whip It' are very rhythmic to watch, and people seem to like the messages in their lyrics."

The video includes performance footage shot at California School for the Deaf and an elaborate outdoor production of "Boy from New York City" with '50s props, costumes, and vintage cars. The tape does have an audio track; Tanzar says recorded music is used in the performances for the benefit of those who don't understand sign language - but can hear. **Michael Talbot** produced and **John Torcassi** directed the project. ■

DEVO'S DR. DETROIT MUSIC VIDEO

The closest thing we have to Monty Python in the world of music video is DEVO. Their latest romp is "The Theme from **Dr. Detroit**." Mark Mothersbaugh and Jerry Casale wrote the storyboard with the creative technical assistance of Metavision, a Los Angeles teleproduction house. Classy sets and believable futuristic gadgets were supplied by Modern Props. The project was directed by Jerry, and produced by Bob Weiss, who also produced the feature film.

The theme of this video is irreverence. DEVO have depicted themselves as mad scientists in the Club DEVO video laboratory. Two Oriental girls chosen from the class of an East Los Angeles high school portray their assistants, Sushi and Unit. Together they take footage from the actual **Dr. Detroit** film, superimpose themselves into the action, and go hog wild with high technology. The entire shoot was done on video, and as things get out of hand they even appear briefly as country and western musicians.

Jerry describes the scenario: "It's like when a kid of fourteen takes his



Mark Mothersbaugh getting a last touch of make-up on the set by **Karen McNamee**. **Bob Casale** in background and on monitor.

schoolbook and makes fun of it with graffiti. We've taken a film and used the special effects available in the state-of-the-art and messed around. We've keyed ourselves into it for immediate low level hoots, and screwed around with the technology - which becomes subversive in its own right."

"It's New Wave Dada," adds Mark.

The theme song is a rousing, rhythmic, synthesized composition recorded at The Record Plant in L.A. It has been released as a single and also

appears on the Backstreet Records soundtrack album which includes "Luv, Luv," another DEVO tune from the film.

Mark, who has a vast collection of masks, glasses, and costumes, appears for the first time in his new inflatable latex suit, which was specially ordered from a sexual fetish house. The cost was a whopping \$1,067, but it has the designer distinction of being one-of-a-kind. "The high price of fashion is just getting higher every day," he quips. "This is real inflation."

—David Goggin

by Neal Weinstock

According to stories I read in several of the trades, digital special effects in film and video are dead. A fad whose time has passed quickly, says Backstage (an approximate quote) for instance. I quote because this death is no less exaggerated than Mark Twain's was, when he uttered his deathless, "The reports of my death are greatly exaggerated."



The Video/Audio/Computer Interface

Perhaps even more so than Twain's. Computers share few human frailties.

Computer-designed song accompaniment surrealism, on the other hand à la "new look" advertising and many a rock video, was pretty much dead with the impossibly bad *Dreams That Money Can Buy* of 1946. (Impossible because with all those talents of Alexander Calder, Fernand Leger, Marcel Duchamp, Max Ernst and Man Ray, one would have expected something better than this ludicrously bad film. The esthetes who made it snorted snobbishly towards the declassé Hollywood of their time - the same year as such terrible movies as *The Big Sleep*, *Notorious*, *My Darling Clementine*, and *Diary of a Chambermaid*. On the other hand, why should painters, or rock musicians, know how to make a movie?) Garbage in, garbage out, as they say in Sunnyvale. Just because eye garbage can be churned out fast-

er on a computer, the new art of digital graphics is not to be denied.

At this very moment, the state of the hardware and programming arts are moving towards micro-computer based graphics terminals that are capable of designing effects and animation only possible, in the Old Stone Age of 1982, with a \$60,000 and up mini-computer based system. Before describing the laundry list of availabilities for micro graphics, it seems useful to give an overview of where computer graphics are going and where they've been.

Let's break computer graphics, mighty big words, into the categories of motion control and display graphics. Motion control involves what the rest of the world (outside of movie-making) calls robotics. Display graphics would be anything designed on a cathode ray tube. (A TV is a CRT, and so is a vector-scope with resolution of 4,000 by 4,000 "pixels," or dots.) Motion control began as a film inspired technology, display graphics evolved from computer interaction with video, and now each finds equal use with either end medium.

The first motion control was developed by Oxberry, a decade ago, for their original automated animation stand. A mini-computer of that time, about as powerful as today's average micro, could be programmed to move the camera, focus, zoom, and the gels (drawings) on a vertical animation stand. Now, the latest Oxberry stand works with one of today's minis to control ever more functions, for ever more camera passes. Micro systems, however, are available to perform most of the functions of the original Oxberry at a price within affordability for the beginning studio.

Their latest offering, The Innovator 1000, was developed with Lyon Lamb Video Animation and was introduced at the 1983 NAB Convention. This new real-time stand combines analog joystick control of the zoom lens, rotation and East/West, North/South movement, with microprocessor digital programming resulting in precise operation at up to 24" per second. Lyon Lamb markets two frame-by-frame animation recording systems. The VAS IV is a microprocessor which controls both 1" and 3/4" broadcast VTRs for field accurate recording and editing directly on videotape. The unit allows single frame recording from camera sources as well as computer graphics systems. VAS III is an inexpensive production tool for video testing of animation and utilizes a specially modified 1/2" VHS cassette recorder.

Motion control does find salivatingly wonderful application in the

most recently developed Elicon Motion Control Camera. It functions a lot like an automated animation stand laid on its side, with the camera controlled along a track and crane.

Dan Slater, director of R & D for Elicon, describes some of its uses: "As an example, a simple spacecraft scene could be built up from the following scene components: One, star field background; two, spacecraft body; three, spacecraft lighting; and four, spacecraft window detail. Each component would be filmed separately because of differences in component scale or lighting. A fleet of space-

craft could be simulated by repeat pass filming of a single spacecraft."

For live action sequences, the easiest way to program the Elicon is by manually walking it through the shot. The camera, arm, and dolly will then be able to perfectly, infinitely, repeat the movements they have learned. The Elicon Motion Control Camera sells for a mere \$60,000.

To head into our second category, display screen animation had its beginnings in NASA and Air Force flight simulation, and with a few video experimenters in the early seventies. Now two-dimensional work of an infi-

nite variety can be animated by drawing with a light pen, filling in colors from a palette, and having computer memory fill in the motions between "key frames." Three-dimensional art is now also being done—and sometimes done so well that it doesn't even look to the viewer like a computer effect—just like some sort of machine or animal built for the shot. Three D is the cutting edge, and the most successful 3D artists are just now devising their own programming on hundred thousand dollar terminals like the Evans & Sutherland Multi-Picture System.

But 2D terminals are beginning to come out in a small studio's price range: the Cascade Graphics system is a beauty that works with an Apple (for \$23,000); Ithaca Intersystem's Graphos is meant to work with a mini, but can be interfaced with a micro (for \$8,000); and on a far less sophisticated but still quite marketable level, there are many graphics programs meant to run with Apples, Ataris, and particularly the Zenith home computer. Zenith's is probably the most interesting micro for graphic design because it has an "S-100" buss," the essential connector to all sorts of expansion in the mini class. For not much more than \$10,000, Zenith and Graphos would make a very powerful graphic design tool. ■



Ithaca Intersystem's Graphos can be interfaced with a micro computer

Computer Image

"Tron", the "Star Trek" movies, the "Star Wars" series and many other feature films that rely heavily on computer generated characters, backgrounds and titles, as well as most of the dazzling electronic video effects seen on television commercials, owe their heritage to the pioneering and developmental efforts of Computer Image Corporation of Denver.

It started back in the mid 1950s when Lee Harrison III began to visualize his dream of combining art and electronic technology to allow artists and animators another medium with which to communicate: television. In the process he helped to create what has become a new medium itself... Computer Graphics.

"We made an electronic beam behave like an artist's paint brush," Harrison states. "With the breakthrough of being able to manipulate video signals with precise control over position, timing, color and intensity we helped change the look of television commercials and broadcast promotions during the '70s."

After creating a new category heading of "Electronic Image Generation and Animation," the U.S. patent office has granted 19 patents to Computer Image in creating this new technology. The engineering of this new creative medium earned Computer Image Corp. an Emmy in 1972.

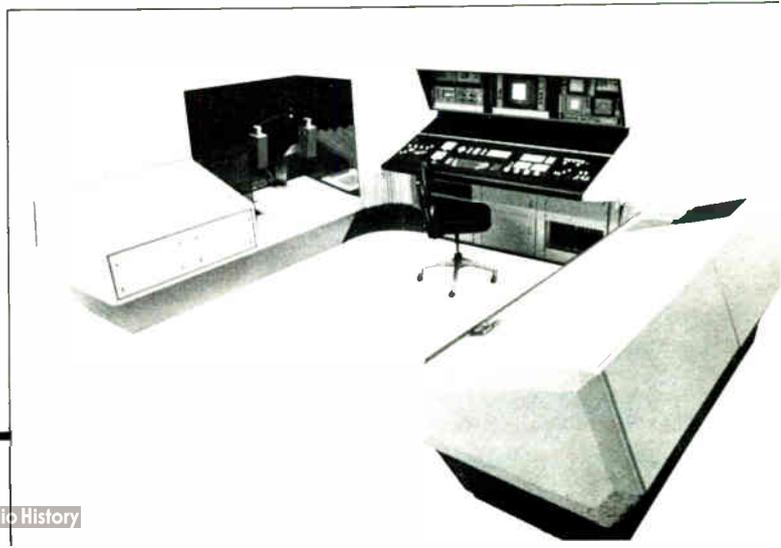
System IV is the name given to the current generation of C.I.'s graphics computer. The system can combine full color animation and live action in a composite color image which can be compressed, sectioned and rotated on any axis.

A key element in the continuing design of the system is that, as the creative options in terms of color, movement and image manipulation increase geometrically, the operation of the system gets easier, requiring less training and special skills to operate.

With a clear vision of design goals it is possible to create slit scan rotoscoping and other kinds of traditional animation effects, real time, and for significantly less production dollars. As the images are on video the producer/client can interact with the creative development throughout the entire production process.

As audiences, producers and artists alike start searching for more creative production options, it is clear that animation, special effects and computer graphics will begin to play a more important role in the expanding field of music video for cable and home video.

—Lou CasaBianca





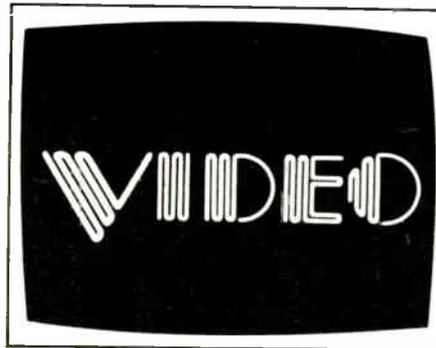
Harry Hirsch (standing), director of the School of Audio Arts at New York's Center for the Media Arts, addresses an audio mixing lab session.

Center for the Media Arts

When I used to write for a leading Japanese business magazine, the editor was interested in interviews with senior decision makers at RCA. "But RCA is falling to pieces," I'd object as only the young and cocky can, and I put off the interviews so I could concentrate on videogame companies that had the energy for the kind of Fitz-ballroom-decked-out-as-the-Congo-till-four-a.m.-including-uncaged-rhinos-and-apes parties that sure'y RCA once threw, too. The editor kept pressing. "RCA has taught Matsushita and Sony *everything*," he said. This was getting persuasive.

So I made my way, with notebook and tape recorder in hand, through all the rotten and self-serving levels of management of a company that had lost its direction and conviction. And then there were areas in which the empire was sound, like consumer electronics, satellite systems, and so on. In all of these areas there was a high proportion of people who had gone through the RCA Institute - the world's first corporate technical education program. And at the top of those areas that were effectively run at RCA is Roy Pollack, an engineer himself, a courtly old gentleman with vast respect for his Japanese competitors even as he plans strategies for first-downs against them. And Roy said, "Though I have tremendous respect for... Matsushita and others and what they've done there, the major difference in the success of the Japanese is in their level of education. Here we just can't find enough technically qualified people. ..."

And he went on to say that, once, RCA could do something about



INTERFACE

by Neal Weinstock

that, through the RCA Institute. He shrugged, regretting very much having to give that school up.

What used to be the RCA Institute is now part of the Center for the Media Arts. So is the Germaine School of Photography, the Albert Pell School of Industrial Arts, and a new Audio Arts division now being put together by the unique Harry Hirsch. All of the three original schools have had their ups and downs over the years - including downs so low that readers are excused for never having heard of them before. But the up that's happening now is very, very up.

Scott Cannell, executive v.p. for program development of the Center, explained some of those ups and downs. Vocational schools developed a lousy reputation, beginning in the '50s. "In an era when everybody was expected to go to college," he says, "only the dummies or the extremely disadvantaged went

to a trade school." Cannell is willing to allow that there's nothing wrong with the "enrichment" to be received at a university; it does prepare students very well to be well-rounded gophers when they get out. By the time the '70s rolled around, there were too many technically well-trained people needed in all of the media arts for all of them to get trained on the job.

Trying to teach audio on a blackboard is like teaching sex that way: in either case about all you'll learn is how not to get herpes. "Unlike sex, you can't learn to mix by watching somebody else do it," adds Harry Hirsch.

Now is the time for technical schools, in audio, video, film, music, art, computing; the list of interfaces goes on. According to Cannell, more than a quarter of his students have already been to college; the Center gives them something they couldn't get there. The school has a cooperative credit arrangement with the New York University, too; giving students a liberal dose of the arts not taught in Liberal Arts.

Why is a story about this school a subject for *Video Interface*?

"There's about a twenty percent interplay between the different media we cover," says Cannell. "They should be grouped together. They are increasingly used together."

Okay, it's a media trade school - what makes that so special? Harry Hirsch makes it special, for a good starter. The audio classrooms that Harry has created are like no other classrooms on earth. Every student has his/her own mixing board and

master recorder, all hooked up to one master recorder and a pair of monitors, and a switcher. Everyone can make his/her mix of any recording session, then check it against Phil Ramone's mix - as Harry demonstrated when we visited. The teacher can play any one of the student mixes, or the master, to the class at large. Every student has his own board! No waiting around for that one golden moment of truth, all of whose lessons are soon forgotten anyway. Now that's the way to teach audio production!

To anybody such as this author, who was once supposed to teach audio on a blackboard with just one ten by ten foot studio and a six by ten control room, this looks pretty good. Harry has a gorgeous audio studio going up now in the Center - it'll be the twelfth twenty-four track studio he's built. "My studios have sold eighty million dollars in hit records, but this is such a joy for me," he says. "I'm having more fun that ever."

The audio studio, like the lovely new video studio now nearing completion, will be available not merely to students but also, at no profit, to those not yet making any profits.

However, there are a lot of people not making profits presently in the audio industry. As wonderful a technological feat as is this well-equipped audio school in New York, how wise an investment is it - for the school itself and for students who will vie for gophershops on graduation?

Here again we have a video interface. "The only way we could really justify the audio division is by emphasizing sound for film and video," says Cannell. Proof that the school is moving in the right direction can be found in Cannell's claim that since the three founding schools were brought together as the Center, just two years ago, the job placement rate has been, "75 to 90%. And two thirds of our graduates," claims Cannell, "get really good jobs in their field." Perhaps most telling, all of these statistics are *before* completion of all the wundertech we've been hyping.

Any competent graduate of the old RCA Institute used to be able to count on a job at graduation. Any current graduate of the similar Matsushita Institute in Japan can count on the same. But of course, companies like RCA no longer dominate the recording industry here like their imitative brethren do in Japan. And who'd want it that way again here? On the other hand, it's nice for a kid to be able to get an education in what s/he wants to learn - and it's pretty nice for the industry to know there's a place to count on finding new recruits who know what they're doing. Finally, such a place is coming into existence in New York City. ■



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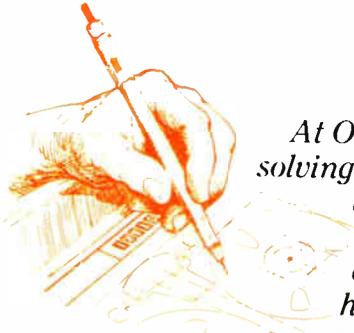


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